S. HRG. 104–366, PART II

ENDANGERED SPECIES ACT REAUTHORIZATION

HEARINGS

BEFORE THE

SUBCOMMITTEE ON
DRINKING WATER, FISHERIES, AND WILDLIFE

OF THE

COMMITTEE ON
ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE

ONE HUNDRED FOURTH CONGRESS

FIRST SESSION

JULY 13, 20, AND AUGUST 3, 1995

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OPENING STATEMENTS

WITNESSES

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ENDANGERED SPECIES ACT REAUTHORIZATION

THURSDAY, JULY 13, 1995

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

FEDERAL ADMINISTRATION OF THE ENDANGERED SPECIES ACT

The subcommittee met, pursuant to notice, at 9 a.m. in room 406, Senate Dirksen Building, Hon. Dirk Kempthorne (chairman of the subcommittee) presiding.

Present: Senators Kempthorne, Thomas, Reid, Lautenberg, Boxer, and Chafee [ex officio].

Also present: Senator Baucus.

OPENING STATEMENT OF HON. DIRK KEMPTHORNE, U.S. SENATOR FROM THE STATE OF IDAHO

Senator KEMPTHORNE. All right, ladies and gentlemen, I will call this hearing to order.

I welcome all of you this morning. So far, the subcommittee has held four hearings related to the reauthorization of the Endangered Species Act. At these hearings, we've heard about specific problems related to the ESA. The Pacific Rivers Council lawsuit over section 7 consultation, moratorium on further listings and designation of critical habitat, the effect of ESA on the military preparedness of Fort Bragg, NC, and the effect of the National Marine Fisheries Services policy on the spilling of water over the Snake and Columbia River Dams.

These hearings have been beneficial to the understanding of current administration of the Act itself. Equally informative were the field hearings which were held in Idaho and Oregon. The subcommittee heard from people whose lives have been affected by the Act. We've heard straightforward and blunt testimony about real world problems of private property owners, industry, local, and State governments have with the Act, as well as some of the ideas for reform. We also heard testimony as to how people feel the Act has been beneficial.

Today we begin a series of three Washington, DC hearings, to examine specific aspects of the Endangered Species Act. I hope we'll hear both the good and the bad about the Act, as well as sugges-

tions for bringing the Act in balance. Because in my opinion, it is not balanced currently. That's why reform is needed.

This morning we'll hear from representatives of the Administration on the proposals for the future of the Endangered Species Act. I'm pleased to see that Secretary Babbitt will join us this morning as well as Assistant Secretary Doug Hall.

Today's hearings will also explore the listing process, how we can get the best scientific information, make sure that information is put through meaningful and credible peer review, and is communicated to policymakers. We're fortunate to have experts from some of America's leading universities here to provide their thoughts on the science behind the Act. Previous witnesses have told us that they want greater roles and responsibilities for State, local and tribal governments under the ESA. We'll explore that subject today with local and State elected officials, and we'll hear from witnesses who have studied the Act and reform.

At later hearings, we'll look at the international issues, recovery plans and delisting of species, incentives for citizen participation in species management and conservation, consultations and critical habitat, and habitat conservation plans.

I have met personally with every member of this subcommittee in order to explore their interests and desires for the reauthorization of the Endangered Species Act. I found a great interest in reauthorizing the Act this year. Reform of the Act must, as I've outlined before, contain some basic principles. It must return to the original intent of the Act. I believe that it's evolved into something that is far different than was originally intended. We must utilize the best science available. Conservation plans must be decided in an open public policy forum based on options from the finest scientific data.

Incentives must play a major role, as will reaffirming constitutionally guaranteed private property rights. The expertise and input of our partners in local and State governments needs to be part of the Act. We'll hear more about that today. We need to reform the process governing the administration of the Act to make sure everyone understands what's expected of them. There's too much uncertainty on the part of everyone involved in endangered species.

Certainly we cannot overlook the species and the habitat that this act is designed to protect. We must carefully balance concern for wild species with concerns for the human species. It won't be easy, but I believe that we can find that balance, and every effort will be made to do so.

Senator KEMPTHORNE. Now, I'm joined at today's hearing by the chairman of the Environment and Public Works Committee, as well as the ranking member of the full committee, and we're very appreciative of that. Let me turn to Chairman Chafee to see if he has any comments, and then I'll be turning to Senator Baucus to see if he has comments this morning.

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

Senator CHAFEE. Well, thank you very much, Mr. Chairman. First, I want to congratulate you on the very thorough and atten-

tive manner in which you are going about the reauthorization of the Endangered Species Act. It's been my privilege to have sat in on several of the hearings, including two that you held out west. No one could be at those hearings without coming away with the distinct impression that you were conducting them in an extremely fair manner and bringing before the committee a balanced group of witnesses, those from both sides, and in the middle, likewise, who have views on the Endangered Species Act.

I think today's witnesses certainly provide a wealth of expertise and experience that will help guide us in our reauthorization efforts. The hearings, as I mentioned earlier, by this subcommittee in Idaho and Oregon, and conversations with landowners and government officials that I've had, that you've had, across our country have left me fully convinced that the Endangered Species Act can and ought to be improved. I look forward to working closely with you, Mr. Chairman, and other members of this committee to report legislation to make this Act work better.

In this process, what is our goal? What's the purpose of the whole Act? It's to conserve threatened and endangered species in an effective and a reasonable manner.

So let's examine the problems with the implementation of the Act and strive toward solutions that, as you frequently mention, and I couldn't agree with you more, that we've got to provide incentives in the Act for careful stewardship of our natural resources by public and private landowners. I believe we can realize this goal if we take the time and care to draft a responsible and effective package of ESA reforms.

The complexity and uncertainty surrounding scientific issues relating to the Act can be a daunting matter. I'm pleased that you have included a panel of scientists in the hearings that we're going to have this morning. By amending the Act in a thoughtful manner, I believe we can take pride in the legacy that we leave for future generations.

I'd just like to close by a quote from one of my heroes, Theodore Roosevelt. This is what he said 85 years ago:

> Of all the questions which can come before this Nation, short of the actual preservation of its existence in a great war, there is none which compares in importance with the central task of leaving this land even a better land for our descendants than it is for us.

So all that is involved in the Endangered Species Act, and I thank you again for the attention you're giving to the task.

Senator KEMPTHORNE. Senator Chafee, thank you very much for your comments.

Now, Senator Baucus.

OPENING STATEMENT OF HON. MAX BAUCUS, U.S. SENATOR FROM THE STATE OF MONTANA

Senator BAUCUS. Thank you, Mr. Chairman.

I want to begin by noting and applauding the tone of your opening statement, Mr. Chairman, as well as Senator Chafee's. Both of you talked about balance, common sense, and I think if we accomplish our objective, we'll only do so with that approach. And I note that, and I commend you both and I applaud you both for it. Be-

cause I do believe that frankly, the success of this reauthorization does depend on just that. It's on balance.

This Act is one of the most important environmental laws that we have in our country. I think if we begin with that point, that also will help us and guide us to a good solution. It is literally the last line of defense against extinction, an important point to remember.

But the Act does have problems. Sometimes it imposes large burdens on landowners. It doesn't give State governments a sufficient role. It relies too much on penalties, not enough on incentives. Our task is to maintain a strong law to make it work better for farmers, ranchers, timbermen, miners, and homeowners who have a great deal to do with the Act every day.

To accomplish this, we need to work together in a constructive and a thoughtful way to identify the real problems, identify the workable solutions. It's not going to be easy, especially since these days Congress seems to better at partisan sniping than bipartisan solutions.

Fortunately, Mr. Chairman, we have a very good example to help guide us. That's the Montana Endangered Species Reauthorization Committee. I'm delighted to personally welcome the co-chairs of the committee to this hearing. They'll be testifying on a later panel. They are representatives of the State Legislature in Montana, Dick Knox and Emily Swanson. Both Emily and Dick serve on the Montana State Legislature. One is a Republican rancher near Winifred, MT. The other representative from a university committee, Bozeman, MT, and a conservationist, they've worked very long and hard together and have accomplished a great deal.

Over the past 18 months, Dick and Emily have worked closely with other members of their committee, which include Democrats, Republicans, environmentalists, representatives of the ranching and farming community and timber community, to try to find a common ground in the ESA debate. This is not easy in a State like ours in Montana, where we have very diverse interests, very contentious different points of view.

But as they will testify later this morning, they have succeeded in reaching agreement on 7 guiding principles and 13 individual recommendations. We can learn a great deal from their recommendations about their approach, about building consensus, about giving States a greater role, about the need for good science, and about the importance of promoting the conservation of species before they are threatened with extinction.

I look forward to this hearing, Mr. Chairman, and I urge us to keep the tone that you began with, namely, balance and ignoring the rhetoric, rather focusing in on the facts and rolling up our sleeves and just getting this job done, so that the Act is still strong, but is appreciated better by and is supported much more by more people in our country, and we can move on to other issues.

Thank you.

Senator KEMPTHORNE. Senator Baucus, thank you very much.

I also want to acknowledge and welcome the Senator from California, Senator Boxer.

OPENING STATEMENT OF HON. BARBARA BOXER, U.S. SENATOR FROM THE STATE OF CALIFORNIA

Senator BOXER. Thank you very much, Mr. Chairman, for calling this hearing today on the Endangered Species Act.

I am very pleased we're getting on with the serious business of reauthorizing this important law. I'm a strong supporter of endangered species and environmental protection, because I believe that leaving this Earth in better shape than we found it is one of our most important responsibilities. I also believe that we cannot have long-term economic growth without a healthy environment. As I always say, if you can't breathe, you can't work.

But protecting endangered species is more than just a policy issue for me. It is a spiritual and a moral one.

Mr. Chairman, how can we decide that a species does not deserve to share this planet with us, when we are all God's creatures? I believe that turning our backs on nature is immoral, and I believe it is foolish.

But we all acknowledge that there are problems in implementing this law, and I believe it is time to make the Endangered Species Act work smarter and more efficiently for all Americans. We need to surgically improve the Act, not dismember it or gut it. Since 1988, when the ESA was last reauthorized, we have learned a great deal from the emerging science of conservation biology about the ecology of species and the ecosystems on which they all depend. We have developed new and creative land conservation tools. We need to incorporate these new tools and knowledge into the ESA to improve its efficiency.

One reason that we've had some problems in implementing the Act is that the program has never been adequately funded. With the budget constraints we now face, and with the priorities of the new majority in Congress, I am under no illusions that we will have more money for this Act.

But I believe these budget limitations require that we develop even greater creativity and vision in solving our Nation's biodiversity crisis. I believe that early prevention through better regional planning is the solution. When problems are tackled early, there's more gain with less pain. We must encourage local and regional land use plans that accommodate economic development in the least environmentally sensitive areas, and conserve the natural ecosystems on which all life depends.

The key to making this approach successful is to get everyone involved, so that they understand the problem and participate in the solution. Mr. Chairman, this approach has worked beautifully in California. We have some very wonderful models to go by. I believe that our land and our people have always been this Nation's greatest assets. To solve our endangered species problem, we must bring our people and our land together. History has shown that when we bring our people and our land together, we can achieve greatness. When we are polarized and divided, we invite disaster.

I recently received a copy of this report, "Saving America's Wildlife, Renewing the Endangered Species Act," by the Defenders of Wildlife. On the cover you see one of the magnificent successes of this Act. Now, what's important is, not all the endangered species are as beautiful as the American bald eagle. Matter of fact, I've

heard many of the species being laughed at, why are we saving this rat, that shrimp.

Yes, they're not all as beautiful as this American bald eagle. But without them, this American bald eagle might not survive. And so down the chain, without the natural environment, some day we may not survive.

So the Endangered Species Act is not only about little creatures, it's about some big creatures, human beings. I hope we won't lose sight of that as we work together to improve the Act. I certainly hope that we will work together, Mr. Chairman, because I'm dedicated to making the Endangered Species Act work.

Mr. Chairman, thank you very much.

Senator KEMPTHORNE. Senator Boxer, thank you for your comments.

Now, the Senator from New Jersey, Senator Lautenberg.

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

Senator LAUTENBERG. Thanks, Mr. Chairman, I am pleased to be part of this discussion on the Endangered Species Act. This Act, I believe, helps detail not only the past, the history, the present, but certainly the future for ourselves and our families, frankly, I think ultimately for the human race. I commend you, Mr. Chairman, this is a good way to begin the comprehensive review of this issue, which goes to the heart of our relationship to other living organisms that share the Earth with us.

The way we define that relationship will determine the degree to which we accept the Biblical injunction to be the stewards of our dominion. Like many environmental laws, the Endangered Species Act is under attack here in Congress.

But before we move to change the law, we need to understand what moved the public and the Congress to pass it over 20 years ago, and reaffirm it many times since then. The Endangered Species Act was a bold attempt to halt the dangerous disappearance of an increasing number of species. The Act does more than preserve species, it protects people by conserving the biological resources upon which we depend. Some of that dependence is difficult to define. It exists in terms of the interdependence of all life and the sanctity of ecosystems.

But some of the consequences of conserving species are clear. Some are so obvious, they save lives in the form of developments of medicines. They provide jobs in the case of the fishing industries and others. The healthy ecosystems promote economic development, such as tourism, recreation, generally. The Act enables us to take proactive steps that address threats to species before their decline is irreversible.

We need to save endangered species before key components of our ecosystem are relegated to the walls of natural history museums. We have a moral responsibility to make sure that doesn't happen. The Act is due for reauthorization, and that's why we're here today. Once again, Mr. Chairman, I thank you for opening the discussion on the Endangered Species Act. What we've seen is the Act being trivialized by statements on the floor, by trying to end its being by casual amendments to irrelevant legislation.

While we need to hear from those on the extremes of the issues, and understand why they subscribe to these positions, we need to also find a common ground. Now, we all know that the Act is not perfect and the controversy surrounding the Act tells us that we need to reform it. We've all heard the horror stories of innocent landowners who have been wronged for one reason or another. However, we also need to recognize that many of these problems stem from the failure to fairly administer the Act, rather than the faults of the Act itself.

The refusal to implement the Act has created the train wrecks that are now legendary, such as the Snail Darter or the northwest spotted owl controversies. The Act contains the flexibility to resolve many problems if administered creatively. Witness the recent reforms initiated by the Department of Interior. Those reforms were initiated because there was some common ground on how to solve some of the problems attributed to the Endangered Species Act.

Our goal during these hearings should be to listen and learn from our panelists, as well as the public's reaction, to these hearings, and seek additional common ground. I hope that the common ground that we arrive at includes six basic ideas. First, we need to preserve the intent and the spirit of the Act as originally written and amended over the past 20 years. We need to protect disappearing species and the ecosystems upon which they depend.

Second, the Act itself and the methods developed to implement it must be based on sound science. Third, the focus should be on those initiatives that obviate the need for listings. That's what we need to engage thusly in a little preventive medicine. Fourth, to minimize conflict, we need to involve the stakeholders earlier in the process and provide more certainty for local and State communities and for landowners.

Fifth, we ought to provide creative incentives to encourage landowners to kind of do the right thing by helping protect species. Sixth, we must insure that the program has adequate resources to carry out its mission.

The Senator from California made the comment about how tough it's going to be. But we have to decide on how necessary the endangered species is to our lives currently and in the future. We've got to explore all the ideas and others to see where we agree and where we disagree.

One thing is clear, however. We cannot legislate by emotion and anecdote. We ought to put the stories aside and get down to business. I am eager to begin. I look forward to this hearing and other hearings. While theoretical discussion is important, I also look forward to hearings on specific legislative language so we can study the details of the proposal to see if it meets our expectations.

Thank you, Mr. Chairman.

Senator KEMPTHORNE. Thank you, Senator Lautenberg.

I would like to place the statement of Senator Lieberman in the record at this point.

[The statement of Senator Lieberman follows:]

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

Thank you Mr. Chairman for this chance to express my support for a strong reauthorization for the Endangered Species Act. This hearing is timely considering re-

cent events: Just 2 weeks ago the Supreme Court affirmed the Federal Government's interpretation of the Endangered Species Act (ESA) with respect to habitat protection on private lands. Days before, the National Academy of Sciences (NAS) released a congressionally directed, 4-year study that endorsed the scientific soundness of the ESA and provided guidance for improvements to the Act.

We are also debating regulatory reform on the Senate floor as we speak. One thing that seems clear to me is that Americans do not want environmental safeguards reduced or eliminated, but do want better ways of achieving them. I am looking forward to a good set of hearings on the ESA to elaborate on what we can do to achieve this.

I am particularly heartened by the Supreme Court's affirmation of Congress' intent to protect habitat under the ESA. I regard it as common sense that protection of food, water and shelter is as essential to species protection as avoidance of death from injury or predators. Long before the ESA was enacted naturalists, wildlife scientists and resource managers in this country recognized habitat as a key limiting factor for wildlife. I think we all agree that balancing private and public values related to habitat protection can be a complex issue at times, certainly the courts have found this. But, I believe we should focus on the future of the Act now with this clarification behind us, and learn how to more effectively and expeditiously solve critical habitat needs. I hope we can focus on cooperative, win-win approaches to habitat protection that honor the intent of this Act.

The NAS report provides this committee a strong framework for improvements to the ESA. It was a long time in coming—4 years—but worth the wait. We should take advantage of the accumulated thinking and consensus this provides on the use of science for endangered species protection. In my view, any changes to the ESA should be based on, and consistent with, good science as defined by NAS and other respected groups. Toward this end, the NAS provides several useful findings, including:

- a strong affirmation of the scientific basis for habitat protection and its importance to long-term survival of species;
- the conclusion that the ESA is only one policy tool needed to assure long term survival of endangered species, and that supplementary policy and legislative approaches are necessary;
- the finding that Federal agencies have done a good job of basing species listing decisions on good science;
- the finding that Federal agencies need to improve the scientific basis and timing of Recovery Plans; this is an especially important point, since it seems to be the root of many concerns voiced about the Act;
- the importance of giving priority status to "umbrella" species that serve as indicators for larger plant and animal communities.

In addition to the NAS report, Interior Secretary Babbitt has provided a useful framework for improvements to the Act with the ten point plan released earlier this year. This plan includes administrative flexibility and quality control actions, including: stronger peer review of listings; a safe harbor policy for landowners creating new habitat; speedy habitat conservation plans and negotiated regional habitat protection approaches; greater State and local involvement in recovery planning.

I believe that the combination of recommendations and actions by the administration and the NAS can go a long way toward improving the Act and resolving its problems. I think it is essential for us to work with the Administration and independent scientists throughout our hearings and legislative debate.

The Secretary's recent announcement, from a nest site atop a New York skyscraper, that the recovery of the American Peregrine Falcon population is imminent comes at an important time. It symbolizes the great success of this Act. These birds narrowly escaped extinction due to conservation efforts and are very close to meeting scientifically determined recovery goals for long-term survival. It is truly something we can all be proud of. Can you imagine a more integrated and innovative approach to recovery of the peregrine than the combination of pesticides control, captive breeding and artificial nest site programs in such remote wilderness areas as Manhattan!

The recovery of the Peregrine is also instructive because it relied in large part on legislation other than the ESA. The banning of pesticides that thinned egg shells was done through environmental laws other than ESA that are now coordinated with ESA through the section 7 consultation process. Pesticide laws prevented reproductive damage to adult birds, but that wasn't enough to engineer a recovery. Captive breeding and rearing programs were needed. The ESA Recovery process provided a long-term recovery program that involved active propagation and population management by wildlife biologists from a variety of institutions. Many birds other than the Peregrine were able to recover under tighter Federal pesticides laws,

including the American Bald Eagle and Brown Pelican, both of which have made amazing recoveries.

Many other species have recovered due to laws other than ESA that provide habitat protection. The Colombian Sharp-Tailed Grouse of Idaho was a candidate for listing as threatened under the ESA prior to the creation of the Conservation Reserve Program (CRP) of the Farm Bill. According to the Wildlife Management Institute, this bird has recovered to the point that it no longer needs to be listed under ESA because of very successful CRP enrollments in Idaho. The Wildlife Management Institute suggests that many other declining species could benefit from the CRP, and help needy landowners in the process.

The Wetlands Reserve Program of the Farm Bill may hold similar potential; an estimated one-third of all endangered species reside on wetlands. Other species depend on protection from Federal laws including: the Clean Water Act, Marine Mammals Protection Act, National Forest Management Act and others. If these Federal programs are downgraded by this Congress they may have serious negative impacts on our ability to protect habitat. We should be mindful of these complications.

As we enter this series of hearings I think we should remember that the need to prevent species decline and habitat loss is growing, not declining. At the National Wildlife Visitor's Center at Patuxent National Wildlife Refuge in Beltsville, MD, there is an exhibit room called "Global Concerns" that provides displays and some real-time ticker tape meters that include:

- world population growth—which increases by 175 per minute and 90 million per year;
- loss of global rain forest—lost at 100 acres a minute, gone totally in 55 years at that rate, home to most of the world's plant species;
- global warming changes—estimated to increase between three and nine degrees, and sea levels from two to six feet, by the year 2050;
- global ocean pollution—34 billion tons of contaminants are dumped in our oceans per year, home to over 250,000 plants and animals;
- loss of U.S. wetlands—home to an estimated one-third of threatened and endangered species in this Nation, about 1000 acres are lost per day, and more than half have already been lost;
- loss of fertile U.S. topsoil—at the rate of 24 billion tons per year, one third of the world's topsoil is already gone;
- global loss of plant and animal species—plants are lost at 100 per day; at current rates half of the plant and animal species alive today will be gone in 55 years, a far greater rate than ever before in the fossil record; some scientists estimate that 10,000 species may be lost due to human causes by the year 2000.

These numbers are truly staggering. They change so rapidly before your eyes that they are numbing. If you blink, you miss the passage of a large part of creation. In the 7 days it took to make creation, a huge chunk of it disappears.

We can't turn these meters off and make the underlying problems go away. Nor can we eliminate them altogether. But we must recognize that they are interconnected, like our lives, our laws, our lands, our governments, our economic systems, our resources, and our cultures. As we proceed with reauthorization of the ESA I hope that our end result will significantly slow down one of the meters at this center. Otherwise our efforts are for naught.

RESPONSES BY STUART L. PIMM TO ADDITIONAL QUESTIONS BY SENATOR LIEBERMAN

Question 1. Senator Kempthorne recently gave me a copy of Mark Fuller's book *Noah's Choice*. I note that you are footnoted (page 76), along with Dr. Robert Askins of Connecticut College from New London, regarding the "species area curve" that is used sometimes to predict species extinction. Mr. Fuller is concerned that this method of predicting extinctions has its limitations that have not been recognized in its use. He concludes, ". . . . we need much more detailed knowledge about what's on the ground before we can construct a sensible biodiversity policy."

Answer. The species-area curve is derived from both theory and abundant observation. It provides a mathematical formula to tell us how many species will go extinct following the destruction of so much habitat. Dr. Askins and I applied the result to show that the destruction of forests in the eastern USA should not—and in-

deed, did not—result in large-scale extinction.[1] Elsewhere, similar forest losses should—and do—cause many more extinctions.[2]

Question 2.

Do you agree that the science of wildlife biology is not sufficiently advanced to "construct a sensible biodiversity policy" as Mr. Fuller suggests, or do you think we know enough "about what's on the ground" to move forward with species protection programs?

Answer. *Noah's Choice* is not the high point of science journalism. Its error, in this case, is to confuse two very different scales.

The species-area work enables us to understand continental to global patterns of biodiversity with the hope of clarifying international priorities for biodiversity. It illuminates questions such as why, for instance, Madagascar should be a higher priority than Germany, or what areas of Brazil are most important.[3]

No ecologist, to my knowledge, would apply the technique to plan how we might purchase a National Wildlife Refuge in Hawaii, set priorities for forest management in the Pacific Northwest, or water management in Florida's Everglades. For such actions we need more detailed knowledge.

Question 3. Do you have any other reactions to Mr. Fuller's critique of science of biodiversity protection? Do you agree with the horror stories that good science is not being practiced by Federal agencies in species listings? What about recovery planning? What improvements would you suggest?

Answer. I most certainly do not agree that "wildlife biology is not sufficiently advanced to construct a sensible biodiversity policy."

Noah's Choice implies that because the species-area work is not suitable to apply to problems for which it is not intended, nor to which it has never been applied in practice, that somehow the entire body of wildlife biology is flawed. This is patently silly. Aspirin stops headaches; the fact that it doesn't cure cancer does not diminish that utility nor imply that the medical profession is incompetent.

Question 4. Do we know enough "about what's on the ground" to move forward with species protection plans?

Answer. Certainly. And I do not "advocate slowing down biodiversity protection until more scientific research is done."

Question 5. Do you advocate slowing down biodiversity protection until more scientific research is done, should we move faster, or stay the same?

Answer. "Should we move faster?" Yes. From a scientist, you would not expect any other answer. My answer is not hard to justify, however. Biodiversity is valuable for a wide variety of reasons. (They are fully explored in a forthcoming report from the National Research Council.[4]) Management mistakes are horribly expensive. The better our knowledge, the less likely we are to make them. Ignorance is not bliss, merely added costs and frustrations to the next generation of tax payers.

Question 6. Do you agree with the "horror stories that good science is not been practiced by Federal agencies in species listings?" What about recovery planning?

Answer. I found *Noah's Choice* to be a grotesque caricature of the science practiced by Federal agencies. Scientists in Federal agencies should be appalled by the book's frequently botched facts and its selective and superficial reporting. My experience of biodiversity issues spans 20 years, almost all of the country, and includes many of the most contentious issues:

In Hawaii, in the late 1970s, I worked near Dr. Michael Scott of the Fish and Wildlife Service (FWS) and had frequent discussions with him. His work identified the important priorities for conservation in these islands that have such a disproportionate number of endangered species. Efficiently, and without fuss or controversy, FWS used this work to purchase key biodiversity reserves. Dr. Scott is now in Idaho; the extension of the Hawaiian work—the gap analysis program—is applied nationally.

In Hawaii, in 1990, Dr. Robert Smith (FWS) sought help from the National Research Council (NRC) in developing a plan for the 'alala—one of our most critically

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[1] Subsequent to the publication of *Noah's Choice*, the Pimm & Askins' paper appeared in the *Proceedings of the National Academy of Sciences* 92: 9343-9347 (1995). The paper was the subject of an article in the *New York Times* of Tuesday, Sept. 26th 1995.

[2] Results on the global extension of the ideas appeared in *Science* 269: 347-350 (1995). This article was also the subject of an article in the *New York Times* (July 25th 1995) and was considered one of the "top 100 science stories" by *Discover* magazine.

[3] The extension of the ideas to Brazil appeared in *Nature* 380: 115 (1996).

[4] The economic and non-economic value of biodiversity. National Research Council 1997. (A report sponsored by the Department of Defense.)

endangered birds. In implementing our committee's recommendations, Dr. Smith prevented the certain extinction of this species.

My role in the management of tile spotted owl was restricted to advice about how large a population of owls was required if it were to survive. I was always impressed by the breadth and excellence of the scientists Dr. Jack Ward Thomas (Forest Service) recruited for this project. My work with Dr. Jared Verner (FS5) appeared in the *Proceedings of the National Academy of Sciences.* [5]

In 1992, I was asked to give advice on a controversy pitting the management of Everglades National Park and the FWS' opinion on the long-term survival of the endangered snail kite. Our committee's report concluded that it was the process and not the science that was flawed. [6] The need for multi-species planning and for all the relevant agencies to contribute was an obvious recommendation. In April this year, I attended exactly such a meeting organized by Dr. Craig Johnson (FWS). Cooperation rather than controversy characterized that meeting.

In all this experience I have seen scientific debate and decisions one might have made differently with hind sight. But horror stories? Certainly not. Indeed, I feel privileged to have worked with these gentlemen. It may be some time before these species are "recovered" in the legal sense of that word. I have no doubt whatsoever that the species involved would be very much rarer (and the 'alala probably extinct) without their efforts.

Question 7. What improvements would you suggest?

Answer. The National Research Council and the Ecological Society of America have both issued reports on how biodiversity protection may be improved and its policies better implemented. As it happened, I was a reviewer on both reports and agree entirely with their conclusions. This is not surprising: there is considerable agreement in the scientific community on what should be done. I have nothing more to add.

[The following questions were submitted by Senator Lieberman, but the answers were not available at press time. The responses will be kept in committee files.]

QUESTIONS FOR SECRETARY BABBITT AND ASSISTANT SECRETARY HALL FROM SENATOR LIEBERMAN

Question 1. I believe that your participation in the reauthorization debate is essential. You have been responsible for implementing this Act for the last 2 years, and have the most recent experience with it. You have also attempted more innovation during that period than perhaps any other Administration. And, you represent a strong affirmative commitment to furthering the goals of this Act.

From that perspective, what guidelines or suggestions can you provide to the drafters of reauthorization legislation?

What role do you think the NAS report recommendations should play in guidelines for reauthorization? What effect would they have on implementation of the Act fully implemented?

What other specific proposals could you suggest at this point?

Question 2. The State of California has developed a Natural Communities Conservation Planning program in conjunction with Federal agencies and local governments. My understanding is that this is a very bi-partisan approach endorsed by the Governor of California, you and many others. If I understand it correctly, it uses the ESA section 4(d) rule for *threatened* species as a mechanism for designating a State lead for a Recovery program. I am told that this has been very successful and popular in southern California with respect to the protection of the gnatcatcher and the large ecosystem it shares with many other rare species. This must be the most expensive real estate market in the country, and quite a challenge.

Can you comment on the political and economic success of this program?

Why was the gnatcatcher chosen for this, as opposed to some other species? How many listed or candidate species have been protected in the process of protecting the gnatcatcher?

Do you think this program represents a model for all threatened *and* endangered species (note: it only applies to threatened species now)? If so, do we need legislative changes to make sure that this will be done where appropriate in the ESA of the future?

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[5] *Proceedings of the National Academy of Sciences* 90: 10871-10875 (1993).

[6] *Report of the Advisory Panel on the Everglades and Endangered Species.* 44 pages. National Audubon Society, New York. (1992)

Is this the proper approach to developing greater State, local and private involvement? Would you recommend it for other States and regions in the country? What are its limitations?

Are there any other State, local or private ESA approaches that are working that we should be aware of and explore for ideas for ESA reauthorization? What are they, how can they help?

Question 3. As you are painfully aware, we have heard testimony in this committee, on the Senate floor and in the media of several "horror stories" regarding implementation of the ESA. They include allegations that good science is not being used in listings or recovery plans, that private landowners are being deprived of substantial economic uses, that Federal agencies can't cope with the section 7 consultation process, that many species being protected simply aren't worth the cost, etc. I know that you have reviewed many of these stories and tried to confirm them.

Can you tell me what proportion of these horror stories are accurate, how many are simply wrong, and how many are in the gray area in between? Of what relevance are they to our reauthorization debate?

Are you aware of any academically reviewed economic studies that support the contention that the ESA is slowing down economic growth and hurting U.S. business? What about U.S. homeowners?

Can you respond to a few stories that have been raised recently including the allegations that:

- protection of the Steven's Kangaroo rat is responsible for preventing control of the California wildfires;
- Mr. Cone of North Carolina is unable to harvest timber from his land due to the Red-Cockaded Woodpecker and has therefore suffered a massive taking of his private property;
- protection of the Pacific Northwest forests for spotted owls and salmon has cost a net of 85,000 jobs in the region;
- endangered sea turtle protection has wiped out a substantial portion of the shrimping industry on the Atlantic and Gulf coasts;
- Ms. Rector of Austin, TX, suffered a $800,000 diminution of value on her 15 acres solely due to protection of the Golden-Cheeked Warbler;
- the Arkansas River Shiner will cost farmers throughout a wide region in Texas, Arkansas and Oklahoma $2000 each if proposed habitat protection is implemented under ESA.

Question 4. We have heard testimony suggesting that there is some difficulty on the part of some Federal agencies with interagency coordination of ESA efforts by your agencies.

If we reauthorize the ESA in such a way to make the section 7 consultation process purely voluntary by other Federal agencies, what impact will this have on your ability to provide species recovery plans? Will it force more of the focus of the Act on private lands as opposed to working through public programs first?

QUESTIONS FOR MICHAEL CLEGG FROM SENATOR LIEBERMAN

Question 1. You mentioned that "the ESA was not designed to carry out all of this nation's conservation policies" and that "the ESA, by itself, cannot prevent the loss of all species and their habitats," but should be viewed as one essential part of a comprehensive set of tools for protecting them.

Can you comment on some of the other tools and policies that you see as essential to endangered species protection, including Federal legislation such as the Clean Water Act and the Conservation Reserve Program and Wetlands Reserve Program under the Farm Bill?

What would a "comprehensive set of tools" include and who would develop it?

If the ESA is reauthorized in a way that reduces habitat protection, and if other Federal legislation such as the Clean Water Act, Farm Bill, National Forest Management Act and others follow a similar course, what effect is this likely to have on the number of species in serious decline, and their chances for recovery?

Conversely, if these Acts are strengthened to improve habitat protection, what effect will this have?

Question 2. Can you elaborate on your statement that "recovery plans . . . are developed too slowly or have provisions that cannot be justified scientifically?"

Why does this happen and what problems does it cause for species recovery and landowners? What changes need to occur within the Act to resolve these problems?

To what extent would resolution of these problems resolve landowner concerns about economic conflicts and uncertainty?

Question 3. You briefly mentioned the importance of market-based economic incentives.

Can you comment on the role that such incentives play, with some examples that have worked in the past, or could be expected to in the future?

Question 4. Your report encourages priority to be given to the protection of "umbrella" species that serve as indicators for larger plant and animal communities. As I understand it, management of umbrella species would protect habitat for other species with related habitat needs and give priority to the management of groups versus individual species.

Can you give some examples of umbrella species, and how they would be identified? Would they typically include animals at the top of the food chain such as large mammalian predators, owls and other birds of prey, or predator fish? Would they typically include migratory or wide-ranging species?

What are the downsides of managing for umbrella species?

Question 5. As a scientist, what is your view on the appropriateness of the recent Supreme Court Sweethome decision that concluded the ESA was intended by Congress to protect habitat, and had been properly interpreted as such by State and Federal agencies.

Is it your view that adverse modification of habitat is conceptually and scientifically just as much a threat to species survival as the application of direct force to an animal, such as by shooting or trapping?

What percentage of our current list of ESA candidates and listed species are limited primarily by habitat problems? By over harvest? By introduced species?

Question 6. Your report suggests a greater role for State government in the ESA.

What role do you think States should play in implementation of the Endangered Species Act *listing and recovery process?*

How good is their scientific capacity for assessing the need for species listings, and how can it be best used or improved?

QUESTIONS FOR ROBERT IRVIN FROM SENATOR LIEBERMAN

Question. I'm sure you have heard several of the horror stories we have on this committee about the ESA. Can you respond to some of them, including those I listed for Secretary Babbitt?

Can you tell me what proportion of these horror stories are accurate, how many are simply wrong, and how many are in the gray area in between? Of what relevance are they to our reauthorization debate?

Are you aware of any academically reviewed economic studies that support the contention that the ESA is slowing down economic growth and hurting U.S. business?

Can you respond to a few stories that were raised recently including the allegations that:

- protection of the Steven's Kangaroo rat is responsible for preventing control of the California wildfires;
- Mr. Cone of North Carolina is unable to harvest timber from his land due to the Red-Cockaded Woodpecker and has therefore suffered a massive taking of his private property;
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- Ms. Rector of Austin, TX, suffered a $800,000 diminution of value on her 15 acres solely due to protection of the Golden-Cheeked Warbler;
- the Arkansas River Shiner will cost farmers throughout a wide region in Texas, Arkansas and Oklahoma $2000 each if proposed habitat protection is implemented under ESA.

Senator KEMPTHORNE. Now I'd like to introduce our first panel. We're honored to have both these gentlemen with us. We have the Honorable Bruce Babbitt, who is the Secretary, Department of Interior, and the Honorable Douglas K. Hall, Assistant Secretary, Oceans and Atmosphere, of the U.S. Department of Commerce.

Gentlemen, welcome to you both, and Mr. Secretary, if you'd like to lead off with your opening comments.

STATEMENT OF HON. BRUCE BABBITT, SECRETARY OF THE INTERIOR

Secretary BABBITT. Mr. Chairman, committee members, I would like, if I may briefly, to see if I can provide you a sense of some of the issues that we've been dealing with over the last couple of years, and the directions that we've been taking out on the ground. I agree very much with Senator Lautenberg's observation that over the 20 years of this Act, there's been a tendency I think to administer it kind of by the numbers, and to let things drift and to be passive and avoid pressing the boundaries of the Act, to see if we can make it work and fill in the spaces beyond the literal language of the Act.

Now, at the outset, I concede that we've been doing just that. A number of the issues that I will discuss briefly involve concepts that do not literally appear in the language of the Act, and that I have for the last 3 years been very aggressive about saying to the staff of the Fish and Wildlife Service, if this is a good idea, I want to do it, and I want the lawyers to come back and tell me not why I can't do it, but to do what lawyers seldom do in this world, and that is imagine and construe the Act in a way that we can fulfill what I perceive to be the congressional intent.

I say that because I think the examples I want to go through briefly really cry out for careful examination as possible source material for legislation. Because I'm not contending in any of these examples that the Act is perfectly tailored to what we're doing or that we are not in fact bumping the outer boundaries of the Act.

Now, the crucial issue that we're working with is of course habitat protection. The discussion in the Sweet Home decision by the Supreme Court goes, I think, straight to the heart of what this Act is all about. We can legislate thou shalt not kill. But that's a meaningless injunction if it is not linked to what we all know to be the truth, and that is, that the health and the success of any species is a function of habitat out on the landscape, in which that species can survive and persist as part of a functioning ecosystem.

Now, the core area where we have been attempting to push new concepts is the section 10 habitat conservation plans. The 1988 amendment to the Act explicitly authorized those. We have been pushing them very, very aggressively. I would say we probably have finished 50 or 60. We've probably got another 100, 150 in the mill.

The ones that I would call to your attention for examination are in the Pacific Northwest, the habitat conservation plans that have been worked out of the Pacific forest plan, notably the habitat conservation plans with the Plum Creek Timber Company, Weyerhauser Timber Company, the State of Oregon. Most notably, the Murray Pacific Timber Company in Washington. It is unprecedented in its attention to multispecies and the concept of closure, a deal's a deal, finality. The Murray Pacific Company has come halfway toward us on that one, and we have pushed this concept, I think, toward a model which ought very properly to be reflected in explicit statutory language.

The second set of habitat conservation plan that I think bear examination are in California. Now, the reason the California experience is so important is because we are doing that in the framework

of a very good and very detailed California Endangered Species Act, which has enabled us to move out to the State and work with them in the kind of more standard State-Federal relationship, which really has not been the norm under this Act.

Particularly interesting, I think, are the habitat planning processes going on under California law in Orange and San Diego Counties. There are many, many other examples in California. I would call your attention to that particular one.

I think it's worth looking at the Clark County, Nevada HCP. It will be signed in its final form by the end of this month, and it essentially takes care of all of the development issues in Las Vegas and Clark County. The model that is in that one of mitigation is simple, clear, and I think very much appreciated by all the parties and very much in the interest of both the species and the development futures of Clark County.

Last, I would call to your attention the agreements that we've reached with the timber industry in the southeastern United States. That would include Georgia Pacific, Champion International Paper. These plans I think are notable because they aren't literal regulatory section 10 plans. We actually manage to advance the process in a way that they are kind of pre-regulatory agreements under section 4(d). I think they've worked very well, they cover literally millions of acres of land, and are a model, once again, which I think could be reinforced and improved by statutory language, which extracts the essence of those particular agreements.

Second, a word about small landowners. I've been troubled since the day I came into this office in the way in which in the past there has been no attempt to distinguish between the owner of a 5-acre tract and a timber company with 10 million acres. It seemed to me at the outset that that ought to be intuitively obvious, that when you're working on a large tract of land, there's an enormous amount of flexibility, and you can drive these things to closure with relatively little difficulty.

But when you're talking about a retired couple who bought 5 acres of land 10 years ago to build a retirement house on, that are now at retirement, there's been a listing decision, and they're confronted with the same requirements, a biological opinion, a regulatory analysis, hiring a lawyer and a delay of several years, which in the context of retirement plans, is a lot of time, that simply had to change.

That's what's driven the Department to issue the proposed regulation with the 5-acre exemption, or more accurately, the presumption of exemption, which is, slightly different. But basically saying, if you look at the needs of habitat conservation in a given system, you're almost never going to come to a situation where the pre-existing lots that have been platted and sold to people are going to make any significant difference on the margin in the way that you work out a plan for conservation of species. It's just common sense to get them out of the system. So that's what that proposal is about.

Now, I think in many other cases, that can be done. The other example I would call to your attention is the so-called 4(d) rule in the State of Washington, where we once again in the context of the

Pacific forest plan, managed to issue an 80-acre woodlot owner exemption. We have pretty much kicked out all owners, private owners, of small woodlots.

We've done that through a biological viability analysis which effectively puts the burden on the Federal lands, which is appropriate and which is a concept that should be in play in every single one of these processes that we go through.

Let me just briefly lay out three concepts that are, if you will, sort of the scarlet threads that run through all of these HCPs. The first one is multispecies. I think there's been a fair amount of discussion about that. The single species model doesn't work. We've got to get in on the landscape and look at all of the species and try to do it early enough that we can avoid the kind of train wreck scenario.

Now, once we do a multispecies look, we need to deal with certainty. That is, we need to say, a deal's a deal. We'll get out on the land and do the best cut we can, knowing that if we select the right species, they're really kind of indicators for the whole system and all other species will kind of ride with the conservation plan for that species.

Now, when we do that, I think it's important, common-sensical and necessary that we say to that landowner, that's it. That's all there is. Now, if somebody comes back 2 years later and says, well, we just found something else and we don't think the plan covers it sufficiently, well, then it's up to the Fish and Wildlife Service of the U.S. Government to bear the burden of any further kind of mitigation. But we're not going to take multiple bites from the apple. Certainty.

The third principle that I think runs through much of this is this notion of safe harbor protection. This is a fairly complex concept. We've evolved it out of our experience in the southeastern United States with the red cockaded woodpecker. These woodpeckers are really mobile, and they have a habit of kind of moving in. They tend to move into land which is being well maintained, landowners, including timber companies, like to knock down the hardwood understory to promote the growth of the pines. That was the understory originally kept in check by the fire cycle.

But when you eliminate fire, all of a sudden the hardwoods are growing up. It's not good for timber, it's not good for woodpeckers. Landowners who take care of that problem by clearing out the brush sometimes are greeted with a kind of unhappy new arrival, a family of red cockaded woodpeckers who suddenly show up.

Now, the safe harbor concept is a way consistent with the Act of saying if you do habitat maintenance, we can tell you that you're not going to be prejudiced, and your flexibility and your land use options are not going to be impaired by the spread, if you will, of species, that's attributable to the way you are managing land which formerly was not occupied by the species.

Last, let me see if I can translate some of these concepts into this issue of the role of the States. As I go back and look at the 1974 Act, the striking thing about it in the perspective of 20 years is that it doesn't follow the normal Federal-State legislative architecture. It's really quite striking.

If you look at the Clean Water Act, the Clean Air Act, all of the other environmental legislation, there was a tendency to do the traditional Federal-State model in which against a backdrop of Federal standards, States were empowered and encouraged to administer programs. It's virtually absent from the Endangered Species Act.

Once again, my advice to the lawyers was, don't tell me that just because the Act is silent we can't do it. I have kind of arm wrestled them to the ground and said, in this vacuum, I intend to begin the process of moving these programs toward the States. But I think it would be enormously important to get a legislative framework in place.

Now, just a few specifics in conclusion as to other models. I've already mentioned the California NCCP process. I think it is a rich, varied kind of model that has lots of instructive lessons. Senator Baucus has talked about Montana. We have an interesting example there with the bull trout, that's really Montana and several other States, where we have handled it by issuing a warranted but precluded finding not listing the species, and then inviting the State, in this case I must say, we didn't invite Montana, they showed up, they took the initiative and said, we'll put together a bullhead trout conservation plan, and I interpret the Act to allow us to step back and to defer listing by saying, that program is working, will conserve the species. Again, it would be really nice to have some legislative authority to build upon that experience. We have another interesting example of the White Mountain Apache Tribe in Arizona, a government-to-government relationship which gives them the freedom to undertake conservation plans.

Let me just sort of move out of here with a few specifics I think you should look at. State participation in the listing process—it makes a lot of sense to have some kind of State reference point and participation in listing. Prelisting conservation plans—there should be statutory State participation in recovery plans. States should have a role in HCPs.

We should look at section 6. Section 6, in my judgment, originally contemplated funding so that we could buy habitat pursuant to habitat conservation plans. I know that that's also a budget issue. But we have submitted to the appropriations committees this year a request for matching monies in which we could have authority to match States which are willing to put up land acquisition priorities as part of conservation plans.

But we've not gotten a good reception from the appropriations committees for obvious reasons. Now, what I've said to those committees is that if you want my opinion, this section 6 money is a lot more important than the money we're already spending under the land and water conservation fund for acquisitions that are unrelated. The reason for that is that this priority is about Federal priorities, about making the process work under a direct Federal law.

I would simply urge anyone who's interested in this to get into asking this question, can't we, even in the absence of new money, put a priority sticker on land and water conservation money to say we can match it for those States that are willing to step forward and meet a Federal priority in the process.

There's been some discussion here about additional incentives. I've discussed a number of them. On the way to conclusion, I would simply say, I think these issues that have been discussed regarding State tax credits as an incentive for multispecies State-Federal land conservation programs is a powerful idea with important precedents in State laws. The conservation reserve policy is now being debated in the agricultural committees. The focusing of conservation reserve purchases to intermesh with endangered species is a winner for farmers, for the environment, and for States.

With that, I would be happy to respond in any way, to follow up with any material and cooperate as much as I possibly can.

Senator KEMPTHORNE. Mr. Secretary, thank you very much.

I'd like to ask Assistant Secretary Hall for your comments, and then following that, we will begin a round of questions and we will allocate 5 minutes to each member of this committee.

So with that, Doug, if you'd proceed, please.

STATEMENT OF HON. DOUGLAS K. HALL, ASSISTANT SECRETARY FOR OCEANS AND ATMOSPHERE, DEPARTMENT OF COMMERCE

Mr. HALL. Thank you, Mr. Chairman.

I will only touch briefly on three subjects. Secretary Babbitt was very eloquent in talking about some of our efforts to make the Act work better. The three areas that I'd like to touch briefly on are the role of science, the role that States are playing and can play in the administration of the Act, and our efforts to make the Act work better.

With regard to science, we have made great progress in the understanding of conservation science since the Act was passed 22 years ago. The National Research Council in its recent report on ESA found that the Act is based on sound scientific principles. But we still face significant uncertainties on many of the issues when we develop recovery plans and approaches to recovering these species.

We believe that science should be the basis for deciding whether a species should be listed, and also indicating the biological requirements. We're working very hard to make sure that that occurs. We are using peer review to a greater extent than ever before in our efforts.

Last year the Fish and Wildlife Service and the National Marine Fisheries Service said that independent peer review should be used in both the listing process and in the development of recovery plans. If you look at the experience in the northwest, we have used peer reviews with gas bubble disease, transportation, and the recovery plan has been the subject of a peer review. We see that as a key way of trying to resolve some of the scientific uncertainties.

In the northwest, there have been arguments; on most of the issues, there is agreement. But there are several key issues that have been subject to long debate over many years. We recently worked with the Northwest Power Planning Council to begin the process of setting up an independent scientific panel that will be formed with the help of the National Academy of Sciences to provide a truly independent and objective look at the science and help

us in providing guidance on some of the difficult decisions that are being made in the northwest.

The second is the role of the States. Secretary Babbitt has already addressed this issue. But we agree that the States and the tribes have significant expertise and capabilities. We believe they should have a greater role. We are now in the process of reviewing the coastal Coho stocks for listing under the Endangered Species Act. The States of Washington, Oregon, and California have taken the initiative to develop a comprehensive conservation plan that we think will be the central element to this recovery effort. This is an example of what can be accomplished through an effective Federal, State and tribal partnership.

The last is on the issue of making the ESA work. I think we've made a lot of progress, but we still have a long way to go. As you know, Mr. Chairman, the implementation of this Act is a massive undertaking. It involves many different stakeholders. And we have encountered significant difficulties at various times in the Act's history. We've had thousands of consultations every year.

We're working to make that process more effective and more efficient, and we now have a process in place that I think is much better than we had 2 years ago. We appreciate your leadership in working through the difficult situation that occurred after the Pacific Rivers Council case. In the National Marine Fisheries Service, a lot of dedicated employees worked long hours to resolve that difficult situation.

I'm happy to report today some of the progress that we have made. In the last 6 months, 1,343 salmon consultations were initiated. Of these, 1,063 were completed through an informal process and 92 consultations were completed on a formal basis. We have 88 that remain to be completed. We expect all of these to be completed by the end of September. This is tremendous progress in a very short period of time.

I think that if you look at the difficult situation we faced after that court case, there has been a very positive result out of it. We have worked with the Forest Service to develop broad programmatic guidelines about what should be done.

As you see, out of this total of more than 1,300 consultations, more than 1,000 of them were concluded on an informal basis. And that's made possible because we have worked with the Forest Service to develop broad guidelines, and then we can deal with the individual site specific actions in a much more effective way on an informal basis.

I am concerned and our agency is concerned about some of the recent developments, particularly in the House Appropriations Committee. There has been language that would nullify the programmatic consultations, PACFISH and the Land Resource Management Plan consultations. I think that those programmatic consultations are the key to making this thing work quicker, faster, and in a way that provides more certainty and a better service to the people who own land and who have an economic stake in the situation.

We are also concerned about the funding levels. The amount of money spent on ESA administration is relatively small in the total scheme of things in the Federal budget. I am concerned that there

is a misconception growing that most of the money is spent in some way trying to interfere with economic activities. When in fact, when we have the proper resources to do the job, we can do a better job of assessing various watersheds, and working with the stakeholders to ensure that we complete these consultations as quickly as possible and have the least disruption on economic activities and make sure that our activities not only protect the species, but also that protection is done in a way that allows economic activity to continue.

With that, Mr. Chairman, I will conclude, and I'll be happy to answer any questions.

Senator KEMPTHORNE. Mr. Hall, thank you very much.

Let me begin the questioning. First, I notice, Senator Reid, you have joined us. Do you have any opening comments you'd like to make? Senator Reid is of course the ranking member of this subcommittee. So I welcome you presence.

Senator REID. I do not. Thank you, Mr. Chairman.

Senator KEMPTHORNE. Thank you. Mr. Secretary, let me begin my questions with you, and we'll start the 5-minute clock. I appreciated very much your opening comments and your overview and perspective of the Endangered Species Act. I noted that some of the remedies that you feel we should be directing our attention toward is, to remove this uncertainty that exists right now with regard to the Endangered Species Act and landholders.

You say that we should take no more multiple bites through this process. And I concur with that. You talked about the 5-acre tract, and the dilemma that those owners of the 5-acre tracts may have to go through if in fact they are not given an exemption. I think you could probably delineate probably better than anybody the onerous process that they would have to go through if they were not given that exemption.

So is it fair to say that we can begin this discussion with an agreement that those dilemmas that you have outlined, and therefore have suggested some remedies, affirm that there are problems with the Endangered Species Act and that we do need to roll up our shirt sleeves and reform the Act itself?

Secretary BABBITT. Yes.

Senator KEMPTHORNE. OK, I appreciate that.

Now, you stated, you had a good discussion about the role of the States and the fact that perhaps they're not included in the capacity they should be. I agree with that. I appreciate your attitude that you're going to inform your attorneys that that's not going to be a barrier for us in properly defining what the roles of the States are.

You referenced the tribe, and later this morning we're going to hear from testimony from Judy DeHose, who is a council person from the White Mountain Apache Tribe. Now, under the Native American Self-Determination Act, one of the programs turned over to the tribe was management of the Endangered Species Act on tribal lands. And you referenced that.

In light of this, are you willing to turn over to the States that same authority?

Secretary BABBITT. Senator, that's a very broad question. What I envision as the proper direction is to see if we can't have a much

higher degree of State participation. I think the necessary condition of State participation is that it be, as with other environmental laws, against a framework of Federal requirements. The typical architecture around this town in other environmental laws is that the level of State participation is in some way graded to a demonstration that that will result in meeting Federal standards.

For example, just two States that come to mind, my State of Arizona and the neighboring State of California. We've done enormous delegation to California because they in fact have an endangered species act. Arizona has made clear that it does not believe in the Endangered Species Act, that they will, at least in current times, have no endangered species legislation of any kind. I must tell you that a delegation is kind of tough against a background of no endangered species legislation of any kind.

So I think there isn't a direct, simple answer.

Senator KEMPTHORNE. So we can agree, Mr. Secretary, there is, by all rights the States must play a greater role and be given greater authority with the Endangered Species Act?

Secretary BABBITT. As long as it's done in the context of a set of Federal standards which inform, guide and set boundaries for State participation, sure.

Senator KEMPTHORNE. OK. Now, also, in your discussion about the 4(d) rule, and you talked about the owners of the small woodlots, and again, I appreciate what you said about that, you said too that, and I believe, that we needed to put more emphasis on the public lands and recognize the private lands. So would you be supportive if in the rewrite of the Endangered Species Act, we affirm private property rights in the Act itself?

Secretary BABBITT. Senator, I believe that the fifth amendment of the Constitution of the United States affirms private property rights. And we have never varied from the commands of the fifth amendment and the U.S. Supreme Court.

Senator KEMPTHORNE. So you would not be uncomfortable with it being included?

Secretary BABBITT. If your proposal is that we accede to statutory language which says at all times this program will be administered in accordance with the constitutionally protected rights of private property owners, the answer is yes.

Senator KEMPTHORNE. Thank you very much.

Secretary BABBITT. Let me, if I may, just say——

Senator KEMPTHORNE. That's all I needed.

[Laughter.]

Senator KEMPTHORNE. My time is up.

Senator CHAFEE. You can answer on my time.

Senator KEMPTHORNE. No, if you'd like to complete it, I'd certainly give you that courtesy.

Secretary BABBITT. Listen, if we can all agree that that's what this is about, that's terrific. The reason I want to add is because I think there are issues that go beyond the core constitutional issues, that we need to identify and take care of them. That is what I would call, think of a core of constitutional protection. I don't think that's the end of the question. Because I think there's a much, much broader issue, of what I would call fairness.

Let me give you an example. The fifth amendment doesn't say that we have to exempt owners of 5 acres or less. All the fifth amendment says is that you can't effect, you can't regulate in a way that effects a taking. What we are proposing goes way beyond the fifth amendment protection, constitutional protection. What we are looking at is just a kind of plain, basic, simple affirmation of our obligation to be reasonable and thoughtful about the way we treat people.

Now, that of course takes me into the takings legislation, and the reason that I think that is so terribly misguided. We have constitutional protection of private property rights. The takings thing is way off mark. It's not about interfering with the role of the Constitution and the courts.

What we should be doing instead is asking in the context of this Act, how are we making this fair, and how are we mandating clearly by the language of the Act that this thing will be administered in a way that will command the cooperation and consent of the people who brought us here.

Senator KEMPTHORNE. I appreciate and I agree that we should go beyond the protection of the fifth amendment.

With that, Senator Chafee.

Senator CHAFEE. Thank you, Mr. Chairman.

Mr. Secretary, I'm interested if you could, and obviously we're all working under the time limitations here, of how you apply your habitat conservation plan to a large timber company where you're working with several thousand acres. What do you do? Do you give them a safe harbor? I know you're talking multispecies here. Just briefly, how does it work? What's in it for the timber company?

Secretary BABBITT. Well, Senator, a number of models. The basic model is simply, the timber company says, as we cut under a sustainable forestry plan, when we encounter these little pockets of old growth timber that are currently being inhabited by nesting pairs of owls, we will work around that circle. And that's it.

Now, the owls on a large tract will obviously be moving about. But it is a dynamic process, and the timber companies are basically saying, we can live with owls. We don't think they're going to get out of hand in the near future, and we will, we do our cutting on kind of a rotating basis. So it's just that. We'll look for the owls, cut around them.

Now, on smaller tracts, it doesn't work quite that easily. Because you could in fact get owls colonizing beyond where they are.

Senator CHAFEE. That's where your safe harbor comes into play?

Secretary BABBITT. That's absolutely right.

Senator CHAFEE. You say to the timber company or the owner of the land, you've got 1,000 acres here, there seems to be proliferation of owls in the 100 acres, you set aside that 100 acres and you can go ahead and lumber the balance. If there's a spotted owl out there or whatever it is, red cockaded woodpecker, that's OK for you to go ahead and timber that area. Is that the way it works?

Secretary BABBITT. Yes. What we say with respect to the other 900 is, if you want to clear cut it today, fine. There's no prohibition. But assuming that what you want to do is manage it sustainably, we would be happy to issue you a safe harbor letter which says,

if any woodpeckers show up on that land, give us 30 days to move them somewhere else.

Senator CHAFEE. Have you entered quite a few of those?

Secretary BABBITT. Senator, this is fairly new. The most interesting one, and I think it bears study, is with the Pinehurst Country Club Development Group in North Carolina. It is quite explicit and the people who have signed off of that I think can explain it to you very well.

They basically said, we're inviting woodpeckers to invade our land, including land where we think we're probably going to build some more golf courses and residential developments, and we're satisfied with the language of this agreement that says when they show up, they are temporary residents, subject to eviction at our call for any kind of land use development, provided only that we have 30 days notice.

Senator CHAFEE. OK. I followed your suggestions regarding the States, and I think what you say makes a lot of sense. Obviously, if Arizona isn't at all interested in the Endangered Species Act, and indeed, seems to be resisting it, it's not the area that you necessarily would want them to assume the program. Whereas, other States like California or wherever it might be that has these programs, the State program, you could turn over quite a bit to them.

Secretary Hall, when Senator Kempthorne and I were in Lewiston, and dealing with the Snake River salmon there, they didn't think everything was so hunky-dory as you've outlined it in your statement. They had harsh words for, well, maybe the word harsh is too strong. They were not enthusiastic about the role that the National Marine Fisheries was playing.

What do you say about the situation out there? They felt that you knew a lot, and the National Marine scientists knew a lot about the seas and the migratory aspects of the salmon, but not when they got up into the rivers.

Mr. HALL. Mr. Chairman, if you look at all the Endangered Species Act issues that the Department of Interior and the Department of Commerce are working on, the one involving the Columbia River and Snake River salmon is probably the most difficult because it covers more territory and affects more people, more different States, more different jurisdictions. The National Marine Fisheries Service has made a number of difficult decisions, and they have affected a lot of people and are very controversial. The system has been fundamentally altered. We didn't have the eight dams between the upper Snake and the ocean 100 years ago, so when we start trying to restore these species in that area, we're dealing with a system that is not what it was, not designed for salmon. So a lot of the decisions we make are very controversial and they create a lot of concern.

Senator CHAFEE. Well, I agree. We had hearings out there, as I mentioned before, presided over by Senator Kempthorne. And of all the issues, I thought the salmon one was the most difficult. One of the complaints was, and indeed this wasn't just fishermen who were complaining, it was the environmentalists likewise, about the role of the NMFS. One of the feelings was they couldn't get any answers from you folks fast enough. But that's a long, difficult subject. I notice my time's up.

Thank you, Mr. Chairman.

Senator KEMPTHORNE. Thank you, Senator Chafee.

Senator Baucus.

Senator BAUCUS. Thank you, Mr. Chairman.

Secretary Babbitt, there's been a lot of complaints about the Endangered Species Act by a lot of people. In your judgment, what does it all boil down to? Why are so many people, particularly in the west, so upset with the Act? I think most people in the west want to do what's right. They don't want to run rough-shod over the species in our country. They want to do the right thing.

But yet, there's a perception, there's a feeling, there's a belief, that something's wrong here. They're quite outraged. What do you think it all boils down to?

Secretary BABBITT. Senator, I think there are two things. One is that the opponents of the public land tradition have gone out of their way to stigmatize this Act and to circulate falsehoods and outrageous allegations as part of a broader crusade against the National Park System, the National Forests and the public lands. The second reason, I think, is legitimate and needs some work. And that is, that the Act as drafted and administered, I think until fairly recently, has been a purely Federal operation.

And that doesn't work. Because these things affect local communities, and they affect peoples' perceptions of how they live on the land. When administrators from Washington are sort of sending notices and determinations and rules through the mail, it's bound to cause a lot of friction. I think that is a very legitimate grievance. It's a powerful argument for coming back to State participation.

Senator BAUCUS. I think that's pretty accurate. Now, let's look at the second part, and see how we fix the Act. As you know, generally, and you stated it in your comments, our environmental statutes by and large allow States to administer a lot of our environmental statutes subject to a kind of a Federal approval of an overall plan.

Let's take the Clean Air Act, for example. States develop their State implementation plans, and the States run the Clean Air Act, essentially, under those State implementation plans, subject to approval of the State implementation plan by the EPA. Under the Clean Water Act, there are programs that basically the States run the water programs, too. As you well know, again, subject to the Federal approval.

As you well know, last Congress we tried to reauthorize Superfund. The Administration, various groups, Keystone Institute, came up with I think a very good Superfund reform agreed to by big business, by small business, by environmentalists, by most insurance industry. It was a terrific idea, which unfortunately Congress didn't pass last year, but which delegated most of the operation of Superfund to States. States would select remedies, States would basically run the program.

So I'm wondering, how far do we go here in the Endangered Species Act? How far do we take those models, the devils and the details, and we all talk a lot about more State participation. But I wonder if you could just a little more precisely indicate what you think properly that greater State participation should be, and should it, how far should States have primacy? Should the States

basically develop the habitat conservation plan? Or should they just provide information on it to Fish and Wildlife Service?

I'm just curious what you're thinking as to how far we should go in delegating all this to the States.

Secretary BABBITT. Senator, I agree that this is where the detail is really important. But I think that you can sketch out a rough outline. The listing process I think ought to be in the final analysis a Federal responsibility. These species, it's a purely scientific effort. It ought to involve the best science, wherever you find it. Many of the species, not all of them, but many of them are interstate. And I would strongly suggest the listing process should have participation but should be primarily Federal.

But when we get to the remedy, the habitat conservation planning, conservation plans, the California model suggests that you can have a very large degree of delegation to the States. And that as long as the framework is there, that's absolutely appropriate.

Senator BAUCUS. What's wrong with a lot of the States that just basically developed a plan subject to some broad Federal oversight? It's somewhat similar to Clean Air Act, somewhat similar to the Clean Water Act.

Secretary BABBITT. I think those are the right models to begin looking to as reference points. I would for example say that on national parks, forests, Federal lands, you've got an administrative, you might need an administrative presumption in favor of the Federal land, management of Federal lands. You might draw those kinds of distinctions.

Senator BAUCUS. I appreciate your mentioning the Montana bull trout recovery plan. We're very proud, frankly, in Montana, of the effort we've undertaken on our own to try to recover the bull trout. I appreciate your remarks and I want you to know that we're still working very hard to try to make that work, and I thank you.

Senator KEMPTHORNE. Senator Boxer.

Senator BOXER. Mr. Secretary, in answer to our subcommittee Chair's question, you said you think that the Act should be reformed, is that correct?

Secretary BABBITT. Yes.

Senator BOXER. You don't think we should repeal the Endangered Species Act, do you?

Secretary BABBITT. No.

Senator BOXER. You don't think we should weaken it, do you?

Secretary BABBITT. No.

Senator BOXER. OK. Do you think that protecting endangered species should be a national concern?

Secretary BABBITT. Yes.

Senator BOXER. OK. So when you talk about the State role, you're really saying that in implementation, you're very willing to look at ways to give the States more of a lead role. I want to say that the California model that you've talked about several times here, for the benefit of my colleagues, has really worked magnificently. We have a model that works. I don't know if it's similar to the Montana model.

But we have the Natural Communities Conservation Planning Program. In it we have conservationists and land owners and local governments and developers. They all sit around the table. You

know, frankly, if it's the State that calls these people together, that's fine with this Senator. But it's worked in Southern California in having the Federal people all grouped together. I'm open to either model.

But I think the most important thing is to get people of goodwill around the table and have the backup of a national law that sets some national standards and goals for what we're doing. Because if we don't do that, it gets tougher and tougher. You know, a lot of people say, why are we having more problems with the Endangered Species Act.

We've discussed why, and I think Secretary Babbitt's been very forthcoming on that, saying it's sort of the long arm of the Federal Government coming by mail and telling you what to do on your land. We have to stop that. That's why this kind of planning effort stops it, because the arm doesn't come in from Washington. But the decision is made by everyone sitting around the table.

So I think it's not all that complicated to fix this problem, if there's an underlying agreement that it is a national concern to save endangered species.

I want to ask if the subcommittee chairman will put into the record this Defenders of Wildlife report that I held up before.

Senator KEMPTHORNE. Without objection.

Senator BOXER. Thank you very much. It details really species by species the successes, the failures and some recommendations.

I want to ask a specific question about California, Mr. Secretary. You know, we all come from different States and different philosophies, or so. Many of my constituents have been concerned about the lack of progress the Fish and Wildlife Service has made in listing species over the years. We're concerned. We don't want to lose—we've already lost 90 percent of our wetlands in California. Nationally, we've lost 50 percent of our wetlands.

We're not happy about that. We understand what wetlands do. We understand their importance, because we almost don't have any. So we're looking at the fact that there were many, many species. There have been two lawsuits filed. One is regarding plants, endangered plants, which as we've documented with the leadership of Senator Reid, the ranking member on the subcommittee, are potentially life saving plants. If you look at taxol and some of the other remedies that we have to look forward to, they're all going to come from these plants.

Now, by the time you get them on the endangered list, there's only 100 plants left or so, it's my understanding. So we're very concerned in California, and as I understand it, a settlement agreement was reached with Fish and Wildlife to propose for listing more than 150 California species for which the Service had the data to justify the listing.

How has the current moratorium on final listing affected your ability to comply with that settlement agreement?

Secretary BABBITT. Senator, if I might, just a word about California. I don't want to leave this committee with the impression that we have achieved nirvana in California, because we haven't. There are some very complex issues in the Federal-State relationship. We are learning each day, as we move along in some very uncharted territory.

The important thing in the southern California experience is this. We have agreed, Federal, State, local, on an important goal, and that is, Orange and San Diego Counties do not want to become the Los Angeles Basin. In the context of that sharply differing goal about development futures, we're working. There are, and I think worthy of contrast, other examples of purely Federal efforts which are taking place outside this partnership.

We've had a lot more trouble with them, frankly. The reason that they've been problematic is because we have not had this close State and local interconnection which tends to drive people toward a clear understanding of what it is we're after. I just would like to leave those points.

Now, Senator Boxer, in direct response to your question, yes, things are moving more slowly. There is a listing moratorium. It has made this process a much more complex.

Senator BOXER. Even in light of the settlement? I mean, there was nothing in the moratorium that gave you the ability to move forward? There was a court case or a settlement?

Secretary BABBITT. Well, between the dislocating effects of the moratorium, the cutbacks in funding, the workload that is being driven by litigation, all I can say is, we're doing the best we can. We've got Federal judges ordering us around in every corner of this land.

I must tell you that the litigants in many of these cases are not doing any favor to our efforts by constantly rushing to the court to attempt to get Federal judges. We have a situation where the Director of the Fish and Wildlife Service is being required to write a personal letter each week to a Federal judge. I must tell you, I think that's an outrage. It's yet another reason for getting some reform in this Act.

Senator BOXER. Do you think people should have a right to go to court if the Act isn't being implemented? I sure do.

Secretary BABBITT. I respect their right to go to court. I'm saying that they are frustrating, in many instances, our ability to administer this Act.

Senator BOXER. Let me just say, I know my time's up, I would only say that when you're getting down to plants, when there's 100 left, you ain't got a lot of time to wait until you figure it out. I support that.

Senator KEMPTHORNE. Thank you very much.

Senator LAUTENBERG. When it's too late, you turn to Campbell's, and you get it from the shelf.

Mr. Secretary, part of the improvements that you'd like to see, you talked before and today about the exemption for the 5-acre piece or smaller. What happens if a particular 5-acre place is the center place for the species to propagate or habitat? They don't know the same boundaries that we use. And what happens there? Don't we run the risk of some significant danger by simply saying that 5 acres or less, you're home free?

Secretary BABBITT. Senator, we've spent a lot of time discussing that. It turns out there are in fact some isolated situations where that could happen. The most obvious ones are these western vernal pools and springs, where you have a pond of water, either seasonally or permanently, entirely isolated from the surrounding system,

essentially under the Pleistocene, where you've had 10,000 years of divergent evolution and some very important species issues.

I think we need to wrestle with that. I think the first line would be to say, well, simply acquire it. A second line would be to say, we will use mitigation fees in the balance of the plan to fund the purchase of it through the implementation of the plan.

So if your question is, aren't there exceptional circumstances where we need to think creatively about how this works, the answer is yes.

Senator LAUTENBERG. Yes, because you've been in New Jersey, and you know that between Senator Chafee's State and my State, we could probably fit in a county of Senator Kempthorne's State or Senator Reid's State. When you get to have a 5-acre piece in New Jersey, if it's in the path that the migratory birds take, you're talking about perhaps a very significant influence on what takes place there.

So I think that that 5-acre rule has to be very carefully monitored. Because it could be the critical, or a couple of them, neighbor to neighbor, could be an important location for the preservation or the protection of the species.

Have you looked at the House Appropriations Committee bill on Interior?

Secretary BABBITT. Senator, I have.

Senator LAUTENBERG. You're not wearing black.

Secretary BABBITT. Well, what I genuinely lament in the House bill is the failure to distinguish between withholding listing money, which, I understand that, there's a moratorium and it's part of law, and I understand the logic of withholding listing money.

They have gone beyond that and begun striking line items that relate to prevention, our ability to get out on the landscape and work these issues, kind of the Montana bull trout kind of deal, where what we're trying to do is move it away from the listing process. We're losing that money, and I think it's because of a misunderstanding and failure to distinguish between the two approaches.

Senator LAUTENBERG. And what can be the result of that?

Secretary BABBITT. Well, the result can be that when the moratorium eventually comes off, we have a larger crisis than we would have had. We've effectively lost the time to try to avoid the train wreck.

Senator LAUTENBERG. Is the, are the resources essential for doing the job that the Endangered Species Act is intended to do?

Secretary BABBITT. Yes, in my judgment, they are. And again, these section 6 issues, anticipating a piece of legislation with more State involvement, I would urge the appropriators to go back to section 6 and anticipate the power of these matching funds to enable State plans to work, and to deal with the kinds of extraordinary situations we've discussed.

Senator LAUTENBERG. One of the things that's so difficult for those of us who believe that all species of nature are there for a reason, and that they are inextricably intertwined, one species to another, and I find it distressing as we look at budgets for the year, appropriations bills, and I am on the Appropriations Committee, so is Senator Reid, that what we're doing is looking at the

short term consequences, principally political, of laws that we're writing, funds that we're providing. In the process, beginning the downslope for seriously continuing the preservation of the species.

Now, I am, and I'm no more a nature lover than Senator Kempthorne, certainly we've discussed the beauty of Idaho and the precious resources that they have there. But the fact of the matter is that there are so many who are worried about what happens 10, 20, 50 years from now. I carry pictures of my grandchildren around. I know that I'd like them to be able to fish and walk in the woods and see the birds and everything else.

It seems that it's an impossible message to get through now, that, hey, listen, carelessness today is disaster for tomorrow. You're handling your job very well, Mr. Secretary, in trying to bring together the parties. But I would submit that when you discuss reform, I think that very notion becomes part of the crescendo that says, let's get rid of this burdensome Act, and let's let the farmers and the loggers and everybody else get on with making their living. The expense is not on the cash register, but it's there, certainly.

Thanks very much.

Senator KEMPTHORNE. Senator Lautenberg, thank you for your comments. I appreciate what you referenced, and the discussions we have had. And like you, for you want to make sure that your grandchildren have those forests to walk through and those streams to fish, I know that many Idahoans who derive a living from the natural resources, may at times harvest the trees, etc., they, too, want to make sure that there are woods for their grandchildren to walk through and fish as well.

Senator LAUTENBERG. Mr. Chairman, we heard Secretary Hall, and you and I have discussed the salmon problem. They're gone. In a very few years, up in Alaska, with the pollution and so forth, supplies are considerably depleted. So there are competing interests.

Senator KEMPTHORNE. There are.

Senator LAUTENBERG. Cutting down the tree may cut the fish life.

Senator KEMPTHORNE. But interestingly enough, in the hearing in Lewiston, and I don't intend to engage in this, but it was pointed out that it is not the habitat. The habitat is pristine. I think Mr. Hall would affirm that. And the inland waterways. But we have a series of dams that have been put in there, for other reasons, years ago.

So with that, Senator Reid.

Senator REID. Mr. Secretary, I've been during this time paying close attention to everything you've said. But I've also been looking ahead and reading some of the testimony that's going to come later. I'd like to see how you feel about a statement, two paragraphs, by Dr. Stuart Pimm. He says extinctions have always been part of Earth's history.

This does not mean that the rate of modern extinction is normal. In a major review to be published in the Journal of Science on the 21st day of July, 1995, my colleagues and I document just how abnormal the current situation is. What we now experience are rates a thousand times normal. The future will be worse. Unless we act,

humanity will drive a large fraction of the planet's species to extinction within the next century.

Some popular accounts of extinctions cast doubt on these conclusions. They remind me of my biannual nightmare of grading bad term papers. Easily verified information is written incorrectly or otherwise misinterpreted or misquoted. In my written testimony, I have included reviews showing how badly bungled some of these accounts are.

I will not speculate on how a minority of journalists, you will note here, he says journalists, not scientists, feel so confident in their abilities to reject the consensus of so many scientists. I pray that they will not feel qualified to extend their mission to my father-in-law's position of brain surgery.

[Laughter.]

Senator REID. Now, Mr. Secretary, this from a scientist, professor of ecology at the University of Tennessee, tends to paint a very dark picture of various species in the world and in this country. Would you agree or disagree with Dr. Pimm?

Secretary BABBITT. Senator, you've engaged me on the ground of my professional scientific training. I will try to resist getting into this in detail, except to say that the people who are saying there is not an extinction crisis are pseudo-scientists and phonies. There isn't any question at all about that. And the causes are well known.

The protagonists who never made it through elementary paleontology or ecology are saying, well, look at the end of the Pleistocene. There were extinctions then, there was 1,000 feet of ice covering New York City and Chicago, these changes take place all the time. Well, of course, changes do take place in geologic time. The important thing is that they take place on time scales that are so long that evolutionary adaptation works around them. Your State of Nevada 10,000 years ago looked like Lake Superior.

Senator REID. But doesn't that also, Mr. Secretary, answer one criticism that the Endangered Species Act has had, that it takes a long time for these species to recover? It's part of nature, isn't it?

Secretary BABBITT. That's exactly correct.

Senator REID. Now, Mr. Secretary, you mentioned briefly the experience in Nevada with the desert tortoise. That's been a positive experience under the Act, has it not been?

Secretary BABBITT. Senator, I think it has, yes.

Senator REID. I mean, I know that some people have objected to what had to be done. But is there any doubt in the mind of your or your scientists that the desert tortoise, if the present plan goes forward, will survive?

Secretary BABBITT. It's not entirely free of doubt. But there are some odd kinds of issues, which I won't go into. But my personal opinion, yes. I think the chances are very good.

Senator REID. Mr. Secretary, we've had a number of hearings on the issue of takings. The issue of takings, of course, comes up in the context of the Endangered Species Act on occasion, is that not true?

Secretary BABBITT. Yes.

Senator REID. You've heard the cry to change the law, so that takings become more difficult. The very hearing we had yesterday,

I referred to the Constitution, where the Constitution says, nor shall private property be taken for public use without just compensation. Do you know how we with a law can improve upon the language of the Constitution of the United States?

Secretary BABBITT. No, sir.

Senator REID. Mr. Secretary, there's been a lot of talk about the negative impact on the economy of the Endangered Species Act. Would you elaborate on that?

Secretary BABBITT. Well, my sense is that in each case that good administration of this Act over any reasonable time period increases the prospects for productive economic activity, that there is no conflict between the two, and that in fact the sustainable and productive uses of ecosystems in the long run will create a lot of jobs.

That's what it's about in the northwest. It's about a timber industry which will provide jobs for our kids. The salmon issue is about the same thing. It's about fisheries jobs for our kids. I have yet to see a case in which these issues, these laws, cannot be administered in a way that creates in the long run in the middle term and usually in the short run, and the reasons a species comes to a place, because of the values of biodiversity and landscapes and wide open spaces, and the future of places like Phoenix and Las Vegas and Boise, it seems to me is directly linked to our success in finding this kind of balance. So I don't see the conflict.

Can I go back to the Pleistocene?

[Laughter.]

Senator REID. I'll pass on that.

Senator KEMPTHORNE. Senator Reid, I have just a couple questions that I'd like to ask Mr. Hall. Do you have a couple other questions that you'd like to——

Senator REID. I had one question I wanted to ask the Secretary. There was an announcement made, I believe yesterday, because I heard about it today on public radio, about the President issuing an order that the Endangered Species Act and any wetlands legislation would not apply to a landowner who had owned less than 5 acres. Is that true?

Secretary BABBITT. Senator, that is correct.

Senator REID. When, Mr. Secretary, will that go into effect, or do you know?

Secretary BABBITT. There is a regulatory, I believe either an advanced notice of proposed rulemaking or a draft regulation out on the street right now.

Senator REID. That certainly should do away with a lot of the stories that people keep talking about of problems with small property owners, is that true?

Secretary BABBITT. Well, that's certainly our intention.

Senator REID. Thank you, Mr. Chairman.

Senator KEMPTHORNE. Senator Reid, thank you.

Mr. Hall, I know you would have been disappointed had I not asked you a few questions. Let me ask you this, we'll move very quickly. Do the commercial fisheries which you say are managed through regional councils, have to obey the Endangered Species Act when one of the stocks are on the list of endangered or threatened?

Mr. HALL. Yes, sir, they do.

Senator KEMPTHORNE. Does the jurisdiction of the regional council extend very far to sea?

Mr. HALL. The regional councils manage the fisheries outside State boundaries to the 200 mile limit.

Senator KEMPTHORNE. Does the jurisdiction of the regional councils extend up the rivers into fresh water?

Mr. HALL. No.

Senator KEMPTHORNE. When a listed stock is mixed in——

Mr. HALL. Mr. Chairman, the only clarification is, whenever you have take that is going to occur inside the river that the fishery management councils take that into account.

Senator KEMPTHORNE. OK. When a listed stock is mixed in with a non-listed stock of a commercial fishery, does the regional council allow the take of the listed stock?

Mr. HALL. There are cases where a small, incidental take is unavoidable. So there is a very small take allowed on the three listed stocks in the Pacific Northwest.

Senator KEMPTHORNE. Is that a violation of the Endangered Species Act?

Mr. HALL. No, Mr. Chairman. The Endangered Species Act allows for incidental take of listed species. There are cases where it's unavoidable, and in this particular case, it's a very small number.

Senator KEMPTHORNE. All right. Then many thousands of wild salmon have been tagged with the pit transmitter tags. Are these tags ever searched for among the fishes captured in commercial fisheries in U.S. waters?

Mr. HALL. Yes.

Senator KEMPTHORNE. Can you tell me the process?

Mr. HALL. I would defer to some of our scientists or technical experts for the exact details. But we review the landing data, and we have a better understanding of the mixture of the stocks in that particular fishery than any place else. So we have an understanding of how many stock, when you have 30,000 fish that are caught in an ocean fishery, there may only be 10 that are Snake River stocks.

But we have a pretty good understanding at this point of which fisheries, what the mixture is of the various stocks and various fisheries, both in Alaska and British Columbia and off the coast of the Pacific Northwest.

Senator KEMPTHORNE. So off the coast, is that sort of information sought and obtained?

Mr. HALL. Yes.

Senator KEMPTHORNE. Of any commercial fishing?

Mr. HALL. Yes.

Senator KEMPTHORNE. For the United States, what have you. OK. Then you describe an independent scientific peer review process in the National Oceanographic and Atmospheric Administration that assures that high standards are met. Last month Will Stelle, of the NMFS, testified before this subcommittee that he did not have such a process in place for his recent decisions on spill policy. Is that a correct statement?

Mr. HALL. Well, I'm not sure exactly what Mr. Stelle said. There were several scientific panels in place that contributed to that process in developing the spill policy. The gas bubble panel was a world

class panel of scientists who came together and provided scientific information that led to the monitoring program and the way they formulated that process. So I'm not clear exactly what he said.

Senator KEMPTHORNE. All right. Then, finally, Mr. Hall, you described the seven member scientific recovery team which NMFS appointed to develop the Snake River salmon recovery plan. We had members from that team who testified last month as well. They stated they were not pleased with how their recommendations were treated by NMFS. Can you comment on that?

Mr. HALL. There's a letter from Don Bevin, who's the chairman of the team, which states that most of the recommendations they felt very comfortable with. There were a very small number of disagreements, and we're continuing to work through with those disagreements.

The establishment of the scientific panel, with the help of the National Academy of Sciences, I think will be instrumental in providing an objective basis. But as you know from your experience, these scientific disagreements have gone back decades. We're working very hard to resolve them and move forward. But I don't want to minimize the disagreements that occur.

Senator KEMPTHORNE. Thank you very much.

Mr. HALL. Mr. Chairman, I would like to add, just in case, I know how difficult the issue of land resource management planning consultations has been in the State of Idaho. Just in your State alone, we have now completed 768 informal consultations, and 170 formal consultations. That leaves only 58 that have not been completed, and again, they'll be completed in short order.

I think that if you look at the situation we have today and what we faced 6 months ago, and I think a lot of it's due to your leadership and putting a lot of attention on this issue, we've made a lot of progress there. We get a lot of attention when things are not going well, but I think that the Fisheries Service deserves a lot of credit for getting this situation under control.

Senator KEMPTHORNE. I appreciate that.

We'll take a brief recess as we get to the next panel.

[Recess.]

Senator KEMPTHORNE. If everyone will take their seats, we'll get started with our next panel.

Here with us today is Dr. Michael Clegg, acting dean, College of Natural and Agricultural Sciences, University of California at Riverside; Dr. Jane Lubchenco, Department of Zoology, Oregon State University; and Dr. Stuart Pimm, professor of Ecology, University of Tennessee.

We do have formal copies of all your prepared statements which will be made part of the record. So in order to be able to accommodate all panels, I'd like to ask if you could just stay within the 5-minute timeframe. We'll use the light system, so that with one minute remaining, you'll see the yellow light. At that point, if you could begin to conclude your remarks.

Again, we're very appreciative that you have all come from so far to be here. So we're mindful of that, we look forward to hearing from you.

STATEMENT OF MICHAEL T. CLEGG, ACTING DEAN, COLLEGE OF NATURAL AND AGRICULTURAL SCIENCES, UNIVERSITY OF CALIFORNIA AT RIVERSIDE

Dr. CLEGG. Thank you, Senator Kempthorne. It's a great privilege to have the opportunity to testify before you.

Senator KEMPTHORNE. Thank you.

Dr. CLEGG. My name is Michael Clegg, and I'm a professor of genetics at the University of California at Riverside. I chaired the National Research Council's Committee on Scientific Issues in the Endangered Species Act, whose report entitled "Science and the Endangered Species Act" was released on May 24, 1995. I'd like to respectfully request that this be made a part of the record.

Senator KEMPTHORNE. Without objection.

[Material to be supplied follows:]

Dr. CLEGG. The committee that my colleagues and I represent includes a wide spectrum of expertise in areas such as ecology, population biology, systematics, paleontology, wildlife management, law decision analysis and economics. We come from universities and private industry. Some of us have government experience. Our report is a consensus statement that reflects the range of our perspectives, and we all agree with its conclusions and recommendations.

Our study was initiated by the National Research Council approximately 2½ years ago in response to a bipartisan request from three congressional leaders: former House Speaker Thomas Foley, Senator Mark Hatfield, and Representative Gerry Studds. This was a most welcome request, because sound public policy depends on sound science.

We were asked to consider, the science that subsumes six fundamental issues in the Endangered Species Act. Those were definition of species as used in ESA, the role of habitat in conservation biology, recovery planning and its implementation, risk assessment, conflict between endangered species, and the timing of key decisions under the Act.

We were asked to provide scientific advice. Let me say what we were not asked to do. We were not asked to assess the regulatory framework, and we were not asked to comment on the societal and political tradeoffs that are associated with the Endangered Species Act, and we have not commented on those issues.

Science has expanded greatly in the 20 years or more since the original passage of the ESA. This is particularly true in areas like computational science, conservation biology, genetics, ecology, and systematics. We tried to assess this expansion of scientific knowledge with respect to the ESA, and we came to the general conclusion that the law is grounded in sound science. Conserving species means conserving habitats. And the Act's emphasis on habitat conservation, is in our judgment, appropriate.

But we believe that there are a number of areas where specific improvements can be made to the ESA. For instance, in the area of habitat, the designation of critical habitat as envisaged under the Act is slow and arduous and sometimes compromises the goals of the Act. We recommend the designation of a new category called survival habitat as a stop-gap short-term measure to prevent the further decline of endangered species once they have been listed.

Survival habitat would be superseded once critical habitat had been designated.

We were asked to consider the definition of species as it is used under the Act. I'm sure you're all aware that the term species under the Act includes subspecies of plants and animals and distinct population segments of vertebrates. We advance a coherent, unified concept called the evolutionary unit concept which should provide scientific objectivity to the designation of biological entities.

This concept is based on identifying the distinctive characteristics of a biological unit. Those distinctive characteristics should confer a potential for an independent evolutionary future. If entities qualify as evolutionary units, then they should be eligible for protection under the Act.

We also recommend a scientific framework for decision analysis, which should aid in the allocation of scarce resources in listing and other ESA actions, and our report attempts to look beyond the ESA. We endorse regionally negotiated approaches involving governmental and non-governmental entities, characteristic of habitat conservation plans.

We believe that the science of ecosystem management provides a promising approach to a broader framework of multispecies conservation. We endorse mixed use areas, the rehabilitation of ecosystems and the use of market-based economic incentives to achieve ESA goals.

Thank you. I'll be happy to try and answer any questions.

Senator KEMPTHORNE. All right. Dr. Clegg, thank you very much for your comments.

Dr. Lubchenco.

STATEMENT OF JANE LUBCHENCO, DEPARTMENT OF ZOOLOGY, OREGON STATE UNIVERSITY, CORVALLIS, OR

Dr. LUBCHENCO. Thank you very much. It's a pleasure to be here. My name is Jane Lubchenco, I'm distinguished professor of Zoology at Oregon State University. I am the president-elect of the American Association for the Advancement of Science, which publishes the journal, *Science,* among other things, and a past president of the Ecological Society of America. My particular expertise is marine ecology.

In my remarks this morning, I wish to emphasize three points. First, in my opinion, reauthorization of the ESA is one of the most important responsibilities that this Congress has. Second, vigorous protection of the Nation's biological resources will benefit all Americans. And third, recent scientific advances provide good guidance for achieving the goals of the ESA more effectively and efficiently.

The Endangered Species Act of 1973 was a remarkable piece of legislation. Now the time has come to reconsider its goals and the mechanisms for achieving them. This task is one of the most important challenges facing the 104th Congress. The responsibility of safeguarding the Nation's biological resources is profound. The challenge is also fundamentally different from many of the other important responsibilities of Congress. Most policies formulated at one point in time can be altered at a later date.

However, because the loss of a species is irreversible many of the consequences of a poorly conceived ESA cannot be undone, cannot

be reversed. "Jurassic Park" notwithstanding, species cannot be brought back to life. Nor can many of their important functions be replaced. Losing species means losing genes, losing potentially important chemicals for medicines and losing life-supporting ecological services. The permanency of extinction and the folly of squandering the natural biological capital on which we all depend should prompt a profound sense of responsibility and a suitably cautious approach. Few bad decisions will have such irreversible consequences.

The task of reauthorization should take full advantage of the substantial recent advances in science. The scientific information relevant to the ESA has been recently reviewed and summarized by two independent expert panels. Professor Clegg has just summarized the excellent report issued by the National Research Council. A separate, independent but parallel scientific assessment has just been released by the Ecological Society of America. I request that this report be entered into the record.[1]

Senator KEMPTHORNE. Without objection.

[The report will print at the end of the hearing record with Ms. Lubchenco's prepared statement.]

Dr. LUBCHENCO. This report is remarkably similar in its conclusions to the Academy report, and focuses specifically on ways in which scientific information can help achieve the goals of the ESA more efficiently and effectively. Together, these reports provide unequivocal testimony to the strong consensus within the scientific community, strong consensus about the importance of preserving the Nation's biological resources, strong consensus about the critical importance of these resources to people, and strong consensus about the dual need to focus on species and on habitats.

People depend upon biological resources in myriad but generally unappreciated ways. Even the much maligned creepy crawly critters, or even the simply plain organisms, may be bountiful sources of useful products like medicines.

For example, the interaction between caterpillars of the day flying moth, *Urania*, and the *Omphalea* plants on which they feed results in the production by the plants of a chemical, dihydroxymethyldihydroxypyrrolidine, or DMDP. This compound has been shown to have remarkable properties. It blocks activity of the HIV virus, it protects stores of beans against attack by beetles, and it demonstrates some activity against cancer and diabetes. All these properties from a plant-caterpillar interaction.

Species provide, however, much more than *goods* such as medicine, food, and genes. They also provide *services* to people. Intact ecosystems with their full component of species provide many essential services which we take for granted, and are often not completely aware of. Old growth forests and wetlands, for example, purify water and detoxify pollutants. Kelp forests and salt marshes provide nursery grounds for fishes and protect shores from coastal erosion.

Other ecosystem services include the provision of fertile soil, pollination for crops and the control of pests and pathogens. These

[1] The Ecological Society of America's report is entitled, "Strengthening the Use of Science in Achieving the Goals of the Endangered Species Act." It is in *Ecological Applications* (1966, Vol. 6(1)).

ecosystem services are provided to us free of charge. They are not included in our economic valuation system. They are not owned by anyone. They are not easily replaced. These services are of obvious importance to people, and warrant strong protection.

In some cases, protection of individual species through the ESA has had the added benefit of protection of the ecosystem in which the species lives, and therefore, of these critical ecosystem services provided by the ecosystem. For example, protection of the northern spotted owl has resulted not only in protection of probably hundreds of other old growth species of plants, animals, invertebrates, but also protection of watersheds that provide clean drinking water for cities and spawning grounds for salmon.

The increases in scientific understanding of species and ecosystems over the past two decades strongly reinforces the original goals of the ESA. Thus, in addition to ethical and moral reasons to protect species and habitats, it is in our own best interests to do so. Protection of species benefits us all. New information also provides guidance about how to achieve this protection in more efficient and effective ways.

In closing, let me share with you my pleasure that my younger son Duncan is here with us today from Oregon. Throughout human history, parents have looked to the younger generation as the hope for the future, the hope for continuing the good things that we have begun and for correcting our errors. Now, however, the next generation may not be able to undo our most egregious and shortsighted mistakes. As E.O. Wilson has said, loss of biodiversity is the folly least likely to be forgiven us by future generations.

Thank you.

Senator KEMPTHORNE. Dr. Lubchenco, thank you very much. Is this Duncan over here?

Dr. LUBCHENCO. This is Duncan.

Senator KEMPTHORNE. Duncan, welcome. We're glad you're here. Dr. Pimm.

STATEMENT OF STUART PIMM, PROFESSOR OF ECOLOGY, UNIVERSITY OF TENNESSEE, KNOXVILLE, TN

Dr. PIMM. Mr. Chairman, gentlemen. I'd like to make two points this morning. The first is that we are in the midst of a massive loss of species. The second, the Endangered Species Act has been a valuable tool in preventing extinction. The first of my points has been so beautifully read by Senator Reid, including my punch line, that there would be little point in my repeating it.

Senator REID. Why don't you try, it was pretty good.

[Laughter.]

Dr. PIMM. No, I will defer to your reading.

In small part, I think we scientists play into the hands of journalists who see in our debates the controversies that sell their books and newspapers. We scientists have made many predictions about the future of biodiversity. We do this to see how sensitive our conclusions are to the assumptions we must make. Certainly, we'd like to have more precise estimates about the rates of extinction.

I took the liberty last night of phoning up one of my persistent critics, Professor Dan Simbeloff, from Florida State University, who has criticized me in the literature for as long as we have been

friends. I asked him what he would say if he were talking to this committee.

Without any prompting, his conclusions were almost verbatim the same as mine. He is desperately unhappy about the way that this debate is being portrayed in some of the popular accounts. He too feels extinction rates are high. He too feels that those extinction rates are accelerating. Without any prompting, he came up with exactly this same wording, whatever the uncertainties, no ecologist has predicted less than massive extinction.

The United States houses several of the Earth's extinction black spots. The Hawaiian islands have already lost most of their bird species, many of their plants, and are now home to more endangered species per square mile than almost any other part of the planet. In the lower 48 States, we've lost large numbers of fish and other freshwater species. Extinction should be a national concern.

I've been privileged to work on endangered species with many outstanding scientists and universities, State governments and Federal agencies. My experiences taught me that the Act protects not just endangered species. Many of the species, too, the ecosystems that house them, and crucially, areas that are so valuable to use by Americans.

In Hawaii, island-wide biological surveys identified those areas richest in endangered birds. With the help of the Nature Conservancy, the Fish and Wildlife Service purchased some of the most important areas, providing permanent protection for many other species of animals and plants.

Following the recommendations of the National Research Council, the Service has brought back from the very brink of extinction the bird called the 'alala. Once again, in acquiring its habitat, the Act has protected much of the islands' rain forests and their unique biological heritage.

In Florida, my research group's current work involves a small sparrow. We call it Goldilocks. It requires very precise water levels, not too wet, not too dry. Changing the water flows to save the sparrow will benefit the entire Everglades ecosystem, including the productive fisheries of Florida Bay. The Act requires that we protect the sparrow, and in doing so, it ensures that we manage ecosystems skillfully.

No bird or endangered other species has been more pilloried than the Snail Darter of Tennessee, the small fish that held up the construction of the unwanted Tellico Dam. What would we have saved if the Act had been upheld? First, the family farm of one of my former undergraduates. Second, a fine trout stream.

And third, burial grounds sacred to Native Americans. And yes, a rich species river. Only unsupported anecdotes about the Snail Darter argued that the Act pitted species against people. Please let's recognize that the real controversy was over different versions of our own future.

That brings me to the Smoky Mountains National Park. Three generations ago, the debate over saving the last old growth forests in the eastern United States closely resembled today's debate over the forests of the Pacific Northwest. Had the Act been in effect 80 years ago, I can easily imagine the headlines of salamanders versus jobs.

Yes, logging large hardwoods is now an extinct profession. Before we decry that particular cost of environmental protection, please notice that this national park attracts millions of visitors a year, and several large communities depend upon their business. If the debate about this Act reduces to a consideration of economic costs and benefits, then let us carefully examine its history in this regard. For there are many cases where it has enriched both the economy and our lives.

Thank you.

Senator KEMPTHORNE. Dr. Pimm, thank you very much.

Dr. Clegg, I'd like to begin my questions with you. I find many things in your report that I agree with, such as the statement you made that sound public policy often depends on sound science. Does the wide variety of things protected by the Act, and this would be plants through invertebrates and vertebrates, lend themselves to a single biological definition of a species?

Dr. CLEGG. We believe that the definition that we've advanced in the report provides that kind of generality. The evolutionary unit definition is based on the integration of a number of attributes of the unit, including genetic, morphological, and behavioral attributes, so that we could assess that it is a distinctive entity with an independent evolutionary future.

Senator KEMPTHORNE. OK. Does the Act currently discuss genetics and the use of genetics in the process of identifying what should be protected under the Act?

Dr. CLEGG. I cannot say whether the Act presently discusses genetics. Our report discusses it in detail.

Senator KEMPTHORNE. Should it?

Dr. CLEGG. I believe that genetics provides essential information, I am after all a geneticist, I have to confess that my bias would be progenetics. Genetics provides a very fundamental basis for evaluating biological distinctiveness, and it should be a criterion in most cases. There may be exceptions.

Senator KEMPTHORNE. All right. Then in your opinion, should the Act treat a full biological species in the same way that it treats a subspecies or a distinct vertebrate population?

Dr. CLEGG. Our report came to the conclusion that the Act was sound in its treatment of subspecific entities as well as species as eligible for protection.

Senator KEMPTHORNE. All right, thank you.

Dr. Lubchenco, and I appreciate that you brought Duncan with you, I too am a parent, I have two children, Heather and Jeff, that I've yet to be able to get to come to one of these hearings.

[Laughter.]

Senator KEMPTHORNE. But I join you, we're all dedicated to passing on a good world to these young people and make improvements to it.

Are there similarities between, let me ask you this. Are there similarities between multiple use management and ecosystem management? What are the differences?

Dr. LUBCHENCO. Ecosystem management is a term that is a relatively recent one. It has been used in various ways. I will define it for you in the way that I think is most appropriate, that is, taking large scale view of an ecosystem and managing it in a way that

affords opportunity for incorporating more information as it becomes available.

I think it's fair to say that for most ecosystems, we don't know at this point exactly, precisely how to manage for a particular goal. We think we have some pretty good ideas, based on our understanding of ecosystems.

But what is most appropriate, and what is new about the concept of ecosystem management is to use management as a research tool to try different kinds of management schemes, to learn from them, to do it in a very proactive, conscious scientific way, to generate hypotheses about possible outcomes of different management schemes, to learn from those to test hypotheses, and then to fold that information back into management.

So the concept of ecosystem management acknowledges up front that we are not omniscient, we don't understand everything about ecosystems, in part because we're putting different kinds of stresses on them from ever before. The concept, I think, is a powerful one. Relative to the Endangered Species Act, I think it is important to recognize that we need to focus both on species as well as on ecosystems, that neither is a substitute for the other. They are both appropriate and both needed.

Senator KEMPTHORNE. All right, thank you very much.

Dr. Pimm, I appreciated when Senator Reid referenced what you had provided, and then your reference to that. Let me ask you this. Is it natural, and I guess it would be the degree, but is it natural that there is going to be extinction of species, and can mankind stop any further extinctions from taking place?

Dr. PIMM. Certainly species go extinct in much the same way that eventually we will all die. But on the other hand, if we all died between now and the end of next week, that would represent some sort of disaster. And it's the rate of extinction, the fact that species are going extinct, perhaps 1,000 or 10,00 times the geological background rate that concerns us.

In the context of the Endangered Species Act, there has been a great deal of emphasis on recovery of preventing species not just from going extinct, but making them sufficiently common that we no longer have to worry about them. And that's as it should be. But if we look at how effective the Act has been from preventing extinction, then clearly it has been effective in preventing extinction.

I think in the case of the 'alala in Hawaii that I mentioned, that species quite likely would be extinct in the wild now if it were not for the actions of the Fish and Wildlife Service. I think their success stories have not always been given the credit that they deserve.

Senator KEMPTHORNE. All right. Thank you very much.

Senator Chafee.

Senator CHAFEE. Thank you, Mr. Chairman.

Dr. Pimm, the question that is asked frequently is, if you can't trace to a threatened species or endangered species some potential benefit to man. In other words, the yew tree might be very valuable to man, or one of the butterflies that were described by Dr. Lubchenco. If you can't attribute a benefit to man, then what harm is it if it becomes extinct? Like the bird you're describing in Hawaii, so what, it's gone. Sorry, but that's life or that's death.

Dr. PIMM. If that bird had been lost, we would have lost nothing more, and perhaps I'm saying that cynically, than an important part of the Hawaiian heritage. But if we would have not protected that bird, we would have not protected a large area of forest on the side of the big island of Hawaii——

Senator CHAFEE. But that's taking another step. In other words, in your testimony, you were saying that by protecting the bird, we were protecting the Hawaiian rain forest. Now, maybe it's worthwhile to protect the Hawaiian rain forest.

Dr. PIMM. Absolutely.

Senator CHAFEE. But I think the opponents might well say that that's a separate issue, do you want to protect the Hawaiian rain forest. Maybe you do, maybe you don't. But you shouldn't do it under the guise of protecting, of trying to preserve a bird that is of no consequence to human beings in theory.

Dr. PIMM. The particular species that we choose we use as measures, simple measures of if you like, ecosystem health. In much the same way as when you go to your physician, he takes your temperature. It's a simple measure, and it tells him or her about what's wrong with you, if your temperature is not right. In much the same way, we ecologists tend to focus on particular species, things that are big and easy to see, simply as measures of ecosystem health, if you like.

So yes, I agree that we use these things as simple, quick, and dirty measures. But nonetheless, we often use such quick and dirty measures to assess the health of complex things.

Senator CHAFEE. Well, as you know, I feel very strongly about preserving what we have in this world of ours, where we have jurisdiction in the 50 State National Forests. Even though people can make mock of it, the Stephens kangaroo rat or the fringe toad lizard, oh, I can remember when we were dealing with the Snail Darter and the Tellico Dam.

Dr. Lubchenco, first I want to congratulate you for using the longest word that I've ever seen.

[Laughter.]

Senator CHAFEE. I won't pronounce it, but DMDP has 35 letters in it, I counted it. I think you just used the abbreviation.

Dr. LUBCHENCO. Actually, I said the word as well.

Senator CHAFEE. You said it. Well, it went by me. I thought it was a sentence instead of a word.

[Laughter.]

Senator CHAFEE. When you finish all this, doesn't it all come down to habitat, Dr. Clegg? We're not going to preserve any of these species unless we preserve the habitat?

Dr. CLEGG. Habitat is a key issue in species conservation. Our committee came to the conclusion that the science is irrefutable that species must have habitat to survive.

Senator CHAFEE. I must say, I found the challenges on the courts that we're dealing with the case that was just decided, it was a surprise to some people that they decided habitat had to be preserved. I don't know how you can preserve a species without preserving the habitat.

In the NRC's report, you used the term evolutionary units.

Dr. CLEGG. That's correct.

Senator CHAFEE. Now, are you using that to supplant the term, distinct population segment, that's in the Act?

Dr. CLEGG. We're trying to provide a unified scientific definition that can be operationally applied that may encompass the different categories that are listed in the Act, which include distinct population segment, subspecies and species. So our effort is to provide a scientifically-based and conceptually-unified definition that may encompass those. It may not always. There are cases, and we give examples in the report, where some distinct population segments fail to satisfy the evolutionary unit definition.

Senator CHAFEE. My time's up. Thank you very much, Mr. Chairman.

Senator KEMPTHORNE. Senator Chafee, thank you.

Senator Reid.

Senator REID. Dr. Clegg, give me your educational background?

Dr. CLEGG. I got a bachelors degree in agricultural genetics at the University of California at Davis, and a Ph.D. in genetics also at the University of California at Davis. I taught at Brown University in Rhode Island for 4 years, and at the University of Georgia for 8.

Senator REID. Taught what?

Dr. CLEGG. At Brown University, I taught a course called evolutionary genetics. I taught a part of introductory biology. I taught use of the computers in biology and genetics. At Georgia I taught a course in population genetics and introductory genetics. For the last 12 years I've been at the University of California at Riverside, where I also teach a variety of courses, including molecular evolution, and introductory genetics.

Senator REID. Dr. Lubchenco, would you give me your educational background?

Dr. LUBCHENCO. Certainly. My bachelors degree is from Colorado College, my masters from the University of Washington.

Senator REID. In what field?

Dr. LUBCHENCO. My bachelors was in biology. My masters from the University of Washington is in ecology. My Ph.D. is from Harvard University, from the Department of Biology. I was on the faculty as an assistant professor at Harvard University before I went to Oregon State University. I teach courses in ecology, biology, marine biology.

Senator REID. Dr. Pimm, would you give me your educational background?

Dr. PIMM. I received my bachelors degree at Oxford, that's the one on the other side of the Atlantic and my Ph.D. from New Mexico State University. I'm Professor of Ecology at the University of Tennessee.

Senator REID. Would the three of you agree that extinction is forever?

Dr. CLEGG. Yes.

Dr. LUBCHENCO. Yes.

Dr. PIMM. Yes.

Senator REID. Let me direct this question to you, Dr. Pimm. In the book, Noah's Choice, Mann and Plumber incorporate your work. What is your impression of their science and their use of your work?

Dr. PIMM. I think rather obviously they try to present a picture of great dissension amongst the ecological community, when, as I mentioned in my testimony, we have very entertaining and vigorous debates about the details, but not about the conclusions. Even my most severe critic and I do not know of any ecologists who think that we are facing less than very high rates of ecological extinction.

Senator REID. What is your impression of their science?

Dr. PIMM. I think in many areas it's a little superficial. Perhaps I could just use one example. It's easy to look at the case of the whooping crane in Texas as an example of where we spent a million dollars of tax money to save 20 birds at $50,000 apiece. They put that in as being an example where I think the implication is that somehow this is a waste of our resources.

If you look at that case very carefully, you find that that $1 million investment brings in $5 million worth of income to the community per year. I'm sure we all wish that with our tax dollars we could get that kind of return on our investment.

In other words, I think there are many cases where the stories are complicated and difficult, many cases where the Endangered Species Act has been of economic benefit. One does not see that side of the story in the book.

Senator REID. Would the three of you agree, though, that economic benefit is not always the reason we should try to save species?

Dr. PIMM. I think there are many other reasons. But if it has to come down to economics, then we should at least look at that case very carefully.

Senator REID. Would the two of you agree?

Dr. CLEGG. Yes.

Dr. LUBCHENCO. Yes.

Senator REID. I note in your addendum to your statement that you give a critique of Greg Easterbrook's "A Moment on the Earth," is that right?

Dr. PIMM. That's correct.

Senator REID. And reading Mr. Easterbrook's book, as I have, I believe that Easterbrook, even though he's admittedly a non-scientist, I think we need to hear more of the good news that comes from what's happened because of acts like the Clean Water Act, Clean Air, the Endangered Species Act. Would you scientists agree we hear too little of what good has happened with our having entered into the fray of trying to cause people to do things?

Dr. PIMM. I agree entirely. I think there is a lot of good news about the effect of environmental legislation, and we ought to hear a lot more of it.

Senator REID. Would the two of you——

Dr. CLEGG. Yes. Coming from the Los Angeles Basin, where the air quality has improved significantly over the last 20 years——

Senator REID. Even though we have millions more cars, or hundreds of thousands of more cars?

Dr. CLEGG. That's correct.

Senator REID. Dr. Lubchenco?

Dr. LUBCHENCO. I also agree, which is one of the reasons that I emphasize the usefulness to people of species, both in terms of

products that they give to us, but also the kinds of ecological services that they deliver. It's the positive messages, the usefulness, in addition to the good track record that exists that I think should definitely be emphasized.

Senator REID. Would you all agree that we should keep the Endangered Species Act in some, refine it a little bit, have the Endangered Species Act?

Dr. CLEGG. Well, speaking for myself, certainly our position is that there are areas where improvements can be made in the law, but that we endorse the law as a scientifically sound policy.

Dr. LUBCHENCO. The Ecological Society of America report comes to the same conclusion, and I agree with that.

Dr. PIMM. I was a reviewer on both those reports, and I like them both very much. I agree with the conclusions.

Senator REID. Thank you.

Senator KEMPTHORNE. Thank you, Senator Reid. I look forward to your other book reviews.

[Laughter.]

Senator KEMPTHORNE. Senator Thomas.

Senator THOMAS. Thank you, Mr. Chairman. I apologize for not having been here, so I'll be very, very brief.

But I do have to say, as we always do, that those who look for some change in this law are always characterized as not being for endangered species. I think that's absolutely wrong. In fact, the question my associate asked, everyone I know of wants to do something to continue to support endangered species. That's not even the issue. So I have to always make that little point.

By the way, we spent $7 million on the whooping crane in Nebraska, so $1 million wasn't quite the total. I don't suggest that it wasn't a good idea, but $1 million is not the amount that was spent on whooping cranes.

What do you think, Dr. Pimm? Do you think people in your profession are balanced in their view of this issue?

Dr. PIMM. I think we all understand that this Act must occasionally be right when it does view the Act as pitting people against species, species against people if you like. But on the other hand, we also see many cases where those of us who work with the endangered species recognize that there are different constituencies, some of whom benefit, some of whom are harmed by this legislation.

With a lot of hindsight, there are many examples where our environment is a beautiful place to live as a consequence of having environmental protection. Perhaps I could give you one example. I was once being interviewed by a very hostile reporter from San Diego, who wanted to know what the value of the environment was. She had just bought a house overlooking a canyon, an identical tract house in California, looking over a canyon. One not looking over a canyon makes a difference of $20,000 or $30,000.

There are many of these kinds of subtle, indirect consequences of our environmental protection that are often not brought out into the open. I think when you work in a particular area, as with the Snail Darter and the Tellico Dam or the Great Smoky Mountains National Park or the Everglades, you begin to realize that these problems involve a lot of different viewpoints, a lot of different peo-

ple. Yes, there are things to change. But the Act has been very powerful in its 25 years in making our environment attractive.

Senator THOMAS. That wasn't really my question. My question is: you become an advocate for the endangered species, do you not?

Dr. PIMM. Yes.

Senator THOMAS. And you should. But I think we do need to understand that. We have a thing going with grizzly bears, for example, in Yellowstone Park. I expect the grizzly bear team to be the greatest advocates. I don't expect them to be very balanced in their view. My point is that I think we have to recognize that, and some on the other side are not balanced either. But certainly, if you work with that each day, you could hardly be expected to see all the ramifications. But, is that a fair statement?

Dr. PIMM. With great respect, I don't think so. I do see with all of these cases people who benefit and people who do not.

Senator THOMAS. Do you think, Doctor, that every species has the same value? Should we put the same emphasis on the protection of every endangered species?

Dr. CLEGG. It is very difficult to anticipate future value. My background is partly in agriculture. One of the big success stories in agriculture has been the establishment of global gene banks to preserve genetic resources for crop improvement. But we do that in the face of future uncertainty. We do not know which genes we're conserving are likely to have future utility for man and for agriculture.

It's much the same, I think, in other areas of biological conservation. We're trying to make a bet about the future with very limited present knowledge about how that future will play out. From that perspective, one sensible strategy is to treat both species as if they were equivalent. I think the actual policies play out, however, in different ways. We do make priorities in the way in which the policies are implemented, and the way in which we invest resources in endangered species protection.

Senator THOMAS. I guess you wonder if you treat the bald eagle or the grizzly bear the same as you do some kind of an insect. You didn't really answer my question.

Dr. CLEGG. Well, I guess I tried to answer your question by saying——

Senator THOMAS. You said most.

Dr. CLEGG [continuing]. That it is very difficult to predict future value. So a sensible strategy is to in fact treat all entities which are eligible for protection uniformly. But in reality, we don't actually do that. We do make societal decisions.

Dr. LUBCHENCO. Senator, could I comment on that, please?

Senator THOMAS. Go ahead.

Dr. LUBCHENCO. I think the issue of balance needs to be recast. Specifically, I think what needs to be balanced are the short-term obvious things that are bearing down on us as pressures tomorrow (in terms of economic benefits, for example, or property rights), against longer term benefits for which we have somewhat incomplete knowledge.

Some of those longer term benefits are undoubtedly economic, some of them are undoubtedly health. Some of them have to do with the kinds of things that we don't completely understand at

this point. So it's more short-term versus long-term that I think is the real issue. It's decisions about species that are often driven by short-term considerations that have much more important long-term implications.

That I think is the real difficulty in this issue. Professor Clegg's description of not knowing the value of some, the future value of some species, is a real one. I'm a marine ecologist. The area of natural products chemistry in marine systems is relatively recent. There are lots of seaweeds, there are lots of sponges, there are lots of sea squirts from which we are finding very interesting, novel, new compounds with important medicinal properties.

They seem like something that is just kind of some slippery, slimy thing on the rock, that would be easy to say, that's not important to save. So we have incomplete knowledge about the value of many of these species, both in terms of the kinds of products that they deliver, but also the roles that they play in their ecosystems.

Senator THOMAS. Would you also, and I'm looking to be argumentative, we have incomplete knowledge, we also have a finite amount of money.

Dr. LUBCHENCO. That's correct. I think that in reality, priorities need to be set. And part of what this Ecological Society of America report and the National Research Council report do are give guidelines based on science about the kinds of priorities that could be established. They would be things like taking a proactive, early approach to protect as many critical habitats as possible, protecting umbrella species, because they often protect a large number of other species, focusing on hot spots where there are large numbers of endemics.

Those are the kinds of things that can be done that would be scientifically based reasons to help set priorities and are very reasonable in terms of allocating resources. I think it's less appropriate to use those criteria in deciding what to list or not list. But I think it is appropriate to use those criteria in deciding where to allocate limited resources, once endangered species have been identified.

Senator THOMAS. Thank you very much.

Senator KEMPTHORNE. Senator Thomas, thank you.

One announcement. In order to accommodate some conflicting schedules, I'm going to ask that the fourth panel will be moved to the third panel position, and we'll just slide them in there. So with that, Senator Baucus.

Senator BAUCUS. Thank you, Mr. Chairman.

I'd like to follow up a little bit on Senator Thomas' questions, if I might. I understand the uncertainty. It's clear that's a problem. Let's assume that the scientific community is fairly convinced that there's no food chain issue. Let's take a species, let's take some slime, a small insect or something. Let's assume that the scientific community is quite certain, not 100 percent certain, but you know, fairly certain there's no food chain issue here, you go up the food chain, it's not really all that important or relevant.

Let's further assume that the scientific community knows the molecular structure and the DNA structure and all these things, and gee, there's not much here of any future value with respect to developing drugs or what-not. This is just something, you can't see

much relevance to anything. Let's just assume that. I know it's a very, very difficult assumption to make. But let's assume it.

Then, is that a species that we should protect with the same force as if we're talking about the bald eagle or wolf or bear? I'm just curious what you as scientists think about that, from a scientific perspective.

Dr. PIMM. Perhaps I could respond. The difficulty is that species like that hardly ever occur in isolation. But if you find a species that is odd, the chances are that there's a lot of other species, many hundreds of other species, that are equally odd. If we could in fact find one lonely, isolated, obscure species, then perhaps we would not care about it.

But in reality, when you find one peculiar species, there are likely to be hundreds of other peculiar species that we don't know about. And it's from them that the kind of peculiar and bizarre and very——

Senator BAUCUS. But what if you knew, you found some odd species, and you've studied this thing to death. There's just no way this thing is related to anything. Then what do you think?

Dr. PIMM. My experience in the way that the Fish and Wildlife Service has identified species is, they don't do that. They tend to——

Senator BAUCUS. No, that's not my question.

Dr. PIMM. I know.

Senator BAUCUS. The question is, you as a scientist, what would your recommendations, what would your thoughts be?

Dr. PIMM. I think it's, with the greatest respect, sir, it's a non-question, because odd species don't occur on their own like that.

Dr. LUBCHENCO. Senator, I think it might be productive to turn that question around, and to say that in fact, there probably are species that we know are particularly important, and that efforts could be placed more on those species, which is a little different from the question that you are asking.

Senator BAUCUS. Right.

Dr. LUBCHENCO. But in fact it is probably a better reflection of reality. In other words, to put priorities, to allocate resources to those species that we know have some biological, human ecological importance.

Senator BAUCUS. That's a good point. Because resources are finite. And priorities are very important.

Another question. I asked Secretary Babbitt his view. What in the world's going on here? Why are some people so upset with the Endangered Species Act? I mentioned to him westerners, for example, some westerners are quite upset. But most westerners want, you know, they want a proper Act.

But yet, they're pretty upset here. As scientists, from your point of view, what's your explanation? Why do you think there is a significant problem among a lot of people with the Endangered Species Act? What's the root of it as you see it, from your perspective? Why? Any of you.

Dr. CLEGG. Well, I'm not sure that there's a scientific explanation for the public concern.

Senator BAUCUS. I'm not asking for a scientific explanation. I'm asking, as scientists, what, from your perspective as scientists, not

a scientific explanation, but from your perspective as scientists, what's the cause of the problem?

Dr. CLEGG. Well, let me speak with a different hat on. I'm also dean of a college which is partly a college of agriculture. Our agricultural constituency is afraid of the Endangered Species Act. They're very worried about its impacts on them, mostly because of regulatory uncertainty. They don't know how it will impact on their practices and on their business. So I think uncertainty probably is an issue which is important from a policy point of view.

Senator BAUCUS. Do you think that the Act can be changed to accommodate points of view that a lot of people have, namely more State control, more certainty, the safe harbor provisions and so forth, yet at the same time, not to compromise the essential thrust and the central purpose of the Act?

Dr. CLEGG. That's a very difficult question for me to answer. I'm not sure that I can provide you with an informed answer.

Senator BAUCUS. Based upon what you know of the discussion and of the law and what some people are suggesting?

Dr. CLEGG. Yes, I believe so. I believe that our system of government and our way of resolving problems is a very good one, and that we will arrive at solutions which achieve these goals, both biological conservation and more acceptable regulatory mechanisms.

Senator BAUCUS. Dr. Lubchenco.

Dr. LUBCHENCO. I think the challenge is to figure out a way to be much more proactive and involve the range of stakeholders that need to be involved, which requires understanding the importance of protecting species. That needs to happen before things come to loggerheads, where it's the courts that are involved. So I think it's a different approach, and I think that would be a very wonderful outcome of the deliberations that we will be engaged in, in the next few months.

Senator BAUCUS. Dr. Pimm.

Dr. PIMM. I don't have anything to add.

Senator BAUCUS. So you agree?

Dr. PIMM. I agree.

Senator BAUCUS. Thank you.

Senator KEMPTHORNE. Senator Baucus, thank you very much. I thank the panelists. Very informative information that you've given us, so thank you.

I would like to invite now the local and State officials to come forward. The Honorable Judy DeHose, who is councilwoman from the White Mountain Apache Tribe, Whiteriver, AZ; Mr. John Harja, chairman, Working Group on Endangered Species Act, Western Governors' Association, Salt Lake City, UT; the Honorable Emily Swanson, State Representative from Bozeman, MT; the Honorable Dick Knox, State Representative from Winifred, MT; and Mr. Dave Schmidt, National Association of Counties, commissioner, Linn County, OR.

We welcome all of you. We look forward to your comments that you'll be making to us. Let me begin then by calling on councilwoman DeHose. Again, I would ask that we be mindful of our 5-minute rule that we're making every effort to adhere to, so that we can accommodate everyone's schedule. Thank you very much.

STATEMENT OF JUDY DEHOSE, COUNCILWOMAN, WHITE MOUNTAIN APACHE TRIBE, WHITERIVER, AZ

Ms. DEHOSE. Senator Kempthorne, Senator Reid, and members of the committee, I am Judy DeHose, tribal councilmember, representing the Cibecue District on the Tribal Council of the White Mountain Apache Tribe. Chairman Lupe sends his regrets that he is unable to be here, and asked me to present his testimony.

The White Mountain Apache Tribe is honored to have been invited by this committee to present testimony on the reauthorization of the Endangered Species Act.

For those of you who are not familiar with our White Mountain Apache people and our land, our reservation homeland, known as the Fort Apache Indian Reservation, is comprised of some 1.6 million acres of lands ranging in elevation from 2,500 feet to over 11,400 feet. We have vast canyons and range land and over 700,000 acres, primarily ponderosa pine forest, through which traverse 400 miles of rivers and streams. Our reservation is home to abundant game and fish, including the once-endangered Apache trout, elk, bear, mountain lion, pronghorn antelope, deer, wild turkey, osprey, and our Nation's symbol, the bald eagle.

In pre-reservation days, we were entirely self-sufficient and healthy in mind, body, and spirit. The sacred waters which arise on our reservation sustained us. We depended upon wildlife, native plants, and our own agriculture for food, shelter, and clothing. All life was held sacred and that tradition continues today. The first deer was never struck down during a hunt. We would let it go so that there would always be one remaining in the forest. Prayers are always offered after the taking of any wildlife, giving honor to the sacrifice of that life for the survival of our families. Prayers are still offered today when the animals are hunted and killed.

Apache people never saw ourselves as separate from the Earth. We are one with the land. Hunting was not for sport and trophies but to provide food and clothing. Although we have been masters of our lands since time immemorial, the land and its fruits have never been simply for the taking, but are elements of our responsibility for stewardship of the land that the Creator has provided. Our people have always been taught to respect the land and living things. Individual ownership of land was unknown to us. But our responsibility to care for the land was taught to us from an early age.

Our tradition of stewardship continues to guide the natural resource management philosophy of the White Mountain Apache Tribe. Our lands were severely damaged due to the mismanagement by the Department of Interior from the time the reservation was first established in 1871. We have since regained managerial control of our lands, and are now in the process of repairing the extensive damages that were done to our grazing lands, forests, and riparian areas. In the past 10 years, the tribal council has voluntarily reduced our annual allowable timber harvest from 92 million board feet to 57 million board feet because of our concerns over over-cutting our forests and damaging our environment.

Despite the damages we have sustained, our reservation remains a refuge for many endangered and sensitive species, both listed and unlisted. Although the Endangered Species Act was passed in 1973,

our tribe had very little involvement with the Act or its implementation until recent years.

Initially, we viewed the challenges by environmental groups and the regulatory actions of the U.S. Fish and Wildlife Service regarding endangered species as a total hypocrisy. Those who sought to impose the ESA upon our tribe and our aboriginal lands made their challenges from cities where they had long ago exterminated native animals, plants and had erected cities of concrete and steel, where prairies, wetlands and other wildlife habitat once existed.

The species found on our reservation that are listed as endangered are rare because there are few healthy habitats elsewhere. Our reservation is home to many of these plants and animals because we have managed our land well.

In our Apache tradition, we do not manage our lands for the benefit of a particular species. We strive to protect the land and all the life form that it supports. Our homeland is too vast to manage for just one species. Our reservation traverses five life zones from Upper Sonoran to Sub-Alpine Forests. The diversity of our land provides habitat for a wide variety of plants and animals, and each is important to us. The pressures of environmentalists and the Ecological Services Branch of the U.S. Fish and Wildlife Service to manage our land for a single species is a contradiction to our view of life.

Senator KEMPTHORNE. Ms. DeHose, if you could just begin to summarize your final comments. We'll make all of your written comments part of the record. I appreciate, that's difficult when you're in this setting. But again, you've given us very thoughtful comments, and I'd just like to have you summarize perhaps from your own personal perspective.

Ms. DEHOSE. All right. In the Endangered Species Act, the law itself, we feel as a tribe, we have for a long time managed our lands in a harmonious way, in being sensitive to the natural environment.

We feel that the Endangered Species Act does not apply to tribes, and therefore, it should be the trust responsibility of the U.S. Government. If the tribe is included in the Endangered Species Act, there should also be a provision in which there are funds available so that we can comply with the Act. I wish I had more time to say all of this.

Senator KEMPTHORNE. There will be a round of questions where we can go into further detail. But again, I appreciated the sensitivity of your comments and the heritage that you have. So thank you.

We now have two representatives from the State of Montana. I think it's worth noting, a Republican and a Democrat. Senator Baucus, if you would like to make any comments?

Senator BAUCUS. Thank you, Mr. Chairman.

We are very proud of Dick Knox and Emily Swanson. Dick and Emily took on the task of trying to resolve various interests in our State, and trying to put together a common solution, an agreed-upon solution and approach to Endangered Species Act issues in Montana. They've worked long and hard at it, they've had many, meetings all across the State, many, many hours, and they've done, frankly, what has to be done, namely just work very hard, ignore

the rhetoric, forget the emotion of the issue, just roll up the sleeves and get the job done.

They've done a bang-up job. We're all very proud of our legislators. All of us in Montana are particularly proud of Dick and Emily. That's no idle statement, Mr. Chairman. They've done a very, very good job, and they're very, very highly respected in our State.

Senator KEMPTHORNE. Well, we welcome both of you. Representative Swanson, any comments you would have, Representative Knox.

STATEMENT OF DICK KNOX, STATE REPRESENTATIVE, WINIFRED, MT

Mr. KNOX. Mr. Chairman, with your permission, Representative Swanson and I will divide up our testimony.

Senator KEMPTHORNE. All right, then we're going to make sure we give you the full 5 minutes.

Mr. KNOX. Thank you very much.

Senator KEMPTHORNE. We've started the clock.

Mr. KNOX. Mr. Chairman, members of the committee, thank you for the opportunity to testify on behalf of the Montana Endangered Species Reauthorization Committee. I and Representative Emily Swanson have for the past 18 months co-chaired a committee to find common ground among a wide variety of Montana citizens about how to reform the Endangered Species Act.

I'm a Republican State legislator. I ranch with my extended family outside of Winifred, MT, in a remote part of the State of Montana. Emily Swanson is a Democratic State legislator from a university town, and is a long-time conservationist. Although the two of us vote quite differently on many issues, we respect one another's willingness to find where we can agree on contentious problems.

Early in 1994, Representative Swanson and I, in response to congressional activity on the ESA, and with the urging of Senator Baucus, agreed to convene a group of Montanans from all points of view, evenly balanced, to discuss and find where we could agree on necessary changes to the Act. We each invited nine people from our side of the issue.

I should point out that I invited people from the resource side of the spectrum, Representative Swanson invited people from the environmental side of the spectrum. We wanted Montanans who represented both sides of the political aisle and who represented economic interests as well as environmental interests. Ranching, farming, timber, mining, wilderness, wildlife, and recreation were all represented.

We weren't experts and we weren't paid staff, just Montanans who live on the land and have a willingness to accommodate one another's interests and seek agreement, Montanans who want to see the ESA work. Each member of the committee participated in their own time and at their own expense, not representing an organization. The committee included both legislators and citizens and worked with technical advice from public, private, and non-profit experts.

With facilitation by the Montana Consensus Council, over 18 months, we came to agreement on a set of guiding principles we think should continue to be incorporated in the Act. And a set of suggested improvements, which are quite general, but give us a framework within which to respond to various pieces of proposed legislation. We believe strongly that our process based on bringing all parties to the table and seeking consensus is the best way to find workable solutions to complex and very contentious problems.

We've produced a status report of our work in preparation for responding to legislation proposed by this Congress. The status report is submitted as part of our testimony.

Senator KEMPTHORNE. Very good, thank you. Representative Swanson.

STATEMENT OF EMILY SWANSON, STATE REPRESENTATIVE, BOZEMAN, MT

Ms. SWANSON. Mr. Chairman, thank you. I will just pick up from where Representative Knox left off, and go on a little bit into the substance of what we discussed as a committee. Most basically, our committee supports the findings, purposes and policy of the ESA as outlined in section 2. We do believe that the intent of the Act, of keeping species from extinction, is worthwhile.

Yet we recognize that the Act can be improved. There are significant areas of the Act which don't work well on the ground. Two areas we quickly agreed on for reform were one, the level of State involvement, and two, the delisting criteria and processes. We agreed that more local control over implementation of the Act would help, and that delisting needs clearer definition, so it can take place for more species and provide a degree of certainty to the Act that is now missing. For the purposes of this testimony, we're limiting our comments to those pertinent to State involvement.

We agreed on several recommendations around State involvement. Our recommendations are based on the need to build sound relationships with landowners whose land has critical habitat, habitat critical to threatened or endangered species. With so many species residing on private land, and with listing of the species potentially so restrictive, landowners are rightfully fearful of government intrusion.

Due to staffing constraints, there are few Federal agents on the ground working one on one with landowners. We felt that State wildlife agencies, which characteristically have more field staff, have a chance of better personal relationships with local landowners.

In Montana, State fish and game field staff frequently have personal relationships and deep personal knowledge of the wildlife, the land and the people living on it. Better on the ground information is available to field staff close to the landowners.

We felt, therefore, that States should have, and I say opportunities here, because it was interesting to me to hear Secretary Babbitt say that Arizona wasn't at all interested in this. But we feel in Montana at least that States should have the opportunities to provide more meaningful input on listing and delisting determinations, should have opportunities to provide more meaningful input on designating critical habitat, should have greater opportunity to

assume the lead, actually the lead and primacy in cooperation with other appropriate entities, in developing and implementing recovery plans, and should have adequate Federal funding to assist States in implementing ESA priorities, since they are national priorities.

States have great potential for making the Act work more efficiently and effectively. Over the long term, it's vital that we turn the Act from crisis management to preventive management, with more local control. I'll stop there. Thank you.

Senator KEMPTHORNE. All right, thank you.

Senator BAUCUS. Mr. Chairman, I apologize for the interruption here, there is a development on the floor which I must attend to. The Regulatory Reform Bill is on the floor, as you know, and there is now an amendment pending to delete section 628, that's the Superfund provisions in regulatory reform. I'm very much in favor of the deletion, it dramatically affects our State of Montana. All apologies to you, Mr. Chairman, and to you, Dick and Emily, I feel constrained to go over. It has to be done.

Senator KEMPTHORNE. Senator Baucus, thank you very much.

We thank you for your testimony.

Mr. Schmidt, I would like to ask you to make your comments now.

STATEMENT OF DAVID R. SCHMIDT, COMMISSIONER, LINN COUNTY, OR

Mr. SCHMIDT. Good morning, Mr. Chairman and members of the committee. My name is Dave Schmidt, I'm a commissioner from Linn County, OR, here representing the National Association of Counties as the chairman of its Public Lands Steering Committee. I do appreciate having the opportunity to be here today to offer a national county perspective on needed changes to the Endangered Species Act.

NACO has taken a moderate approach in its review of the ESA, with the purposes of improving the existing Act, rather than proposing a wholesale rewriting of its provisions. These changes have been developed after more than a review by the Public Lands Steering Committee and its various components.

We do have seven points in the written material that's submitted to this committee. In the interest of time, I'm not going to re-read those points, but go on into a little bit of discussion about some of those points.

NACO believes it is in everyone's best interests and in the best interests of species not to get to the place where we have to list a species under the ESA, if possible. That is, every effort should be made to conserve habitat and take appropriate actions to avoid implementation of the stringent requirements of the Act. We believe that providing incentives for potentially affected public and private property owners to enter into conservation agreements with the Secretary of the Interior may lead to better overall coordination and management of the habitat for multiple species, and provide for a longer term solution that has a greater level of public acceptance than a habitat conservation plan imposed on the populace by Federal officials.

These incentives could be, of course, monetary. More importantly perhaps, regulatory relief, tax credits, land exchanges, or any other number of valued processes. We believe this voluntary approach is also more likely to provide the flexibility to fit the specific conditions of the site and the landowners' goals while providing a level of protection not contemplated by the ESA today.

We also understand the fiscal realities of today's budget situation, and believe we must prioritize the money and time invested among species to get the best return for our investment in their conservation. There is simply not enough money to do it all. Indeed, some species will probably be lost regardless of how much money is spent on their recovery. Voluntary agreements among the various stakeholders can certainly help stretch those conservation dollars.

Throughout the current ESA, local governments are given virtually no role to play in the decisionmaking process, the planning process, or the implementation of the ESA, except to the extent Federal officials or their State partners dictate terms and conditions to local officials. Now, not every county in the Nation is prepared to immediately participate in all aspects of the ESA process. But many do have a significant body of expertise that has been woefully underutilized, because the Act does not require Federal officials to even consult local governments, let alone ask them to substantially participate in implementing the Act.

NACO advocates involving affected local governments and their expertise whenever possible. Land use planning decisions, for an example, are primarily a function of local government. Citizens are familiar, by and large, comfortable with local processes for planning and decisionmaking. Most affected citizens want to have input into the planning of designations affecting their lives and livelihood.

They believe local officials are more likely to represent their interests than Federal bureaucrats. We also believe that local decisionmakers can provide the flexibility and timely responses necessary to make the Act work better. Second, local governments may be able to make decisions or help make decisions regarding habitat outside the core review area that may enhance species conservation and recovery.

While species conservation and habitat protection are important goals, we must understand and more fully take into account the human implications of actions taken pursuant to the Act. We believe that too often in the past, Federal officials have decided to take certain actions to protect habitat with a view that the humans affected by those actions will just have to accept them, like it or not.

And this approach has generated a good deal of opposition to the Act, if not its intended goals. We believe that the economic, social and cultural aspects of human activity must be given greater weight in the post-listing decisions making processes of the Act. We acknowledge that whether a species is threatened or endangered is a matter of biological science. But what is done to address that status has implications in a much broader arena.

Again, we are not going to be able to save them all. We will have to be prepared to perform species triage, and accept the fact that

not all habitat can or should be protected, as suggested by Dr. Lubchenco. For example, fringe areas of a species range should not dictate mandatory recovery efforts when more than adequate populations and habitat exist elsewhere.

It would be over-reaching to say that all counties across the country are prepared to take on the challenges of implementing ESA. Many are not even aware of potential implications of the listing. However, in reauthorizing the Act, Congress should consider putting as much flexibility into its provisions as possible, erring on the side of participatory decisionmaking at the lowest possible level, rather than the current practice, which is perceived by many to be exclusive and dictatorial.

America's counties stand ready to share in the daunting task of protecting and conserving species and the habitats which are truly necessary for their survival. It is critical that this country have a viable species conservation program established in law. But let's have legislation that accomplishes these goals more effectively, efficiently and in a manner the American people feel is fair. We ask that counties be made partners in this process, not just observers on the sidelines.

Thank you.

Senator KEMPTHORNE. Mr. Schmidt, thank you very much.

Now, Mr. Harja, who is the chairman of the Working Group on the Endangered Species Act, Western Governors' Association.

STATEMENT OF JOHN HARJA, CHAIRMAN, WESTERN GOVERNORS' ASSOCIATION STAFF WORKING GROUP ON REAUTHORIZATION OF THE ENDANGERED SPECIES ACT

Mr. HARJA. Mr. Chairman, I apologize for not being here when the panel was empaneled. I also serve on the Board of Trustees for our school trust lands in Utah, and was testifying downstairs.

Senator KEMPTHORNE. Well, they've made good use of you today.

Mr. HARJA. The Western Governors have been quite concerned about the reform of the Endangered Species Act for quite some time, resulting in a resolution they passed last November, that contained standards for what they would like to see in a reform bill. Then they empowered a working group to go to work to try to figure out what all that meant.

This group met earlier this year for about 4 months straight. We did have some discussions with folks in the Interior Department, some of which were here earlier. Some of those discussions were quite heated. In addition, there were members of the International Association of Fish and Wildlife Agencies in those discussions, which I think are back here as well.

Our product is two-fold. First, there is a document entitled "Essential Elements of What Is Necessary to Amend the Endangered Species Act." The second is some actual legislative language. The former is available and is contained in my written testimony. The latter will be finished next week at a meeting we're having in the State of Montana, as a matter of fact.

A number of staff people, actual biologists that work in the field, have been part of that. A lot of the ideas mentioned a moment ago by Representative Swanson are very much a part of that. These principles have been adopted by the Western Governors. It doesn't

mean they all agree that this is the only thing that needs to be done. There are other areas where some Governors feel they need to push additional changes. But they all agree that this set of core principles is essential. They have to do a lot with the process and exactly where a State agency should be involved in the process.

I want to emphasize, though, that this represents a package. A lot of the States are willing to even assume primacy, if it's the correct law. If it's the current law, I don't know that anybody particularly would accept, maybe California that as has been mentioned, has its own Endangered Species Act.

A lot of States are interested simply in being a co-partner. They don't want primacy, per se. They want to just be involved at the listing stage. They want to know about it, and they want to be involved at the recovery planning stage, which is an area we would like to emphasize more. They want to be involved in critical habitat or even be able to say a critical habitat is not necessary. They want to be involved in the habitat conservation plan.

One of the key ideas they propose is that if a State or a local agency or any combination thereof, including combinations with the Federal agencies, can put together a plan to solve the problem with a particular species, looking more at multispecies ideas than single species, they should be allowed to do that, and given the time, and in fact, the Act ought to be suspended while that's underway. Either the Act never applies or for some reason it's listed, that the consequences can be suspended.

The States are willing to take that responsibility, take on that role. They believe they can offer a lot to the process. They really want to be partners and involved with the Federal Government.

I want to mention, though, funding has been mentioned here already. I'll just briefly say, a lot of the Governors are very concerned that funds to actually implement the Act, I'm not talking about acquisition funds, will be cut, resulting in an even worse problem than we have now. We'd like to reform the Act and then have the funding complement that.

The States' position really stems from the idea that we do not believe that these resources have been Federalized completely. There is concurrent authority for the States. The role of the States, we would like to make sure that the States become full partners, and make sure the Federal Government is at the table, all the stakeholders are at the table when putting together a plan to recover a species.

Keep the States fully informed, enable the States at their choice to assume the lead, allow the suspension of the consequences if necessary, place a great reliance on the State expertise process, and in fact, give us a presumption of being correct that the Secretary may have to rebut, if necessary.

In terms of streamlining the Act, we want to stop the abuse of the petition process. Right now, it's just a big race to do a lot of petitioning and listing, but nothing's really happening in recovery, per se. We want to make recovery planning the important point in time where all the evidence is collected and a plan is put together on how to recover, or even maintain the level.

That's where the State can offer a full partnership, and local government. We want to emphasize that recovery and delisting is just

as important as listing. Landowner assistance and other incentives have been mentioned. We fully support that as well.

I'll quit there, my time is up.

Thank you, Mr. Chairman.

Senator KEMPTHORNE. Mr. Harja, thank you very much. I appreciate that.

Let me ask a few questions now of our panel. First to councilwoman DeHose, you referenced, of course, and we've talked a little bit about the statement of relationship that's been developed between your tribe and the Federal Government. Would you just characterize for me that is that statement of relationship, and how does the tribe feel about that?

Ms. DEHOSE. I think the statement of relationship that was made, I think is a result of the statements between our Chairman Lupe and also Mollie Beattie, and that each recognized the importance of the government-to-government relationship, and that the U.S. Fish and Wildlife recognized that the tribe itself was capable of managing its environment.

Senator KEMPTHORNE. When did that first go into place?

Ms. DEHOSE. The final was signed in December 1994.

Senator KEMPTHORNE. Now, you've stated that the tribe would prefer to be excluded from requirements of the ESA. Does the close proximity of State-Federal-private lands make this difficult for that sort of a recommendation to be agreed to?

Ms. DEHOSE. The tribe, as the Endangered Species Act is written now, is not mentioned in the Act. So we've assumed that we are not a part of it, and would like to continue to do that, because we feel that we're a sovereign.

Senator KEMPTHORNE. That statement of relationship, what would be your attitude, do you feel that something similar should be developed for all of the 50 States of the Union, with the Federal Government?

Ms. DEHOSE. I think that would be something that the State and the Federal Government would need to work out.

Senator KEMPTHORNE. OK. Let me now ask our two representative from Montana, have the principles that you each referenced today, of the Montana Endangered Species Reauthorization Committee, have they been passed on to the Western Governors' Association, have they been incorporated in any of the dialog that has taken place there?

Ms. SWANSON. Not formally in any way.

Senator KEMPTHORNE. What would, based on your input with the members of your organization that worked on this, let me ask Representative Knox, what would your thoughts be about this statement of relationship, something that's been developed with the Apache Tribe? Do you feel that there's something there that would be beneficial to the States?

Mr. KNOX. In regard to relationship with the Federal Government?

Senator KEMPTHORNE. Yes, and the Endangered Species Act, with regard to the Endangered Species Act.

Mr. KNOX. Possibly. But I don't, I must confess, I don't fully understand the thrust of your question.

Senator KEMPTHORNE. OK, well, I think probably we'd both need to be further backgrounded in this statement of relationship. But just give me your perspective. Is the Endangered Species Act working in Montana?

Mr. KNOX. In some areas it is clearly not working too well. We have a situation, I think that's been referenced already regarding the grizzly in Montana. We have, in 1982, the recovery plan set goals for habitat, for numbers, and a number of other criteria. In 1986, those goals were met.

We still have the bear, not on an endangered classification, but on the threatened classification. So yes, I would say that it hasn't been working as well as it should. We feel that the Act does not provide, particularly in the delisting area, does not provide any degree of certainty that a species, once recovered, will be delisted. That is a major problem for a natural resource State such as Montana.

Senator KEMPTHORNE. Let me ask both of you this question, too. Mr. Harja referenced the Western Governors' Association would like to create a greater partnership with the Federal Government concerning the Endangered Species Act. Do you feel like as State representatives there is a partnership between the Federal Government and your State government on the Endangered Species Act?

Ms. SWANSON. There is, and it could be improved. It could be improved by giving the States greater authority, or at least the opportunity with greater authority, although our group felt that the Federal Government should always have the final say. Then the big issue of course is money. Our biggest fear is that you will give us all the responsibility and no money to do it.

Senator KEMPTHORNE. Would that be an unfunded mandate?

Ms. SWANSON. You might call it that.

Senator KEMPTHORNE. We've been working on that issue.

Let me ask, then, Mr. Schmidt, and we have a speaker box out there, so while I was out trying to get my throat back in order, I was listening to your comments. Do you have any recommendations for funding State and local roles, so that increased roles under the Endangered Species Act do not become an unfunded Federal mandate?

Mr. SCHMIDT. Well, certainly that depends on the work that needs to be done at the State and local level. But we would certainly need to have some resources available from the Federal pockets to do the more sophisticated work.

Senator KEMPTHORNE. Mr. Schmidt, how would you, if you could summarize, you're here representing a number of county governments. I know in Idaho we have a number of county governments where a great deal of the revenue comes from natural resource-based activities that are in their counties, from the timber receipts that go to the schools, for example. Is that something that we could characterize as happening across the country? What is the dilemma for counties with the current administration of the Endangered Species Act?

Mr. SCHMIDT. I think there's a couple of questions there. But certainly the counties in 49 States receive funding as payment in lieu of taxes for federally-owned properties within those counties, which in many cases is absolutely critical for operation of county oper-

ations. So that, we wouldn't want to lose that piece. But additional work on endangered species work, again, depending on what was required, our core budgets are stretched very thin. To enhance our operations we would certainly have to see some money.

The last part of the question again?

Senator KEMPTHORNE. Well, just in regard to the county. County officials and if you can summarize on behalf of county officials, their thoughts toward the current administration of the Endangered Species Act.

Mr. SCHMIDT. Well, of course, we have not had a very direct relationship with the Feds, other than being told that this was going to be done. What we would like to see is an inclusion of our stakeholders that we provide services to in the process of planning and making some of the decisions.

We would like to be a part of trying to bring innovative, constructive planning to solving these problems. I think there's a lot of information, a lot of local information and the skills involved in local government in bringing people together should be used in getting the very best decision possible.

Senator KEMPTHORNE. All right. Mr. Harja, the Western Governors' Association, how many States belong to that?

Mr. HARJA. There are 18 members, we include American Samoa and Guam and most of the States Nebraska and westward, except for Oklahoma. Texas is a member.

Senator KEMPTHORNE. OK. You have represented to us the position of the Western Governors' Association. Is that a unanimous representation? Is it a strong consensus? How strongly do these 18 Governors feel about the Endangered Species Act?

Mr. HARJA. Not all the 18 were involved in this. Nine or ten of them were. The 9 or 10 of them that were closely involved support this work very strongly. That isn't to say they have other issues to bring up on both sides of the debate. There are other issues that they would wish to raise. But they support this very strongly.

Senator KEMPTHORNE. OK.

Mr. HARJA. It's a formally adopted position of the Western Governors.

Senator KEMPTHORNE. On behalf of the Western Governors' Association, do you feel that there is an acknowledgement of a partnership currently between State government and the Federal Government in the administration of the ESA?

Mr. HARJA. I have sensed in the last, and from what I heard from my colleagues as we worked on it, one of which worked with this very Montana operation, those ideas came in, I have sensed a desire to make it a better partnership in the sense that the Fish and Wildlife Service folks are making an effort to come out and seek assistance. However, I think that needs to be fundamentally put in law.

Some of our proposals are that formally, the State or designee, like a local government or something, should be at the table and is required to participate. This makes it possible to make sure that the Federal Government is in a partnership, if you want to put it that way. The statement of relationship with a State is an interesting idea. The tenth amendment, since all the powers were left to

the States, I wonder about that, and they're sovereign States. But we would like, I think, to see that partnership made firm in law.

Senator KEMPTHORNE. Can you comment, one of the points that was raised to us in field hearings that we held, by different groups, this was a common statement really, regardless of their personal attitudes toward the Endangered Species Act, but that is, they did not feel that the expertise provided by State government through their resource managers was being either fully utilized or utilized at all. Your perspective on that?

Mr. HARJA. I would fully agree. There are examples that drove our process where the State was just ignored. State expertise, the personnel employed by the State knew this particular species, they were the experts on it, and they were just ignored. The statement was made that it was for "political reasons."

In Utah, we find that at least we're listened to. But there's no response. There's no indication of, you've got a good idea here or there. It comes back in a very paternalistic manner, that we know what's best. I have even described that in southern Utah, it's a bit of a passive-aggressive style that you get from the Fish and Wildlife Service. Just try to guess what we think is necessary, and when you get it right, we'll let you know.

In that sense, I don't find a partnership. Now, a lot of the other States have said, we can go down there, and we can work with them. I don't want to give you the impression it's all bad. Washington was very complimentary of the ability to have it there. So I don't know if it's personalties or whatever. But that's why we would like to make sure that at least you have to be at the table together.

Senator KEMPTHORNE. Now, you've referenced that you're working on some specific language. Again, in the timetable that you have proposed, there will be language that would deal with the suggested State role in the Endangered Species Act?

Mr. HARJA. One week from today we'll be done. As Chair, I'm going to make sure it's done.

Senator KEMPTHORNE. OK. Can you give me just perhaps a little further insight as to the direction that that will go, and will you be defining that there will be authority granted to the States?

Mr. HARJA. The language that I think I can mention is, not that I'm trying to keep it secret, per se, is the basis would be what I just described, that whenever a step is proposed in listing or recovery, the Federal Government would have to be, Fish and Wildlife Service would have to at least have the State agency there at the table. We agree, the Federal Government has to have the final say, at least the emergency powers of the Secretary are out there as a safety net. We're not trying to disturb that at all.

Beyond that, if a State wants to put together a program or assumption of the program, that would be part of it. Really I think what it is is our essential elements document translated into legislative language. If you read that, I think you'll get a drift of where we're going.

Senator KEMPTHORNE. OK, good.

Well, I thank all members of this panel very much for your testimony and your input. And, too, as with the other panelists, I would invite you to be resources to help us as we develop the language

of this. You are invited to submit to us any further comments that you have as we develop this, plus, we will be contacting you based on the issue, and again get your input as we begin to devise the actual language. So I appreciate your appearance here today.

All right, ladies and gentlemen, we will continue the hearing. I want to first of all thank all of you as panelists, but also thank you for allowing us to move you to this location. We had some conflicts with schedules which we had to resolve.

Introducing now our panelists, Mr. Mark Plummer, who's a Senior Fellow with Discovery Institute from Seattle, WA. Mark, nice to see you. Mr. Gregg Easterbrook, from Arlington, VA, welcome. Mr. Rob Irvin, deputy vice president, Center for Marine Conservation, Washington, DC. Robert, nice to see you again. Mr. David Mazour, assistant general manager, Central Nebraska Public Power and Irrigation, from Holdrege, NE.

With that, Mr. Plummer, if you would provide us with any opening comments that you have.

STATEMENT OF MARK L. PLUMMER, SENIOR FELLOW, DISCOVERY INSTITUTE

Mr. PLUMMER. Thank you for having me here, Senator.

A little more than a month ago, I spent some time out in your State attending a conference put on by Cecil Andrus, concerning the bull trout. I'd like to use some of the things I saw at that conference as a context for my remarks here.

The conference that former Governor Andrus put on was quite impressive. He had a large range, if not the entire range, of stakeholders. They seemed to be very committed to tackling the problem. What were they doing there? Well, normally what we hear in terms of saving endangered species, we hear about the economic issues. We hear how important species are as potential cancer cures.

Well, I don't think the bull trout is going to provide us with a cure for cancer or any other disease. We hear about the ecological reasons. Again, there are good ecological reasons why the bull trout is endangered. But I think if we were to somehow magically pluck it out of every stream in which it is still extant, we wouldn't have the States of Montana, Oregon, Idaho, and Washington fall into the sea.

So economic and ecological reasons will get us part of the way toward saving the bull trout. But they won't get us all the way. I think many of the people there were there for spiritual and moral reasons.

But what they weren't there for was, they were not trying to prevent a catastrophe, a world-ending debacle that would send us scurrying for the nearest biologist to tell us how to save ourselves. So losing the bull trout would be a tragedy. But it would not be a catastrophe. I think that difference tells us something about how science should be entering the Endangered Species Act.

Let me further that point by using an analogy. Suppose we were jogging down the shoulder of a road, and we suddenly spied a car on a straight line for us. What would our reaction be? Well, we wouldn't stop to ask ourselves what's the cost and benefit of further jogging down the road. We wouldn't suddenly decide that doing so

is our right, and we'll stick to it no matter what. Instead, a catastrophe looms, we'd find the shortest distance off the road.

Well, when we hear that losing species is a catastrophe, we're tempted to turn to science for just such a solution. Science is the only thing that will tell us how to save ourselves. There is a single goal that we should strive for, that is, to save species. But if losing species is not a catastrophe, then we lose the ability to single out that one goal, save every species, bring them all back to full recovery.

We instead find ourselves in cloudy waters. Where we find ourselves is in the difficult area of making tradeoffs. Saving species is a goal that we should commit public and private resources to. But there are other goals that sometimes come in conflict with that goal. So where do we draw the line? Where do we say to private landowners, for example, that your duty toward biodiversity has been fulfilled, and beyond that point, it becomes a public responsibility to save the species?

Well, science can tell us what the tradeoffs are. Biologists can outline plans for recovering a species, for preventing endangerment. Similarly, economists can tell us what the costs are going to be of saving a species or of not saving a species. But ultimately, the decision of what actions to take have to be made by policymakers.

Policymakers, be they political government bureaucrats charged with a specific duty, or some other type of official at the Federal, State or local level, have to decide that enough is enough, that the private duty has ended, and if we're going to get more species conservation, then we'll use public resources, perhaps, through the forms of incentives.

Now, does the current law draw the line in an area that our society finds comfortable? I think the answer is no. On a trip to Austin, TX, for example, where they're trying to save two endangered birds and a number of cave invertebrates, I had the chance to travel through the countryside.

There I saw something which was very disturbing. On a real estate sign advertising a piece of land for sale, I saw the phrase "no birds." In essence, the real estate company was advertising the absence of an endangered species as a premium for selling the land. What a perverse thing to see. Endangered species are an important part of our heritage, and yet the law has turned them into liabilities.

Well, does bring the line back from saving every species mean that we're going to consign many to extinction? I don't think that's the way we need to view things. As I said, there are actions we can take, some of which will give species a better chance, some of which admittedly will leave species in danger of extinction. That is the avenue that I think we have to take, decide where to draw the line and craft a new Endangered Species Act with that in mind.

Thank you.

Senator KEMPTHORNE. Mr. Plummer, thank you very much.

Mr. Easterbrook.

STATEMENT OF GREGG EASTERBROOK, AUTHOR, ARLINGTON, VA

Mr. EASTERBROOK. Mr. Chairman, thank you for having me. I'm the author of a new book that says that most environmental trends in the western world have become positive, and as a result, we're all going to soon be environmental optimists.

In the spirit of bipartisanship, I can tell you that I have achieved a bipartisan consensus on that book. I got almost everybody mad at me very quickly.

Senator CHAFEE. Mr. Easterbrook, you've got to speak a little bit louder if you would, and if you could slow the pace a cadence.

Mr. EASTERBROOK. It's a Yankee trait, Senator, you should know it.

Senator KEMPTHORNE. What did Senator Chafee say?

[Laughter.]

Mr. EASTERBROOK. In the spirit of bipartisanship, I can tell you that I've gotten a bipartisan consensus on my book very quickly by getting everybody mad at me. Generally, from people from the left of the spectrum, I've heard people angry that I say that environmental trends have become good. Generally, from the right of the political perspective, I've heard people angry at me because I say that the reason they've become good is because we have environmental regulations that are successful in the United States, and that they are strong and good and normally good for the economy.

It strange to think that if you have a good message in current political debate that's what's controversial. If any of you have literary aspirations, I strongly urge you to write a pessimistic book, because it will go over better in the current environment than an optimistic book. Yet I think that eventually environmental optimism will sink into American culture, and will be central to understanding of the Endangered Species Act. I will cite an example from Secretary Babbitt, who you had here this morning.

Two weeks ago, in order to defend the Endangered Species Act, Secretary Babbitt went to New York City and held a press conference at the top of a skyscraper where peregrine falcon now live. He used that as a symbol of the recovery of the peregrine falcon, which has been very spectacular, of the ability of an endangered wild species to co-exist with artificial life. There's nothing more artificial than life in Central Manhattan. In fact, Secretary Babbitt said it was a symbol of optimism in a new era of hope for the environment.

Well, I take pride in saying that my book, which I know Secretary Babbitt has read, begins by describing peregrine falcon living on skyscrapers in Central Manhattan, and describes this as a symbol of hope and a renewal of optimism about the environment. There were sentences in Secretary Babbitt's statement that seemed hauntingly familiar to me, I'm pleased to say.

Senator KEMPTHORNE. What are you suggesting?

[Laughter.]

Senator CHAFEE. A little plagiarism?

Mr. EASTERBROOK. No, that's not plagiarism, that's life imitates art, which is a much more pleasurable experience. I'm very happy to see it. And I think there will be more of that imitation in the future. Because I think the notion of optimism will catch on.

But the reason we should have environmental optimism is because we found that we can have strong environmental regulations that work in this country. In my book, I called the Endangered Species Act a stunning success, one of the great achievements of modern environmental theory.

Of course, the Act has economic problems. But the main thing that the Act has achieved is the preservation of the very group of species that were considered most likely to fall extinct. When someday we look back on the last 25 years of environmental history, we will consider it tremendously exciting that we were able to preserve such species at a time when the law was rudimentary and economic relationships with nature were not well understood.

I think we've had in the Endangered Species Act, for all its faults, a proof of concept experiment that shows that nature and a highly developed society that has high resource consumption like ours can co-exist. Now, we have to move on from that to a better structure for the Endangered Species Act, because there is unanimous agreement that it's current economic and legal structures are no longer satisfactory.

But the Act's success has proven something very important, that people and wild species can co-exist in a developed society. I think that's a wonderful piece of information for the American public. It shows America at its best, the ability of this country to take on a seemingly unsolvable problem, the protection of wild species, and very rapidly achieve success. It's something we should be excited about.

As to what we should do with the Endangered Species Act as we restructure, I'll give you two very brief ideas. As we sat here and listened this morning, first we heard Secretary Babbitt describe habitat conservation plans as a way to escape from the morass of an Endangered Species Act listing. The interesting thing is, when you talk to local officials and developers about such plans, they're always happy with the plans themselves. They're not perfect, but the plans make people happy.

We then heard scientists say that what we should really protect is habitats, not species. That's the root of the problem. I think as your committee considers changes in the Endangered Species Act, you should look at conversion of the basis of the Act from species protection to habitat protection. It's not only more promising as a scientific goal, I think it's more promising economically as well.

Finally, I'll say that a lot of the controversy over the Endangered Species Act is really proxy for other issues—for property issues, for fear of excess development. I share a little bit of both feelings. In the United States there's tremendous constant momentum toward more development. And there should be, we all have an economic stake in that.

But, there is no regular momentum toward more preservation. Preservation happens on a sporadic basis, when there's an Endangered Species Act ruling or when Congress passes a law. I think we could create economic incentives for pure preservation with what I call the two for one plan, which I describe in my testimony, and so I won't go over it here.

By requiring that 2 acres of land be set aside for each new acre that's developed, we could generate an ongoing momentum for

preservation in the United States that would be economically attractive and resolve many of the objections to the Endangered Species Act.

Thank you.

Senator KEMPTHORNE. Mr. Easterbrook, thank you very much.

Mr. Irvin.

STATEMENT OF ROBERT IRVIN, DEPUTY VICE PRESIDENT FOR MARINE WILDLIFE AND FISHERIES CONSERVATION, CENTER FOR MARINE CONSERVATION

Mr. IRVIN. Thank you, Mr. Chairman. In addition to my own organization this morning, the Center for Marine Conservation, I'm pleased to testify today on behalf of a number of other environmental groups, the Defenders of Wildlife, the Environmental Defense Fund, the Fund for Animals, Greenpeace, the Humane Society of the United States, National Audubon Society, Sierra Club, the Wilderness Society, the World Wildlife Fund and the Endangered Species Coalition, which consists of more than 200 environmental, civic, religious, health, business, and labor organizations from across the Nation.

Unfortunately, I don't have my own book to plug this morning, but I do have a flower. And when you return to your office, each member of this committee will have one of these waiting for them. This is a rosy periwinkle. This plant produces a substance, two substances, actually, Vincristine and Vinblastine, which achieve a 99 percent remission rate in children suffering from leukemia. Mr. Chairman, this little flower saves lives.

Fortunately, this flower, this plant, is not endangered. It's grown in nurseries. Its habitat in Madagascar has been virtually wiped out. But this plant is a symbol, it's a symbol of the values that the Endangered Species Act protects.

I wish I could have brought a Houston toad for you. It produces an alkaloid that shows promise for treating heart disease. Or even a primrose, we have three species of primrose that are endangered that produce fatty acids that are useful in treating arthritis. But those species are endangered, and the Endangered Species Act protects them, protects their habitat and protects the potential for discovering miracle cures for diseases that afflict human beings. And in a very real sense, protects the keys to our own survival.

Mr. Chairman, for 22 years the Endangered Species Act has worked and worked well, ever since it was signed into law by President Nixon in 1973. I think the National Research Council has really summed it up very well in their report where they say, "The ESA has successfully prevented some species from become extinct. Retention of the ESA would help to prevent species extinction."

As the Department of the Interior has reported to Congress, 270 threatened and endangered species are either stable or improving under the Act's care. These include species like the bald eagle in Idaho, and one of Mr. Plummer's favorite species, the American burying beetle on Block Island in Rhode Island.

The Endangered Species Act has achieved this success while balancing the Nation's other needs. My friend Michael Bean is fond of saying that the amazing thing about the Act is not how many conflicts there have been, but how few there are. Between 1979 and

1993, out of more than 150,000 Federal and private projects reviewed for conflict with endangered species, 99.9 percent went forward, either as originally proposed, or modified in some fashion to accommodate the needs of the species and society's other needs.

Mr. Chairman, this is a law that works. Nevertheless, it can be improved. It can work better for wildlife and for people. I want to suggest some ways it can do that. First, the Act should do a better job of preventing species from becoming endangered in the first place. We should head off the train wrecks before the trains leave the station. The Act should contain express authority to develop preventive programs for species before they become endangered, and to protect imperiled habitats.

Second, the Act should do a better job of recovering species, getting them off the list. That's the goal. We should have recovery plans developed within 18 months. They should contain scientifically-based targets for recovery and delisting.

These plans should be developed with input from Federal, State, tribal and local governments, scientists, and the public. They should emphasize actions that will give the most progress toward recovery while also reducing costs. They should provide guidance to private landowners about what actions are likely to result in violations of the Endangered Species Act. And they should be prepared on a multiple species ecosystem basis whenever possible.

Third, Mr. Chairman, the Endangered Species Act should provide greater incentives for private landowners. Secretary Babbitt mentioned some of those, estate tax deferral, using existing stewardship programs, are all good ideas.

And fourth, it should be easier for Americans to get answers about what their responsibilities are under the Act. Each field office of the Fish and Wildlife Service should have a property owner and community assistance officer whose job is to provide answers, respond to complaints and give assistance to landowners.

Mr. Chairman, the Endangered Species Act represents our Nation's commitment to ourselves, our children, and the world, that we are going to leave them a world as rich in plants and other wildlife as the one we enjoy. It's a very important promise, a promise that must be kept.

Thank you, Mr. Chairman.

Senator KEMPTHORNE. Mr. Irvin, thank you very much.

Mr. Mazour.

STATEMENT OF DAVID F. MAZOUR, ASSISTANT GENERAL MANAGER, CENTRAL NEBRASKA PUBLIC POWER AND IRRIGATION DISTRICT, HOLDREGE, NE

Mr. MAZOUR. Thank you, Senator. It's indeed a privilege for me to be here and be able to present some of our thoughts on the Endangered Species Act, and actually to sit on a panel with a couple of authors. It's an opportunity that I thoroughly treasure.

I'm here today on behalf of the National Endangered Species Act Reform Coalition. You have my testimony that's been circulated in advance. I have a 5-minute version of that. I've decided not to use that 5-minute version, and rather than talk from that, I'd like to share with you some of the experiences that we're having in Nebraska in the field with regard to the Act itself.

Before I do that, though, I'd like to make it abundantly clear that the coalition that I'm representing here today is not interested in gutting the Act. They are truly seeking to find ways to better improve the Act for the protection of species, and make it more people friendly. Quite frankly, the public is losing confidence in the Act and the way it's being implemented. If some corrections aren't made, the Act could actually destroy itself.

We need to wrestle with the question of what's going wrong. And my experiences in the last 8 years, as I've worked for the Central Nebraska Public Power and Irrigation District, is we've found some instances where the Act has actually become an obstacle, in my view, to proper resource management and protection of species. I'd like to cite three examples, and there are more.

But the first example that comes to mind is an issue with regard to least terns and piping plovers on islands in the river versus sand pits. In this case, the wildlife biologists have suggested that they wanted to see the tern and plover recovery from islands on the river, and the districts and our biologists had looked at the potential of nesting and fledgling success on islands. We developed programs to really promote and work with the recovery of terns and plovers with the man-made sand pits. We've had much greater success. I think that that needs to be recognized.

A second example that I'd like to cite is our efforts in water conservation. We've been encouraged to enter into water conservation programs. As a matter of fact, we've received a half a million dollar grant from Secretary Babbitt to promote some conservation activities, to get some conservation on the land, and just recently, we received word that we received an award for the activities in water conservation. But yet we're finding some of the provisions of our section 7 consultation under the Endangered Species Act is actually limiting our ability to develop some of those conservation measures that are important.

The third item that I'd like to make mention is that the three States, Nebraska, Colorado, and Wyoming, and the Interior Department are working on a basin-wide solution to take care of endangered species issues in the Platte River in Nebraska. One of the provisions that the States of Wyoming and Nebraska have insisted on is that the States be equal partners as they develop that basin program.

Unfortunately, the interpretation of the Act is that that equal partnership is not allowable under this basin-wide program. So, in that case again, it has actually, in my view, presented somewhat of an obstacle to protection of species.

I've wrestled with why do these things happen, and why is the Act out of balance, as several of you have mentioned. It seems to me that there's a fundamental problem with the Act the way it exists today and the way it was written. I look at it as a concentration of power without the appropriate checks and balances that really result in some bad decisions being made in the field.

It's, I think there are several things that can be done to help put the Act back into balance, and several of them have already been mentioned. I think the peer review, the issue of peer review of the science and a more rigorous testing of the ideas of the wildlife biologists, those kinds of provisions should be incorporated into the

Act. I think the greater involvement of State and local governments in conservation plans could be an important process to improve the Act.

Finally, I think sunshine, I think there needs to be more sunshine brought into the process so that the people have a chance to live on the land, have a chance to participate in the development of the plans, and make comments on the recommendations of the wildlife biologists. Right now, the plans are prepared, what I see it, as from a black box. And out comes the result, and you live with the results.

In conclusion, I'd like to say that as you look at reform to the Act, I would ask that you look at it from a long-term perspective, that in order to pass the test of time, you'll need to provide balance to the Act, not destroy the Act, not destroy the purposes for which it was created, but to find ways that it can work better, do a better job more efficiently with the resources that we have available. That will be quite a challenge. But we'd be happy to help you out in any way we can.

Thank you.

Senator KEMPTHORNE. Mr. Mazour, thank you very much.

Senator Chafee, if you'd lead off with the questions, please.

Senator CHAFEE. Thank you, Mr. Chairman.

Mr. Mazour, you said there have been several suggestions made here, and you yourself made some suggestions in connection with the greater local involvement and sunshine. What do you think about the proposal that we try and involve greater incentives, and indeed there have been suggestions that we modify the inheritance tax laws, so that if somebody has encumbered their land in connection with an endangered species, that they'd get some reduced value of it, or reduced inheritance tax?

Another one being the so-called safe harbor in which if you, I don't know whether you were here when Secretary Babbitt was describing it, but safe harbor essentially works that if you've committed yourself to, a portion of your land has an endangered species on it, that you delineate that part of it. And if the endangered species spreads out in the other parts of the land, that's OK.

You can carry on as you wish in connection with your activities, regardless of whether the endangered species is there or not. What do you think of those ideas?

Mr. MAZOUR. They both appear to me to be very sound principles and good ideas.

Senator CHAFEE. The first one involving the inheritance tax, the State valuations, would have some problems probably, just because it would then get into the tax code and where do you stop, getting agricultural side of it, if somebody is following certain farming practices that are beneficial to the long-term value of the land, you give that person a break, one of the problems that would come up.

Mr. Irvin, I was interested in what you had to say, you certainly are a cheerleader for the Act. We ought to put you on more panels. I thought the facts you had were good. Matter of fact, it's my intention to plagiarize some of them. I hope you're accurate in all of them.

Mr. IRVIN. I'm flattered, Mr. Chairman.

Senator KEMPTHORNE. You've never said that to me, Mr. Chairman.

[Laughter.]

Senator KEMPTHORNE. I do have some things I could incorporate in your speeches.

[Laughter.]

Senator CHAFEE. Mr. Mazour says something that I'm not sure I agree with. But maybe it's so. He says the public is losing confidence in the way the Act is being implemented. I'm not so sure, obviously I don't come from a rural State, but I come from a State where we have endangered species, we have the plover, for example. I guess you talked about that, Mr. Plummer, did you? You talked about the plover?

Mr. PLUMMER. Not the plover specifically, no.

Senator CHAFEE. Somebody mentioned that. Whoever. In any event, you mentioned the beetle on Block Island. I, like all Senators, conduct town meetings, listen-ins, whatever one wants to call them, and I must say that the Endangered Species Act is not raised.

So it's not, I don't find it in my State now, my State is an eastern, heavily populated State, so it's not the same as, for instance, the chairman's State or others. So I'm not going to gainsay what Mr. Mazour has said. But what do you find, Mr. Easterbrook? Do you find that the public is losing confidence in the way the Act is being implemented?

Because we had these statistics that show, I guess you gave them, did you, that very, very rarely do you get to a confrontation, X number, what did you say, 99 point something, I got mixed up between your two testimonies.

Mr. IRVIN. Senator, I'd be happy to respond to that.

Senator CHAFEE. Go ahead.

Mr. IRVIN. First of all, while we hear that there is a lot of discontent with the Act, the polls show us otherwise. Last year, the Times Mirror syndicate did a survey in which 77 percent of Americans said that they felt that the Endangered Species Act regulations were either just about right or not strong enough. Only 16 percent said they went too far.

Now, clearly, there is discontent with the Act in certain areas of the country. As I said in my statement, the Act can be improved. It can do a better job of working with landowners. And you heard Secretary Babbitt say that this morning.

But there is not a national consensus to undertake the kinds of reforms that are being proposed by some in this Congress, the kinds of reforms that would in fact gut the Endangered Species Act.

Senator CHAFEE. Yes, I'm reluctant to label them as reforms. That has a nice tone to it. But the chairman and I were present at a hearing that we held in Roseburg, OR. There we drew 1,200 people. Now, I've been in politics a long time, and I've never drawn 1,200 people to anything. But they were all there, you had to have an axe to get in, because it was pretty much a woodsman crowd. And I can testify there, there was distress in that section of the country, as you mentioned, with the Endangered Species Act.

Is my time up, Mr. Chairman?

Senator KEMPTHORNE. It is, Senator, but if you'd like to continue, that's fine.

Senator CHAFEE. Well, so, Mr. Plummer, I thought the point you made about how tragic it is to see a lot advertised in Texas with the come-on being that there are no birds there, now obviously, something's not functioning right with the Act, when it's an inducement to buy some land because the birds are not there.

Now, again, I think we can get back to the so-called safe harbor provision that the Secretary was talking about earlier today. That might be a solution to the particular solution you mentioned in Texas, that if the developer will, I don't know if we can get to the situation where, I think Mr. Easterbrook said 2 acres set aside for every acre developed.

That's a little much, I suppose. The developers would think so, I'm sure. Nonetheless, I think again, you're talking about a place where, a situation where the safe harbor might well work, where the developer would protect a certain amount of the land, and the rest would be free for development. What do you think of that?

Mr. PLUMMER. Well, I think that would get us part of the way there. What would be wonderful, if perhaps a bit too much to hope for, is to drive through the Austin hill country and see signs which said, birds, rather than no birds. Now, we can make any reference to birds go away by creating safe harbors, by creating exceptions for small landowners.

But I think a question we need to tackle is, how can we in fact turn these things around. I don't find anyone who says species are trivial, species are ridiculous, species are worthless. I think most people recognize there is a wonderful natural heritage in biodiversity.

Senator CHAFEE. So what's your suggestion, your remedy?

Mr. PLUMMER. I think the remedy is two-fold. First of all, we have to look at our expectations built into the law for private landowners or public agencies. We have to tackle the question, have we drawn the line too high. Have set it so high that in fact they are much better off advertising no birds, doing whatever it takes to get rid of an endangered species problem, than they are dealing with the law.

If we find that in most cases, yes, the law is so burdensome that we've turned our social asset into a private liability, then perhaps it's time to reduce our expectations for what private landowners should have as a duty.

That will create a vacuum. If the law doesn't force private landowners to conserve species, where does the conservation come from? That's where I think incentives can fill the gap. We have to turn what has been a private duty into a public responsibility. We have to take the incentive programs that are being bandied about and we have to get serious with them.

We have to show that the public sector is willing to help private landowners, public landowners, whatever, by coming forward with money, to put it quite frankly. I realize that's a difficult package to sell in today's Congress. But I think that twofold approach is what could get no birds off the sign and perhaps a few sprinklings of birds being advertised as part of the property.

Senator CHAFEE. Well, my time's up, Mr. Chairman. I'll come back later.

Senator KEMPTHORNE. Senator Chafee, thank you very much.

Mr. Plummer, there was a discussion earlier on one of the panels concerning extinction and the rate of extinction. I recall in your book, and in fact I think this was referenced, you did a comparison, or you discussed some of the different view on that rate of extinction. Could you just address that issue?

Mr. PLUMMER. Well, if one is to read our book carefully, and I would urge anyone who buys it to read it carefully, you'll note that what we're tackling is the question of how many species are going extinct hour by hour as we speak. What we took on was the question of, is there a way of predicting exactly how many species have gone extinct, for example, in the 4 hours that these hearings have been conducted.

As scientifically hopefully literate journalists, we went through the scientific articles, the scientific statements and found good reasons for questioning the ability of science to make such an exact prediction.

Now, we were not disputing the authority of scientists to make predictions about extinctions that are likely, perhaps likely to occur now, definitely likely to occur in the future. What we are wondering is why do we so often see these very exact predictions which give extinction crisis the nature of a catastrophe, that as we speak, so many species have disappeared from the face of the Earth.

That's what we are critical of. We acknowledge in our book, and we acknowledge it just as some of the scientists did, that there is no credible ecologist who disputes the fact that extinction is a problem and it's growing every day. Where we ran into trouble was boiling it down to such exact predictions that we would have a tally of the extinctions happening day by day.

Senator KEMPTHORNE. OK, I appreciate that.

Mr. Irvin, with regard to the plant that you have brought forward, as you indicated, it contains some very meaningful properties that help us with medicine. It is not an endangered species?

Mr. IRVIN. That's correct.

Senator KEMPTHORNE. If it were, can you tell me, do we have any program to prospect among the plants and animals on the endangered species list for medicinal or other important properties, just in case they may go extinct?

Mr. IRVIN. We do, Senator. The National Cancer Institute in Frederick, MD, is conducting a comprehensive screening program of both plant and animal materials gathered from all over the world, including materials in this country. Two years ago, Dr. Thomas Eisener testified in front of this committee on the Endangered Species Act.

He brought with him a sample of an endangered plant from Florida that he has been studying, the Florida scrub net. Now, that plant was actually screened once to see if it had any valuable medicinal properties, and nothing was isolated. As part of this program in Frederick, MD, it has been screened again. An anti-fungal agent has been isolated out of that.

What's the value of an anti-fungal agent? People who are being treated for cancer and are undergoing chemotherapy are vulnerable

to infections, fungal infections. An anti-fungal agent may help those people. That is an example of a species that is on the endangered species list that is being tested, and in fact we missed it the first time. I think that's a very graphic illustration of why it's so important to preserve plants and wildlife. We don't know what we're losing.

Senator KEMPTHORNE. Was the Pacific yew ever listed?

Mr. IRVIN. No, the Pacific yew was not listed. It was petitioned for listing. It is of course an inhabitant of the ancient forest ecosystems of the northwest, and a side benefit of the protection of the northern spotted owl is the protection of that habitat for the Pacific yew and a number of other species.

Senator KEMPTHORNE. If it had been listed, how difficult would the process be to go through to then determine any medicinal value or other values?

Mr. IRVIN. If it had been listed, scientists who are studying it would have been eligible to apply for and obtain a permit under section 10(A)(1)(a) of the Endangered Species Act, which specifically authorizes permits for the taking of endangered species for scientific purposes.

Senator KEMPTHORNE. Would, for example, Weyerhauser have had to obtain permits to grow Pacific yews in captivity if it was listed?

Mr. IRVIN. I don't know the answer to that, Senator, whether they would or not. Certainly the drug research companies, I believe it was Squibb and Eli Lilly, were able to use the Pacific yew and isolate taxol from it, and now it's being produced synthetically to treat ovarian cancer.

Senator KEMPTHORNE. You referenced the Houston toad.

Mr. IRVIN. Yes.

Senator KEMPTHORNE. Which is listed, as I understand.

Mr. IRVIN. It is endangered.

Senator KEMPTHORNE. When did we discover the alkaloids in the Houston toad? Was it before it was listed or after?

Mr. IRVIN. I can't answer that.

Senator KEMPTHORNE. Do you know if any other toads, especially those closely related subspecies or species, have similar alkaloids?

Mr. IRVIN. I don't know the answer to that, Senator.

Senator KEMPTHORNE. Mr. Mazour, in your experience, have you found at time that perhaps in dealing with wildlife managers that they may or may not have good economic data and reasonable alternatives available when they need them?

Mr. MAZOUR. Yes, that's true. A lot of times, they need to address and look at some additional disciplines. The economic data is not part of what they consider when they make their recommendations. That's true.

Senator KEMPTHORNE. Can your district provide some of the economic data and alternatives needed?

Mr. MAZOUR. We do, yes. We try and talk to them about some of the economic considerations with regard to their recommendation. Let me talk specifically about the islands, the tern islands versus the sand pits as an example. By protecting the species on the islands, we found that for a lot less money, you get a lot better protection. In 1994, we fledged 154 birds off of the protected sand

pits, when only one was fledged off of the islands. The islands were at the recommendation of the Fish and Wildlife Service.

Senator KEMPTHORNE. So you have provided this information. Generally, how has it been received, and has it been utilized?

Mr. MAZOUR. Well, there seems to be a tendency to not want to recover species on man-made facilities. Just an interesting sidebar, in the National Geographic that recently wrote an article on endangered species protection, three of the pictures in here came from our Lake McConahey, which is a man-made facility. The bald eagles and the least terns and actually the American-burying beetle were all located adjacent to man-made property. It's a recognition that the wildlife biologists need to make, that man-made facilities do provide habitat for species recovery and protection.

Senator KEMPTHORNE. All right.

Mr. Easterbrook, it was noted from our first witnesses, and really has been something discussed throughout the course of these hearings, of strong suggestion for the need of greater role for the States and local communities to play in the Endangered Species Act. Do you agree with that, and if so, how would you proceed?

Mr. EASTERBROOK. Generally, Senator. You need some Federal over-arching law to make State behavior reasonably consistent. But beyond that, one reason I like habitat conservation plans, and I think Secretary Babbitt should give himself more credit for doing them so well, is that they engage State and local decisionmaking. Nobody likes to be handed a notice by a Federal judge that says, "do this." All Americans naturally bristle against that.

When you do a habitat conservation plan or anything similar to that, the first step is to engage the people who are actually affected by the plan, State and local officials, builders, property holders and so on, and say to them, OK, here's our problem, how do you suggest that we solve it. Americans take well to that sort of approach.

So either you change the language in the statute to include more State decisionmaking under the existing regime, or as I would suggest, you move the overall program more toward habitat conservation plans and away from species. Either way, if you engage local people, especially State and local officials and property holders and the decisions, it's especially important that at the end of the process, you get local support for the result.

I don't claim that habitat plans are perfect, of course. They have their foibles. But in most cases, when you go and talk to local property holders and local officials who have been involved in habitat conservation plans, even in high cost-of-living areas like southern California, they usually like the plans. It's because they've been involved in their preparation.

Senator KEMPTHORNE. Do all members of the panel agree generally with that statement, that when you have greater responsibility and roles for State and local governments?

Mr. IRVIN. I agree that there is a greater role for States to play. I share the concern that was expressed, I believe by Secretary Babbitt, earlier that some States have indicated very clearly that they don't want to play a role in it, Arizona being the prominent example.

With regard to habitat conservation planning, I agree with Mr. Easterbrook. It really provides an opportunity to have local input

and involvement in these endangered species conservation decisions. What has been missing is adequate funding. One of the provisions that was in last year's bill introduced by Senator Chafee and Senator Baucus would have established a revolving loan fund to help finance habitat conservation plans at the State and local level. That's an important improvement to the Act.

Senator KEMPTHORNE. Mr. Mazour, do you think that scientists that review, as peers, the work of other scientists should be compensated for their efforts?

Mr. MAZOUR. I think that would be appropriate.

Senator KEMPTHORNE. We had a hearing recently discussing that. Among the scientists, how it's difficult sometimes to participate in that role of peer review.

Mr. MAZOUR. I haven't really thought so much about the financing of it, I just feel it's urgently necessary, whoever pays for it. Because we need to get some truth in science, and we need to get better science, and that's one way of ensuring that.

Senator KEMPTHORNE. I see some of our scientists are still here. I'd be interested if you could at a later point perhaps pen me a note on your thoughts, how do we set up meaningful peer review process among those scientists that would participate.

Yes, Mr. Mazour.

Mr. MAZOUR. One of the frustrating things that we've found in our work is where we've had scientists sit across the table from Fish and Wildlife wildlife biologists, and where we feel that our work made more sense than theirs, and we felt if you look at it logically and realistically, that our recommendations were better than theirs. But in the final analysis, they just didn't count. They didn't matter. Because the control and the power and the last say always rested with the agency biologists. I think that's why it's extremely important that we find a proper way of doing that.

Senator KEMPTHORNE. All right, thank you.

My final question for Mr. Plummer. Dr. Clegg had earlier made the statement that sound public policy often depends on sound science. I think a great deal of your book dealt with this, and how you take science and then you enter into the public policy mode to make decisions. Would you just address that?

Mr. PLUMMER. Well, I think what we've just heard addresses that in part. Most of the conflicts we hear about over the Endangered Species Act are battles over listing, are battles over recovery action, are battles over whether HCPs are scientifically sound or not.

In other words, the Act's policy goals are so inflexible that all of the conflict that is there, we shouldn't be afraid of conflict, that's part of what we're trying to resolve, all the conflict gets shoved into the scientific arena. So we worry about whether scientists are being honest. We worry whether scientists have hidden agendas.

What we need to do is have more flexibility in the second stage. We need to have flexibility which recognizes the tradeoffs that are forced on us by finite resources. So we can have the scientists first of all address what should be a purely scientific question, is this species endangered, what endangers it, what actions will provide it with what level of recovery. Those are scientific questions.

Speaking from my own scientific discipline of economics, we need to bring economists in. What is it going to cost us to take that action which will achieve that level of recovery? After the scientists have done their work, we need to turn it over to the policy arena. We need to have basic duties, I believe, which will ensure that we do something, and do more than the lip service that afflicted the past.

But we need a range of possibilities, so we can decide, sometimes we've done enough for this species. Beyond that, we're going to have voluntary efforts, beyond that, public money will be used, not private resources. That's the range that I think needs to be built into the Endangered Species Act.

Senator KEMPTHORNE. All right, thank you very much.

Senator Chafee, further questions?

Senator CHAFEE. Thank you, Mr. Chairman.

I just want to explore a little bit more what Mr. Plummer's saying. Do I understand, as you know, the endangered species law now says that if a species is endangered, we'll save it. That's what it is. There's no options there. What we do to save it, there are a variety of approaches, how far we go. But are you saying that before we put something on the endangered species list, we list it, that we first go through sort of a cost-benefit analysis?

Mr. PLUMMER. Before listing, no.

Senator CHAFEE. Would you keep the law as it is now, if it's endangered, save it?

Mr. PLUMMER. No, I would not.

Senator CHAFEE. OK, what would you do?

Mr. PLUMMER. I would do the following. I would have a first stage of science. Science tells us exactly what endangers a species, whether it's endangered, we create not a list but an encyclopedia. Things like the National Biological Survey need to be expanded greatly. We are too often operating in the dark.

Beyond that point——

Senator CHAFEE. I'm not sure, I'm not contending with you. I'm just not——

Mr. PLUMMER. Beyond that point, we then need to say, what are we going to do now. The Act's full goal is to not just stop the forces that endanger them, but stop them and bring them back to full recovery. In other words, the goal of the Act is to make the Act go away. If you look at the Act's history, it's been a dismal failure for achieving that highest goal.

So what position does that put us in? That record puts us in a position where we are guaranteed to fail. No activity then becomes anything but tainted. All landowners who threaten a species have to operate under the cloud of the Endangered Species Act. What I'm asking for is a recognition of reality.

Senator CHAFEE. You've heard the statistics here of Mr. Easterbrook and Mr. Irvin about the percentage of challenges and problems, conflicts, if you would, of the total, that end up in some kind of a judgmental situation, not a judgmental situation, but a conflict. And it's tiny.

Mr. PLUMMER. It is indeed tiny. So are the number of species that have recovered.

I would argue that probably the number of conflicts is too small if we're serious about the goal of recovering species almost no matter what the cost.

Senator CHAFEE. Well, I guess my question to you specifically is, what would you do? The law now says we'll recover them all. Now, what would you say?

Mr. PLUMMER. I would say that recovery is not a black and white affair, just as saving a species is not a black and white affair. We don't have a simple dichotomous choice. Save a species or consign it to oblivion.

What we have to recognize is that we're going to take chances with species. Right now, even scientists have sort of signed off on a certain percent chance of extinction over a certain period of time. They say, well, 99 percent chance of survival over 100 years. We scientists will accept that.

Well, my response is, that's not the scientist's job. It's the policymaker's job. Perhaps that last 4 percent, going from a 95 percent chance to a 99 percent chance, is so expensive that as a society we're going to say, we're just not going to bear it. So what I'm asking is that we accept a range of possibilities. Now, how to translate that into legal language, I'm not sure.

Senator CHAFEE. But to do that, if the cost of going from 95 to 99 is x dollars, therefore we don't want to, so inevitably you get into a cost-benefit dollar situation, don't you?

Mr. PLUMMER. I don't think you can ignore costs. I would never want to see the situation where a cost-benefit analysis dictates the outcome. But right now, we don't recognize with the law the tradeoffs that exist. We pretend they're not there, and yet they happen anyway.

Senator CHAFEE. Well, regrettably, I'm due at a meeting at 1:15, and it is now 1:16. So Mr. Easterbrook, you were——

Mr. EASTERBROOK. Yes, I would like to disagree with my co-conspirator Mark on one key point, although I accept most of his analysis about private property rights. I think it's wrong to say that we have had very few recoveries from the Endangered Species Act. Yes, there have only been seven since 1973. Two spectacular exceptions are the California gray whale and the American bald eagle. Fantastic stories of recovery.

Now, when I mention those, people always say, aha, but they were not covered by the Endangered Species Act. They were protected by special acts of Congress passed in the late 1940's and early 1960's, and that's true.

But my argument is that in effect, those species received the benefits of the Endangered Species Act 20 to 40 years sooner than current species have. That means they've had multiple generations more to recover than current species have. The stipulations of those special acts of Congress do not differ significantly from the Endangered Species Act. I think if we come back in 20 to 32 years, when the same period of time has passed for the other species we have listed today, we'll see them as recovered in most cases and off the list, too.

Senator CHAFEE. Well, on that enthusiastic note, we'll have Duncan back here then, he'll be a scientist, maybe, sitting at this table.

Senator KEMPTHORNE. Thank you, Senator Chafee, and I want to thank all the members of this panel and everyone that testified today. Again, all of this information is going to be utilized as we now rewrite in the reauthorization of the Endangered Species Act. Thank you very much.

This hearing is adjourned.

[Whereupon, at 1:17 p.m., the subcommittee was adjourned, to reconvene at the call of the Chair.]

[Additional statements for the record follow:]

STATEMENT OF BRUCE BABBITT, SECRETARY OF THE INTERIOR

I would like to thank the members of the subcommittee for the opportunity to discuss the Endangered Species Act (ESA), one of our nation's most important conservation laws. The stated purposes of this law are relatively simple but far-reaching—to conserve the ecosystems on which endangered and threatened species depend and to provide a program for their conservation, including their recovery. Despite the high level of public support for the Act, the subject of its reauthorization seems to be generating much more heat than light. Recent media coverage has focused almost entirely on either the Act's vaunted success stories (such as bald eagles, gray whale, peregrine falcon and whooping cranes) or on reported "horror stories" (e.g. accounts involving the California fairy shrimp and Stephens kangaroo rat). While some of these stories are valid, others are clearly exaggerated or false.

What has *actually* been happening over the past 2 years, much less publicized, is a quiet revolution in the implementation of the Act. This 1S a revolution brought about by this Administration in an attempt to do something that has not been accomplished in the past 12 years—to make the Act work better for both species and the public. As you are aware, yesterday the President announced an Administration proposal to exempt 95 percent of American homeowners from any restrictions on their property imposed by the Endangered Species Act. President Clinton recognized that home ownership and the opportunity for homeowners to use their property free of unnecessary restrictions is essential to the fulfillment of the American dream. As announced, the administration's proposal would essentially eliminate restrictions related to the presence of threatened species on tracts of land used for single family residential homes and other activities that disturb five or fewer acres of land. This represents a big step toward fairness and certainty for American homeowners while protecting threatened wildlife. I believe this proposal demonstrates that we are committed to common sense reform of the ESA, not the reckless rollback of safeguards that some are advocating. Cooperation with landowners, big and small, States and tribes, is the best way to ensure both the health of wildlife habitat and sustainable economic development.

America has been the world leader in conservation since the days of Teddy Roosevelt. We were the first country to establish national parks, national forests, and national wildlife refuges. We also led the way with landmark laws to conserve our nation's air, water, and other vital resources. In 1973, Congress continued this tradition by enacting, by a nearly unanimous vote, the Endangered Species Act. This remarkable law, widely regarded as the world's most important wildlife conservation statute, reflects the deep respect and appreciation Americans hold for our precious natural resources, as well as an understanding that the fate of people and wildlife alike is linked to the well being of the environment around us. In a sense, the Act is a measure of the planet's life support system, and therefore our own. It serves as an emergency protection for the diversity of animals and plants essential for many purposes, most notably medicine, agriculture, and ecological resilience. As the rate of species loss rises, so do the stakes for all of us. Extinction is not a controlled experiment, but an irreversible process. Put another way, endangered means that there is still time, but extinction is forever. The Act is our safety net.

Our key objectives, which are found within the administration's March 1995, 10 point plan, are based on a common sense approach to the Act and a concerted effort to solve legitimate problems while preserving the core goal of protecting our nation's priceless biological heritage. These objectives include, but are not limited to expanding the role of States; reducing socio-economic effects of listing and recovery; ensuring that best available peer-reviewed science is the basis for all ESA decisionmaking; and increasing cooperation among Federal agencies.

EXPANDING THE ROLE OF STATE AND LOCAL GOVERNMENTS

A major focus of criticism and frustration with the ESA has been the lack of adequate consultation, involvement and flexibility for the States in the implementation of the ESA. A critical component of the 10 point plan deals with the issue of greater State and local government involvement and was developed in concert with the Western Governors Association, National Governors Association, International Association of Fish and Wildlife Agencies (representing State fish and wildlife departments), and many others.

The leading model for State and local government involvement in administration of the Act is the Natural Communities Conservation Planning (NCCP) process now underway in several southern California counties. In a special rule under the Act, first proposed in the Spring of 1993, the Fish and Wildlife Service (FWS) delegated to the State and counties in southern California the opportunity to use existing planning processes to protect habitat for the California gnatcatcher, as a substitute for Federal regulation.

This opportunity has spurred Orange and San Diego counties, working with local municipalities, developers, and environmentalists, to develop several county-wide multi-species plans that would protect habitat for groups of species, including some that are candidates for listing but are not now on the Federal list. If approved, these plans will in effect plan for open space, riparian, recreation, and habitat needs of these counties well into the 21st century—and prevent the need for listing increasing numbers of species in the coming decades.

Federal as well as State, local, and private funds have gone into the planning effort. Final plans are expected to be proposed before the end of 1995. In the meantime, interim guidelines permit subdivision and development of up to 5 percent of key habitat for listed species if targeted in less sensitive areas. This allows a "safety valve" rather than the complete halt in development that would have occurred if strict regulatory provisions of the Act had been applied.

We have identified changes within the 10 point plan that could be adopted to guarantee broader State involvement in administration of the ESA, and make delegation to State and local governments like that achieved in southern California easier in the future.

For example, States could be given a formal opportunity to review the scientific basis for future listing proposals, and States could be allowed to assume responsibility for development and implementation of recovery plans and for issuance of habitat conservation planning permits. Recovery plans should also be developed jointly with the Federal and State agencies and other stakeholders affected.

We also suggest that where a State, in concert with other land stewards, develops its own conservation plan that would achieve the objectives of a recovery plan, the FWS be authorized to suspend the effects of the species' listing (or several species, if the State plan is multi-species) in that State, letting the State implement its plan through State rather than Federal regulation. The FWS would monitor that plan and review its effectiveness periodically.

The Administration is strongly committed to strengthening the role of the States and local partners. Currently, many States and territories receive up to 90 percent of specific project funding for endangered species activities from section 6 funds under the ESA. We are deeply concerned over recent budget proposals which drastically slash the funds available for State participation and conservation planning assistance. The House budget cuts nearly $30 million in funds that the administration sought to provide directly to States to acquire endangered species habitat to reduce conflicts with the ESA while enhancing the States role in the recovery process. The proposed budget cuts would make the goal of increasing State participation in the ESA an empty promise.

TAKING ACCOUNT OF SOCIO-ECONOMIC FACTORS AND TRADE-OFFS

The Administration continues to support basing the listing of species solely on science, not politics. But the changes detailed in this testimony are intended to provide much greater flexibility, and therefore more opportunities for consideration of costs and of socio-economic impacts, in how we *go about* recovering listed species, an issue the subcommittee will look at closely at the next hearing.

ENSURING THE USE OF THE BEST SCIENCE

It is critical that the best science is used in all ESA decisions. We have adopted a policy requiring three independent scientific peer reviewers for all proposed listings and draft recovery plans. In addition, we support requiring that special consideration be given to State wildlife agency scientific knowledge and information. We

propose that any petitions received be sent to each affected State fish and wildlife agency and that the Secretary be required to accept a State's recommendation against proposing a species for listing or delisting unless the Secretary finds, after independent scientific peer review, that listing is required under the ESA.

In addition, the Service is in the process of finalizing guidelines which would more rigorously define standards for evaluating petitions to list species under the ESA.

BETTER COOPERATION AMONG FEDERAL AGENCIES

Several of the apparent "train wrecks" attributed to the ESA in the past resulted primarily from the failure of Federal agencies to: (1) obey their own statutory mandates, and (2) work together toward a common goal. The Fish and Wildlife Service, the National Marine Fisheries Service, the Bureau of Land Management, and the Forest Service working together have produced a Forest Plan for the Pacific Northwest that will provide a sustainable long-term timber harvest while protecting the old-growth forest ecosystem, owls, salmon habitat, and more than 1100 species dependent on this biologically rich and threatened ecosystem.

Our work in the San Francisco Bay/Delta highlights the ability of Federal agencies to cooperate and listen to communities. Federal agencies jointly produced a plan for water allocations in the San Francisco Bay/Delta that would comply with the Endangered Species Act and Clean Water Act. This cooperation produced an agreement in late 1994 that was joined in by the State of California, urban water users, agricultural interests and environmentalists—achieving landmark consensus that has eluded policymakers on these issues for almost 15 years.

The Administration is considering other possible actions that would eliminate redundant review of Federal plans and actions on federally managed land—allowing a single "screening" of plans or guidelines to protect species that, once adopted, would guide Federal land managers without requiring duplicative reviews of every timber sale, recreation development, or watershed restoration project.

In addition, the land management agencies are working together to formulate proposals to further reduce delays and uncertainties associated with the consultation process under section 7 of the Act.

As successful as our efforts to date have been, more could be accomplished and we have suggested changes in the administration's 10 point plan which Congress could make to the existing statute that would result in a major reform of the way the ESA is administered. In addition to the measures previously identified, Congress could enact changes that would:

- provide greater flexibility in the conservation of endangered species as originally intended by the Act;
- provide certainty for landowners who develop habitat conservation plans or improve habitat for endangered species on their lands that their actions will not be subject to further restrictions under the ESA; and
- establish a presumption that residential homeowners and many small landowners whose activities affect less than 5 acres will not be subject to the incidental take prohibitions for endangered or threatened species unless the individual or cumulative effects have a lasting impact on the survival and recovery of a species.

These changes would be significant and go to the heart of legitimate problems associated with the Act. But just as important, they would be consistent with our fundamental principles for any ESA reauthorization we will support. These include:

(1) Reauthorization must be consistent with the overall purposes of the ESA which are widely supported by the American people. That support remains *strong* despite recent controversy. A recent Lou Harris poll in the Northwest, found that citizens support reauthorization of the ESA by over a 2 to 1 margin, with 71 percent of those polled responding that the ESA has been effective in protecting plants and animals from extinction. The reauthorization, therefore, must not undermine the basic requirement that endangered and threatened species be conserved—with the goal being to recover species and remove them from the list.

(2) It must make the Act more workable, efficient and less costly to implement for the government and property owners—not more bureaucratic, costly and unworkable.

(3) Finally, the reauthorization must reduce administrative, economic and regulatory burden on landowners while providing greater incentives to conserve species.

Our message, and the philosophy behind the 10 point plan is that much can be done under existing authority, using flexibility in the law and creativity seldom ex-

ploited in prior Administrations. And even more flexibility can be gained through a moderate, sensible, centrist program of amendment in the reauthorization process.

The Department is concerned that recent actions by the House Appropriations Committee related to the fiscal year 96 budget for the FWS will exacerbate rather than reduce problems which have been identified with the Act. The House Appropriations Committee's budget proposal cuts funding from science, outreach to landowners and State assistance. The Administration has been looking for ways to either avoid the need to implement the Act through planning or to reduce its impact on landowners through activities such as the conservation agreements for the White Sands pupfish, to conserve species before they become endangered or threatened. Pre-listing, or candidate conservation funds are used for cooperative efforts with States, private landowners and Federal agencies. Pre-listing conservation activities are free of the formal prohibitions of the Acts preserving maximum flexibility while conserving the species. Under the current budget proposal by the House Appropriations Committee, however, the FWS would no longer be provided moneys to carry out these activities. In addition, the proposed elimination of funding for listing activities puts many species at risk of extinction. Endangered species will become more endangered and in some cases go extinct, while the status of threatened species will continue to decline and efforts to recover them will be more costly.

At a time when the administration is turning the corner in implementing reforms to the ESA, and seeing success, it would be shortsighted to disable our efforts. Our ability to effectively and flexibly implement the act is directly tied to the funding we receive.

Ultimately, the changes that have already been adopted in the Administration's strategy recognize that the central goal of the Act is protecting of *habitat for threatened and endangered species; that the most valuable habitat usually supports a rich mixture of species;* and that the efforts to protect such habitat inevitably will involve weighing costs and benefits. The recent Supreme Court decision in the *Sweet Home* case will allow current and future conservation partnerships with landowners and local governments to remain on track. The *Sweet Home* decision confirms the regulatory interpretation of the last three administrations that the Act's section 9 "taking" prohibition restricts "significant habitat modification or degradation that actually kills or injures wildlife." Nothing in the *Sweet Home* ruling, however, will affect the availability of remedies for landowners, both public and private, who want to work cooperatively with the Government to resolve any ESA issue. Nor will the decision affect in any way the Administration's resolve to continue to institute new policies and other reforms to provide appropriate relief for landowners. Landowners across the country want and deserve fairness and certainty. The Administration is fully committed to making the ESA work better to achieve these goals.

Our approach to the Endangered Species Act is intended to recognize trade-offs and balance decisions, taking the long-term, not the short-term, view. If sound science and wise management of our natural resources guide our actions, we will benefit not only threatened and endangered species, but the human species as well.

STATEMENT OF DOUGLAS K. HALL, ASSISTANT SECRETARY FOR OCEANS AND ATMOSPHERE, DEPARTMENT OF COMMERCE

Mr. Chairman and members of the subcommittee, I am Douglas Hall, Assistant Secretary for Oceans and Atmosphere, U.S. Department of Commerce, and I appreciate this opportunity to discuss the Endangered Species Act (ESA). I represent the National Oceanic and Atmospheric Administration (NOAA) which conducts research, gathers data and makes predictions about the marine environment and the atmosphere. Within NOAA, the National Marine Fisheries Service (NMFS) functions as the steward for America's living marine resources. These marine resources include valuable commercial and recreational fish, marine mammals, and sea turtles, some of which are imperiled with extinction.

Many of the commercial fisheries in the United States are managed by NOAA. All Federal fishery management plans are developed by regional fishery management councils for review by the Secretary of Commerce. As those deliberations occur, consideration is given also to reducing the impacts to protected species.

NOAA shares responsibility for implementing the ESA with the Department of the Interior's Fish and Wildlife Service (FWS). NOAA has jurisdiction over most marine and anadromous species and the FWS is responsible for birds, terrestrial, and most fresh water species.

NOAA is responsible for the conservation and recovery of 29 marine and anadromous species listed under the ESA. Although I cannot over-emphasize that the ESA is meant to protect all animals, large and small, NOAA'S listed species are

truly magnificent animals. These include whales, sea lions, seals, sea turtles, various salmonids including West Coast chinook and cockeye salmon, and Gulf and shortnose sturgeon.

Marine species have a special place biologically, economically, and culturally in our Nation. Most of the marine species listed by NOAA are highly migratory. Managing the recovery of species that travel through multiple jurisdictions including local, State, tribal, Federal and international waters, requires an enormous amount of planning, flexibility and coordination.

USE OF SCIENCE

NOAA incorporates independent scientific peer review in listing and recovery activities to assure that there is high quality of information used in implementing the ESA through written policies. Each policy identifies procedures, criteria and guidance to ensure that these high standards are met.

NOAA knew that the potential listing of Snake River salmon was of significance to many groups in the Pacific Northwest. To ensure that the best science available was used, NOAA assembled a biological review team of scientists and other experts, from within and outside the agency, who were familiar with Pacific salmon. The Biological Review Team provided scientific information to NOAA to use in reviewing the status of the species. We believe this process guarantees that the best science is used from the initial stages of the ESA listing process.

NOAA also appointed a seven-member scientific recovery team. The team consisted of three fisheries scientists, one economist, two engineers, and one ecologist, comprised mostly from the academic community, to develop a Snake River salmon recovery plan. The recovery team submitted its draft recommendations to a scientific group for peer review.

NOAA also wanted to ensure that this information was available to all interested groups. Therefore, all scientific information and comments related to the ESA listing and recovery plan process were deposited in an administrative record available for public review in four separate locations (Seattle, WA; Portland, OR; Boise, ID; and Washington, DC).

In addition, the recommendations and conclusions in the biological opinion prepared for the effects of the Federal Columbia River Power System on listed salmon was reviewed by a biological review team.

SCIENCE AND POLICY

Science should control the determinations about the status of the species (does it warrant protection) and what is needed for a species to recover. However, once these determinations and requirements are made, we provide the public with this information, and actively involve them in the designation of critical habitat and the development of recovery plans. For example, to carry out the scientific recommendations of the Northern Right and Humpback whale recovery teams, NOAA established implementation teams composed of representatives from county, State and Federal agencies, private organizations, and scientific researchers.

The emergency listing of the Stellar sea lion was supported by a variety of interests including commercial fishing groups. Immediately following listing, NOAA appointed a Stellar Sea Lion Recovery Team that included representatives from State and Federal agencies, the fishing industry, native Alaskans, private groups, academics and researchers to address all aspects of research and management needs for the species. All actions taken on behalf of the Stellar sea lion by NOAA have been discussed and commented upon by the Recovery Team prior to implementation. The Recovery Team continues to provide NOAA with diverse and necessary expertise to address issues affecting the Stellar sea lion. Since the final listing, NOAA has worked with the fishing industry and the regional fishery management council to develop additional fishery management regulations under the Magnuson Fishery Conservation and Management Act (MFCMA) for further reduction of the affects of commercial fisheries on Stellar sea lions. NOAA established management measures through the appropriate fishery management council to ensure that the Gulf of Alaska pollock fishery would not jeopardize the continued existence or recovery of Stellar sea lions. For example, the fishery management council established buffer zones around rookeries to reduce the effects of groundfish trawling on the foraging success of Stellar sea lions. All of these actions, which were based on the best available scientific and commercial data, were done with participation of the fishing industry and the appropriate regional fishery management council.

CHANGES TO THE ESA

First, I must say that I believe that for the most part, the ESA has worked well. There are basic tenets of the ESA that must not be changed. I have already mentioned that listing decisions and recovery requirements must be based solely on the best available science. In addition, we must protect a species' habitat to obtain recovery and fulfill our stewardship obligation to the Nation. Without habitat protection, whether on private or public land, a species cannot survive or recover. There is no alternative. We are pleased that the Supreme Court agreed in its recent *Sweet Home* decision.

However, in the past year we have made many administrative changes and related legislative suggestions. These are reflected in the ten point plan to improve the ESA issued earlier this year by Secretary Babbitt and Under Secretary Baker. This plan would the role of States, streamline implementation of the ESA, and increase certainty for landowners. Many of the following policies published last July clarify the role of science or increased public participation in endangered species protection:

- incorporate greater peer review to ensure scientific scrutiny of ESA listings and recovery plans;
- clarify how States may participate in the ESA activities of NOAA and FWS—including prelisting, listing, consultation, recovery, and issuance of permits;
- increase opportunities for the consideration of social and economic impacts in developing and implementing recovery plans;
- identify activities, when a species is listed, that will or will not constitute a taking of the species; and
- establish criteria, procedures and guidelines to ensure that decisions of NOAA and PWS are based on the best available scientific and commercial data.

In addition, NOAA is working more closely with the Department of the Interior and other Federal agencies to ensure that our ESA policies, guidelines, and programs are consistent. This consistency is essential for efficient protection of listed species. It is equally important for all other groups, whether private or State, tribal, or local governments, to know that, when their activities bring them under the authority of the ESA, they will receive consistent treatment from NOAA and FWS.

NATIONAL RESEARCH COUNCIL'S FINDINGS

It is appropriate at this hearing to mention how pleased we are with the recent National Research Council (NRC) report to Congress on "Science and the Endangered Species Act." It states that although the ESA is not perfect, it is built on the foundation of sound biology and science. It goes on to state that "[s]pecies extinctions have occurred since life has been on earth, but human activities are causing the loss of biological diversity at an accelerating rate. The current rate of extinctions is among the highest in the entire fossil record, and many scientists consider it to have reached crisis proportions."

The report reviewed the role of science and policy in the ESA. No major scientific conflicts were identified as hindering the implementation of the ESA. It recommends that some new approaches need to be developed and implemented as complements to the ESA. The NRC recognized that the law, by itself, cannot prevent the loss of species and their habitats. Instead, the ESA should be viewed as only one part of a comprehensive set of tools for protecting species and ecosystems.

NOAA agrees with the NRC and believes the most efficient, effective and economically viable way to conserve species is to prevent species from becoming threatened or endangered in the first place. Other laws—including the National Environmental Policy Act, the Fish and Wildlife Coordination Act, the Magnuson Fishery Conservation and Management Act, the Clean Water Act, and the Marine Mammal Protection Act—provide important mechanisms for conserving species before they are listed. When all else fails, the ESA serves as a final tool to prevent the extinction of species.

CONCLUSION

The administration has offered a series of administrative improvements and legislative suggestions to accomplish the ESA's goals. These efforts embody the administration's philosophy of ecosystem based management while allowing for economic development, recovery of listed species, and the prevention of further species listings.

Thank you for this opportunity to testify before the subcommittee. I will be pleased to answer any questions you may have.

STATEMENT OF MICHAEL T. CLEGG, CHAIR, NATIONAL RESEARCH COUNCIL'S COMMITTEE ON SCIENTIFIC ISSUES IN THE ENDANGERED SPECIES ACT

Good morning. My name is Michael Clegg. I am professor of genetics at the University of California (Riverside). I chaired the National Research Council's Committee on Scientific Issues in the Endangered Species Act, whose report, *Science and the Endangered Species Act,* was released May 24, 1995. I am pleased to be here this morning to tell you about the report. The committee that my colleagues and I represent includes a wide spectrum of expertise in areas such as ecology, population biology, systematics, paleontology, wildlife management, law, decision analysis, and economics. We come from universities and private industry. Some of us have government experience. Our report is a consensus statement that reflects the range of our perspectives, and we all agree with its conclusions and recommendations.

Our study was initiated by the National Research Council nearly two and a half years ago in response to a bipartisan request from three congressional leaders: former House Speaker Thomas Foley, Senator Mark Hatfield, and Representative Gerry Studds. This was a most welcome request, because sound public policy often depends on sound science.

In broad terms, we were asked whether the Endangered Species Act conforms to contemporary scientific knowledge about habitat, risks to species, and identifying species, subspecies, and other biological groups below the species level. We also were asked to consider whether the Act conforms to what we know about the factors needed for recovery of endangered species, possible conservation conflicts between endangered species, and the timing of key decisions under the Act.

The 1973 Endangered Species Act and its amendments constitute the broadest and most powerful law in this nation to protect endangered species and their habitats. The survival of species such as the whooping crane, American peregrine falcon, southern sea otter, and blackfooted ferret attests to the Acts success. But it is also a controversial law, particularly in cases where its implementation has delayed or prevented public and private development and other economic activities. Many of these conflicts have played out in the public-policy arena and in the courts.

The distinction between science and public policy is often fuzzy, because the possession of scientific knowledge and the implementation of that knowledge are so closely linked. But we have endeavored to restrict our advice to the scientific aspects of the Act. We were not asked to comment on the social and political decisions concerning the Acts goals and tradeoffs, and have not done so. Nonetheless, we believe that some of our recommendations, if adopted, will improve the Acts implementation and will make some of the tradeoffs easier to understand and resolve.

Since the Act was first passed, scientific knowledge has been anything but static. Our understanding of biological species, in terms of their genetic makeup and evolutionary heritage, has greatly expanded during the past two decades. A rich array of new experimental tools has been acquired from both genetics and computational biology and has helped drive a revolution in the study of the diversity of organisms and their natural relationships. Likewise, developments in conservation biology and population genetics have greatly increased the scientific understanding of risk to endangered species. We believe that these new tools should be put to work to inform decisions associated with the Act.

Nevertheless, our committee finds that there has been a good match between science and the Endangered Species Act. Given new scientific knowledge, we simply recommend changes to improve its effectiveness.

The ultimate goal of the Endangered Species Act is to ensure the long-term survival of a species. We all know that species extinctions have occurred since life has been on Earth. But the current rate of extinction is among the highest in the entire fossil record, in large part because of human activity. The introduction of non-native species and especially the degradation and loss of habitat are causing extinctions at a rate that many scientists consider a crisis.

The relationship between vanishing habitats and vanishing species nationwide is well documented. Consequently, protecting species in the wild most often means conserving the habitats where they live and breed. The Acts emphasis on protecting habitat reflects current scientific understanding of this crucial relationship.

We endorse the regionally based, negotiated approaches to the development of habitat conservation plans provided for by the 1982 amendments to the Act. Although difficult to negotiate, because they require agreement among many contending parties, such plans are already in use in several regions of the country to protect endangered and threatened species. The U.S. Fish and Wildlife Service should provide guidance on obtaining the necessary biological data and other information to help develop these plans.

The 1978 reauthorization of the Act requires the identification of "critical habitat" based on the best available science, after the consideration of economic and other relevant impacts. We realize that detailed information needed to designate critical habitat for a given species often is lacking. Just because a species occurs within a habitat does not necessarily mean that it requires that habitat for survival. To complicate matters, the absence of a species from a given habitat does not mean that the habitat is not critical to the survival of the species. These uncertainties, combined with public concern over economic consequences, often make designating critical habitat both controversial and arduous. This can delay or even prevent protection.

To avoid such situations, we recommend that when a species is listed as endangered, a core amount of survival habitat should be protected as an emergency, stopgap measure without reference to economic impact. This survival habitat should be able to support either current populations or the population necessary to ensure short-term survival for a period of 25 to 50 years. When the required recovery plans are adopted or the required critical habitat is identified and designated, the survival-habitat protections should automatically expire.

Shrinking amounts of available habitat are creating conflicts between what is needed to protect different species in the same region, though such conflicts have been rare in the past. The most effective way to avoid conflicts is to maintain protected areas large enough to allow for the existence of a diverse array of habitats within a single area.

There is no scientific reason that standards relating to protecting habitat and species should differ on public and private lands. As our report says, the degree to which public and private entities should bear the responsibilities of the Endangered Species Act is a policy and not a scientific matter. But there is no escaping the scientific conclusion that all species have certain requirements no matter who owns the habitats. Public and private landowners do not always respond in the same way to laws, regulations, and other incentives. As a result, regulations applied equally on both public and private lands might not provide the same degree of species protection. For this reason, different management policies may be required for them.

Our committee also was asked about the definition of species. The question of what constitutes a species under the Endangered Species Act can be difficult to answer, requiring scientific interpretations about the subtle physical, genetic, or behavioral characteristics that distinguish subgroups within a species from one another. We believe that the Acts inclusion of these distinct population segments is scientifically sound and should be retained.

But to provide greater scientific objectivity in identifying these population segments, we recommend using the concept of evolutionary units that identify biological groups with distinctive behavioral and genetic characteristics, and that possess the potential for a distinct evolutionary future. By focusing attention on the important, distinctive attributes of organisms, the use of evolutionary units would provide policymakers with an additional scientific basis for determining which groups of plants and animals merit protection.

The scientific identification of evolutionary units should be made independently from decisions about whether they need protection. What I mean by this is that although there may be persuasive reasons unrelated to science to protect certain plants and animals, there might not be scientific reasons for listing them as evolutionary units. For example, bald eagles in the lower 48 United States and in Canada intermix and are not biologically distinct, so there is no scientific justification for identifying the U.S. population as an evolutionary unit. Similarly, protection status of the American alligator and the American brown bear have been based more on management, aesthetic, and political considerations than on scientific grounds.

We believe that the recovery plans designed to achieve the goals of the Endangered Species Act often are developed too slowly or have provisions that cannot be justified scientifically. To ensure that these plans are effective, the U.S. Fish and Wildlife Service, which oversees each plan, should establish explicit guidelines for developing them. Species recovery plans should include as much guidance as possible concerning which human activities are likely to harm recovery and which are not, to enable people to plan economic activities. Also, for purposes of evaluation, plans should incorporate estimates of the probabilities of achieving various recovery goals over different periods of time.

The Endangered Species Act was not designed to carry out all of our country's conservation policies. More approaches need to be developed and implemented as complements to the Act to prevent the continued, accelerating loss of species and to reduce economic and social disruption and uncertainty. The Endangered Species Act by itself cannot prevent the loss of all species and their habitats, but should be viewed as one essential part of a comprehensive set of tools for protecting them.

Many Federal, State, and local governments and private organizations are developing such approaches, including cooperative management strategies that involve shared decisionmaking among several government and non-government groups; the large-scale management of ecosystems and landscapes; the reconstruction or rehabilitation of damaged ecosystems; the development of mixed-use areas that provide for human activities as well as wildlife habitat; and the use of various market-based economic incentives.

In general, we hope that our recommendations can help make the implementation of the Act more effective at protecting endangered species, more predictable, and less disruptive for everyone. We believe that there is a common ground for a more enlightened and cooperative public conservation policy.

Thank you very much.

STATEMENT OF JANE LUBCHENCO, DEPARTMENT OF ZOOLOGY, OREGON STATE UNIVERSITY

I wish to emphasize three points in my remarks: (1) reauthorization of the ESA is one of the most important responsibilities this Congress will have, (2) vigorous protection of the Nation's biological resources will benefit all Americans, and (3) recent scientific advances provide good guidance for achieving the goals of the ESA more effectively and efficiently.

The Endangered Species Act of 1973 was a remarkable piece of legislation. Now, twenty-two years later, the time has come to revisit the ESA and to reconsider its goals and the mechanisms for achieving them. This task is one of the most important challenges facing the 104th Congress. The responsibility of safeguarding the Nation's biological resources is profound. The challenge is also fundamentally different from many of the other important responsibilities of Congress. Most policies formulated at one point in time can be altered at a later date. However, because the loss of a species is irreversible, many of the consequences of a poorly conceived ESA cannot be reversed. Jurassic Park notwithstanding, species cannot be brought back to life, nor can most of their important functions be replaced. Losing species means losing genes, losing potentially important chemicals for medicine, or losing life-supporting ecological services. The permanency of extinction and the folly of squandering the natural biological capital on which we all depend should prompt a profound sense of responsibility and a suitably careful approach. Few bad decisions will have such irreversible consequences.

The task of reauthorization should take full advantage of the substantial, recent advances in science. We are fortunate to have access to a wealth of scientific information, information that can be used effectively to meet the daunting responsibility of safeguarding the Nation's biological resources for coming generations. The scientific information relevant to the ESA has been recently reviewed and summarized by two independent expert panels. Professor Clegg has summarized the excellent report issued by the National Academy of Sciences. A separate, independent but parallel scientific assessment has just been released by the Ecological Society of America. This report is remarkably similar in its conclusions to the Academy report and focuses specifically on ways in which scientific information can help achieve the goals of the ESA more effectively and efficiently.

Together, these reports provide unequivocal testimony to strong consensus within the scientific community: strong consensus about the importance of preserving the Nation's biological resources, strong consensus about the critical importance of these resources to people and strong consensus about the dual need to protect both species and habitats.

People depend upon biological resources in myriad and generally unappreciated ways. Even the much maligned "creepy, crawly critters" or even the simply plain organisms may be bountiful sources of useful products like medicines. For example, the interaction between caterpillars of the day-flying moth Urania and the Omphalia plants on which they feed results in the production by the plants of a chemical dihydroxymethyldihydroxypyrrolidine or DMDP. This compound has been shown to have remarkable properties: it blocks activity of the HIV virus, protects stores of beans against attack by beetles and demonstrates some activity against cancer and diabetes.

Species provide much more than "goods" such as medicines, food and genes, they also provide "services" to people. Intact ecosystems with their full component of species provide many essential services which we take for granted. Old growth forests and wetlands purify water and detoxify pollutants; kelp forests and salt marshes provide nursery ground for fishes and protect shores from erosion during storms. Other "ecosystem services" include the provision of fertile soil, pollination for crops

and control of pests and pathogens. These ecosystem services are provided free of charge. They are not included in our economic valuation systems. They are not easily replaced. These services are of obvious importance to people and warrant strong protection.

In some cases, protection of individual species through the ESA has had the added benefit of protection of the ecosystem in which the species lives and therefore both other species and the ecosystem services provided by that ecosystem. For example, protection of the northern spotted owl has probably resulted in protection of some 280 other species of plants and vertebrates, as well as protection of watersheds that provide clean drinking water for cities and spawning grounds for salmon.

The increase in scientific understanding of species and ecosystems over the past two decades strongly reinforces the original goals of the ESA. Thus in addition to ethical and moral reasons to protect species and habitats, it is in our own best interests to do so. Protection of species benefits us all. New information also provides guidance about how to achieve this protection in more efficient and effective ways.

In closing, let me share with you my pleasure that my younger son Duncan is here with us today. Throughout human history, parents have looked to the younger generation as the hope for the future, the hope for continuing the good things we have begun and for correcting our errors. Now, however, the next generation may not unable to undo our most egregious and short-sighted mistakes. As E.O. Wilson has said, loss of biodiversity is the folly least likely to be forgiven us by future generations.

PREPUBLICATION COPY

STRENGTHENING THE USE OF SCIENCE IN ACHIEVING THE GOALS OF THE ENDANGERED SPECIES ACT

AN ASSESSMENT BY

THE ECOLOGICAL SOCIETY OF AMERICA

Ad hoc Committee on Endangered Species

Ecological Society of America

1995

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PREFACE

The Ecological Society of America is the nation's leading professional society of ecologists representing 7,500 ecological researchers in the United States, Canada, Mexico and 62 other nations. Founded in 1915, ESA seeks to promote the responsible application of ecological principles to the solution of environmental problems through ESA reports, journals, research and expert testimony to Congress.

In March of 1992, then President of the Ecological Society of America, H. Ronald Pulliam, established an Ecological Society of America ad hoc Committee on Endangered Species. The primary charge to this committee, made up of nine distinguished ecologists, was to produce a report addressing the ecological issues relevant to reauthorization of the Endangered Species Act. The Society's goal in this endeavor was to provide legislators with scientifically credible information.

The Ecological Society of America has produced other reports focusing on possible ecological consequences of the release of genetically modified organisms, delineation of wetlands, and ecological research priorities. These reports have been favorably received and viewed as credible because of the Ecological Society's reputation and because the reports focused on science in a policy context.

The following document is based on an exhaustive effort on the part of the ad hoc Committee that included soliciting comments on earlier drafts from some thirty academic, public and private agency biologists, open discussions on the topic during annual meetings of the Ecological Society of America, and external review by twenty other biological scientists. It is our hope that this report will prove useful as Congress considers reauthorization of the Endangered Species Act.

STRENGTHENING THE USE OF SCIENCE IN ACHIEVING THE GOALS OF THE ENDANGERED SPECIES ACT

AN ASSESSMENT BY THE ECOLOGICAL SOCIETY OF AMERICA

STRENGTHENING THE USE OF SCIENCE IN ACHIEVING THE GOALS OF THE ENDANGERED SPECIES ACT

AN ASSESSMENT BY THE ECOLOGICAL SOCIETY OF AMERICA

EXECUTIVE SUMMARY

By enacting the Endangered Species Act of 1973, Congress established a national commitment to preserve the Nation's biological resources for the benefit of the American public. The Endangered Species Act sets out a series of steps for determining whether a species is at risk of extinction, removing the major causes of its endangerment, and returning the species to a viable state. The Act specifies all the steps, procedures, and mechanisms to accomplish its goals. Scientific information is needed for implementing each of these procedures, but the Act itself provides little guidance as to how to use science to achieve the goals of the Act.

Therefore, the Ecological Society of America undertook an analysis of how scientific information could be used more effectively to assist in the preservation of the Nation's biological resources. This report concludes that:

- The 1973 Endangered Species Act is a powerful and sensible way to protect biological diversity, and contains the procedures and mechanisms with which to achieve this goal.

- On the basis of science, the most important priorities to use in deciding which candidate species to list are: 1) number of other species that will benefit from the listing; 2) ecological role of the species; 3) the organism's recovery potential; and 4) its taxonomic distinctness.

- Formal Population Viability Analysis offers a method to identify how a species' survival potential can be maximized in the least controversial manner.

- The likelihood of restoring the viability of an endangered species is enhanced when: 1) recovery plans seek to achieve a population distributed in suitable habitats across the landscape; and 2) these plans are developed and implemented expeditiously.

- Additional programs for ecosystem-level protection that would complement existing legislation offer promise for a proactive approach that would effectively protect our Nation's biological heritage at lower long-term cost.

I. INTRODUCTION

The Endangered Species Act, as amended in 1988, has three purposes:

"...to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved.
...to provide a program for the conservation of such endangered species and threatened species."
...to take such steps as may be appropriate to achieve the purposes of the treaties and conventions..." (Endangered Species Act 1988).

By enacting the Endangered Species Act of 1973, Congress, on behalf of the American people, established a national goal and commitment to protect the Nation's biological resources. The Act establishes the form and sequence for the process of providing federal protection, from listing threatened and endangered species to the implementation of their recovery. The Act is a powerful and sensible way to protect biological diversity that specifies the procedures and mechanisms to achieve that goal. However, the original legislation and subsequent amendments to the Act do not explicitly specify how science will be used to carry out the legislative mandate. Instead, the manner in which scientific knowledge is to be used is largely left to the discretion of the implementing agencies, the United States Fish and Wildlife Service and National Marine Fisheries Service.

The goals of the Act are to identify species that are at risk of extinction, to implement a process for reducing that risk by limiting additional sources of jeopardy, and to develop and implement a recovery program. The process is flexible and can be applied to individual species or to groups of species that share an ecosystem or management area. If the valuable scientific knowledge that has accumulated over the past several decades of analytical ecological research is used to the fullest extent, the Act can become an even more powerful tool in achieving the societal goals for which it was enacted.

The Act has improved the status of some species, such as the California sea otter, peregrine falcon, American alligator, whooping crane, and bald eagle. Nevertheless, each year, many more species are added to the list of endangered species than are successfully recovered and removed from the list. Despite being protected, some species are becoming extinct. Currently 955 species in the U.S. are on the list of endangered and threatened species; only slightly more than half of them have approved recovery plans (Department of the Interior 1995).

Given this growing list of threatened and endangered species and the limited success in recovery of endangered species, the Ecological Society of America undertook an analysis of the Endangered Species Act, with the objective of assessing how the Act

could be made more effective through better use of scientific information. The nation's biological diversity has great economic, aesthetic, and spiritual value. Modern society draws upon biological diversity as a source of medicines, fiber, food, as sources of genes for future incorporation into crop plants, and for uses we cannot predict. The extensive services that natural ecosystems provide, such as cleansing of air and water, control of erosion, and stabilization of climate, depend in part on the richness of species in those systems. Therefore, the Ecological Society's analysis accepts and supports the goals and objectives of preserving the biological heritage of the United States and explores how science can be used more effectively than it has in the past to enhance the achievement of those goals.

II. THE IMPLEMENTATION PROCESSES OF THE ENDANGERED SPECIES ACT

The Endangered Species Act sets out a series of steps for determining whether a species is at risk of extinction, removing the major causes of its endangerment, and returning the species to a viable state. The major stages in this process are: (1) Listing a species as threatened or endangered, (2) designating the habitat that is critical for survival of the species, (3) providing immediate protection and prohibition of acts that would further jeopardize the species, (4) developing and implementing recovery plans, and (5) delisting the species once it has been restored to a viable state. Scientific information must be used at all of these stages if an accurate initial assessment and a successful recovery program are to be achieved.

The process of listing a species includes a series of steps that begins with a decision to propose a species as a candidate for protection and culminates in one of three outcomes: rejection of the claim for protection; inclusion of the species under federal protection as either an endangered or threatened species; or placing the species in an ill-defined category, known as "warranted, but precluded." Although decisions on status of species designated "warranted, but precluded" are to be made within a 12 month finding period, since 1982, 114 species have remained in this category for two or more years. Fifty-six have been in this category for at least 8 years (GAO 1992).

Once a species is listed, the Endangered Species Act requires the designation of "critical habitat." In the legislative language, "critical habitat" is defined as the minimal area that is needed to supply the species with its immediate survival needs. The Endangered Species Act also provides immediate protection to a species when it is listed as threatened or endangered. Section 7 of the Act requires all federal agencies to ensure that any actions they authorize, fund, or carry out do not jeopardize the continued existence of any listed species or adversely modify its habitat. Thus, every federal agency must examine whether any action it proposes to carry out might adversely affect a listed species and these assessments must be scrutinized and

evaluated by the Fish and Wildlife Service or the National Marine Fisheries Service. Scrutiny occurs through a process known as "formal consultation" and ends with a written "biological opinion" containing the service's views. These opinions are not legally binding on the other federal agency but federal agencies are reluctant to proceed with a project in the face of a jeopardy opinion because the probability that a citizen suit will be brought against the action is very high. In such suits, jeopardy opinions are given considerable weight by the courts. Formal consultations serve other purposes in addition to making jeopardy determinations. They also search for reasonable alternatives or adjustments to the proposed action that could avoid jeopardizing a listed species.

Section 7 also deals with incidental take, which is defined as a taking of a listed species that is incidental to, and not the primary purpose of, otherwise lawful activities. The term "take" refers to many possible perturbations to the species, including "harm, harass, kill, wound, catch," etc, all of which are prohibited under the Act unless authorized by a permit, an incidental take statement, or a special rule. Incidental take has been interpreted to include harm to the habitat of a species as well as direct harm to the species itself, and this interpretation has been upheld in a 1995 Supreme Court decision. From a scientific standpoint, degradation or destruction of the habitat of a species can be at least as harmful to the survival of the species as direct injury to an individual of the species. In 1982 Congress amended the Act to provide mechanisms for regulating incidental take on non-federal land. Those procedures are now found in section 10(a)(1)(B). Persons applying for an incidental take permit under Section 10(a)(1)(B) must submit a "Habitat Conservation Plan" or HPC along with other materials attendant to their permit application.

In the case of Section 7, "harm" is defined as an action that significantly reduces both the survival and recovery of a species. Similarly, in the definition of harmful destruction of critical habitat, a jeopardy ruling requires that both the survival and recovery of a species be affected. Many actions slow a recovery process but it is difficult to show unambiguously that an action threatens the survival of a species (Rohlf 1989).

When a species is listed, the Endangered Species Act requires that a recovery plan be developed. The ultimate goal of the recovery plan is to improve the status of the species in its natural habitat to such a degree that it can be delisted. However, by the time a species becomes eligible for listing, its habitat is often destroyed or badly degraded, the population is decimated, and its genetic diversity seriously eroded. Additional delays in developing and implementing recovery plans further imperil the species. In practice, recovery plans are often not developed for years, if at all. Through 1991, 61% of the listed species had approved recovery plans but, of the

more than 200 species without recovery plans, more than half had been listed for three or more years (GAO 1992). The recovery of species under these circumstances is one of the greatest challenges to the application of ecological science.

In addition to being delayed, recovery plans often have weak goals. A review of the 314 approved recovery plans for threatened and endangered species that were approved by the U.S. Fish and Wildlife Service and the National Marine Fisheries Service as of mid 1991, found that population goals were often no higher than existing population densities at the time of listing (Tear *et al.* 1993). More than half of the vertebrates would remain in serious risk of extinction even if they met the population targets in their recovery plans. In some cases, habitat destruction was so severe that the recovery plans had little chance of success. The reviewers concluded that, "Recovery plans all too often "manage for extinction" rather than for survival" (Tear *et al.* 1993).

The ultimate goal of the Endangered Species Act is to restore populations so that they no longer are threatened with extinction. When that state is reached, the Act provides for delisting of the species.

III. THE ROLE OF SCIENCE IN THE ENDANGERED SPECIES ACT

Scientific information is needed for implementing all of the processes specified in the Endangered Species Act. The more high quality science is used, the more effectively and more efficiently the Act can achieve the important goals society has asked it to accomplish.

A. Use of Science in the Listing Process

Listing a species as threatened or endangered is the first step in conferring legal protection. It is the conclusion to a decision-making process that draws heavily on ecological science, particularly for assessing the level of risk to a species and developing priorities for listing.

Species are proposed for protection because they are thought to be in danger of extinction or at risk of becoming endangered with extinction. For species deserving protection, delaying the decision to provide protection and recovery will bring most of these vulnerable species even closer to the brink of extinction, restrict the options available for achieving recovery, and increase the eventual cost of the recovery

process. Therefore, streamlining the listing process can increase the effectiveness of the Act in achieving its goals and potentially reduce the total costs of doing so.

There is no scientific reason why listing, which is an administrative decision based on the available information, should require much time or agency resources. The uncertainty that may result from sparse information is part of the risk that is evaluated during the listing process. Adding independent peer review or other administrative processes to the listing process would unnecessarily lengthen the time to make a listing decision without providing any substantial benefits. The major problem with the listing process has been its slowness, not inadequacy of the quality of the listing decisions.

1. Which Biological Units Should be Listed?

In the language of the Act, a "species" is taken to include any subspecies of fish or wildlife (including invertebrates such as insects, crustaceans, and mollusks) or plant (including fungi). For vertebrates, any distinct population segment of a species, that is one with unique morphological features or genetic traits, qualifies as a species. How distinct is distinct enough must be judged on a case-by-case basis. The meaning of "species" in the language of the Act is, therefore, somewhat imprecise, but the wording recognizes that a species is made up of an assemblage of individuals that collectively express genetic, morphological, and behavioral variation, and that this variation is the basis of evolutionary change and adaptation.

The scientific justification for extending protection to distinct population segments of species is that genetic diversity provides the raw material for adaptation of a species to changing conditions. A wide geographic range decreases the likelihood that a catastrophic event such as wildfire, disease, or alien species introduction could wipe out an entire species. The capacity to respond to environmental change through ecological and evolutionary processes is enhanced by large population size, extended geographical distribution (including spatial structure among its populations), and intraspecific genetic diversity. Therefore, because loss of specific population segments can contribute to the decline of a population and increase the probability of its extinction, protection of population segments is biologically appropriate.

The National Marine Fisheries Service has introduced the concept of an "evolutionarily significant unit" to better define and identify distinct population segments. An evolutionarily significant unit is a population that is reproductively isolated from other populations of the same species, which therefore represents an important part of the evolutionary history and future evolutionary potential of the species. For example, the

species of Pacific salmon are subdivided into many distinct spawning runs that are evolutionarily significant units of central importance for the future survival and evolution of the species (Waples 1991).

New species often arise when genes from two species combine and the number of chromosomes is increased, a process called polyploidy. Polyploidy has given rise to many species of plants and some animals, including trout and salmon. Hybrid populations may play unique ecological roles and may stimulate evolutionary processes. For example, hybrid populations of plants sometimes provide opportunities for increased speciation among herbivorous insects (Bush 1975). The biological processes that produce these genetic mixtures are natural components in the larger processes of speciation and evolution. For these reasons, it is scientifically appropriate to protect species of hybrid origin.

2. Science and Listing Priorities.

Currently more than 3,000 species are "Candidates" for listing under the Endangered Species Act, including more than 2,000 vascular plants, 200 mammals, and 750 insects. This large number of candidate species greatly exceeds the capacity of the Fish and Wildlife Service and National Marine Fisheries Service to evaluate and propose species for listing as threatened or endangered. In recent years, about 100 species have been listed annually.

The scarcity of resources available for listing species requires agencies to make choices about how those resources can best be allocated to meet the objectives of the Endangered Species Act. In the 1970s and 1980s, the FWS developed several different schemes for setting priorities for listing species. These priority systems incorporated such criteria as: magnitude and imminence of threat, availability of information, taxonomic distinctness of the species, recovery potential, and population status. The current scheme, adopted in 1983, establishes priorities for listing based on three criteria: (1) Magnitude of threat, (2) immediacy of threat, and (3) taxonomic status (the greater the evolutionary distinctness of a taxon, the higher its priority). A fourth criterion--recovery potential--is included in setting priorities for the development of recovery plans.

This system of priority-setting has the advantage of being relatively simple. It uses information that is available for most species, and employs criteria that can be evaluated relatively objectively (Tobin 1990). However, it does not take full advantage of ecological knowledge that could better guide limited resources. From an ecological perspective, three attributes should be considered in a determination of listing priorities:

(a) Inclusive benefits. Will the habitat managed on its behalf benefit other species, especially species that are listed or are candidates for listing?

Given the limited resources available for endangered species protection, giving high priority to species that serve as protective "umbrellas" for other species makes good ecological sense. For example, the Florida Scrub Jay (*Aphelocoma coerulescens coerulescens*) is restricted to scrub oak habitats on the Florida peninsula. Many rare species of reptiles, insects, and plants inhabit, and are restricted to, those scrub habitats. Many of them benefit from the land that is managed for the protection of the jay. Similarly, many but not all species requiring old-growth temperate rain forest will benefit if sufficient spotted owl habitat is protected.

The umbrella species approach must be used carefully because every acre of land or body of water will contain large numbers of species. Thus, virtually any organism could be considered an umbrella species at some scale. Moreover, an important fact about endangered species is that they rarely have exactly the same requirements. Therefore, even when a suitable umbrella species exists, the ecological needs of other community members must also be considered. The most useful umbrella species are ones whose habitats harbor numerous endemic, rare species. Thus, umbrella species should be given priority for listing in proportion to the number of other endemic, rare species that co-occur with them.

(b) Ecological role. Does the species play an especially important role in the ecosystem in which it lives? Do other species depend on it for their survival? Will its loss substantially alter the functioning of the ecosystem?

> Keystone species--an organism whose impact on its community or ecosystem is large, and disproportionately large relative to its abundance (Power and Mills 1995)--merit special attention in the listing process. Unfortunately, determining which species are keystone and which are not is difficult because a species' importance in an ecosystem is not necessarily proportional to its size, abundance, or charisma. Tiny fig wasps and African elephants are both keystone species.

(c) Taxonomic distinctness. How evolutionarily distinct is the taxon in question?

> On scientific grounds, the more evolutionarily distinct an organism is, the higher should be its priority for protection. All things being equal, therefore, saving the sole surviving member of a genus may have a higher priority than saving an imperiled species within a large genus that contains many other species. Similarly, protecting full species would normally be given a higher priority than protecting subspecies and populations (Vane-Wright, Humphries, and Williams 1991).

Species also have important scientific, aesthetic, and social values, but, given the paucity of information about most species, priorities are difficult to assign using those values. Therefore, provisionally it seems scientifically reasonable to give high priority to species immediately threatened with extinction, to umbrella species, and to taxonomically unique species. Existing priorities for listing also could be modified by including considerations of inclusive benefits and ecological role. For example, among current high priority species (species and monotypic genera facing high magnitude imminent threats), those providing more inclusive benefits or playing more important ecological roles should be given higher priority.

B. The Use of Science to Establish Recovery Priorities

The immediate consequence of listing a species under the Endangered Species Act is to trigger a series of processes that can recover the species and enable it to be delisted. Recovery is much more complex and difficult than listing, and development of recovery plans usually requires the generation of substantial new information in addition to the evaluation of existing information.

1. Science and Critical Habitat Designation.

Once a species is listed, the Endangered Species Act requires the designation of "critical habitat." Because loss of habitat is the cause of endangerment of most species, designation and preservation of habitat is a vital part of Endangered Species Act procedures. Because recovery is a long-term, not a short-term process, and the goal of the Act is to preserve species in perpetuity, enough habitat must be preserved to allow the species to survive in the long term. But how long is long term and how much is enough?

The scientific procedure used to estimate the probability of survival of a population for a specified period of time is known as Population Viability Analysis, or PVA (Shaffer 1990). Although there is no strict definition of what is or is not included, each PVA should include an analysis of the best available information on the focal species. Most PVA analyses combine data from field studies with simulation modeling of the possible impacts of various extinction factors (Doak *et al.* 1994, Murphy *et al.* 1990; Menges 1990; Stacey and Taper 1992).

The details of a PVA analysis depend on the characteristics of the focal species (Murphy *et al.*1990). Species with low population densities and small geographic ranges (most endangered large vertebrates, for example) and small geographic ranges (many plants) require a PVA that includes analysis of the genetic and demographic factors that affect small populations. Smaller organisms, such as most

threatened invertebrates, frequently are restricted to a few habitat patches, but within those patches they often have high population densities. For these species PVAs need to analyze environmental uncertainty and the probability of local catastrophic factors. PVAs for plants require different emphases than PVAs for animal species because individual plants may survive for many years even if they are not reproducing successfully (Schemske *et al.* 1994). A PVA for a migratory species may also have to incorporate explicitly how its populations are linked through migration and how its population dynamics are influenced by processes operating at a landscape scale.

A good PVA addresses the issue of how long is long enough by attempting to answer the following questions: Is the population viable in both the short term and the long term? What factors are currently putting it at risk? How can these risks be reduced or eliminated so that the population can both survive and recover? There are no clear criteria for determining how long is long enough, but in practice a minimum viable population (MVP) is typically defined as one that has a 90% probability of persisting for 200 years.

A PVA was performed on the Acorn Woodpecker (*Melanerpes formicivorus*), a non-endangered bird that lives in small, isolated populations in the oak woodlands of western United States and Mexico (Stacey and Taper 1992). A simulation model showed that most of these populations would become extinct within 20 years if they were totally isolated from one another. However, with a small amount of migration among populations, the model indicated that most of the populations would last more than 1,000 years. Historical records indicate that local populations of these woodpeckers have survived more than 70 years, suggesting that migration must be important in maintaining them.

Population viability can seldom be assessed by focusing on a single patch of suitable habitat and the organisms living in it. Most organisms live in islands of suitable habitat, among which there is an exchange of individuals, embedded in a larger landscape. Because the populations in the various patches are linked by the movement of dispersing individuals, the fate of the populations is interconnected. Studies of population viability of many organisms will therefore need to consider the importance of factors that link subpopulations. The whole set of populations of a species that are linked through migration in a habitat mosaic is known as a "metapopulation."

The long-term survival of metapopulations can be strongly affected by the spatial and temporal distribution of suitable and unsuitable habitat patches. Populations living in high quality habitats (referred to as "source" habitats) have birth rates greater than death rates; the excess individuals may migrate into lower quality habitats ("sink" habitats) where birth rates are less than death rates. The viability of metapopulations depends on the existence of sufficient high quality habitats, but a large fraction of the

individuals may live in the sub-optimal habitats (Pulliam 1994). To determine the critical habitat needs of such species requires identification of source and sink habitats, which may be difficult.

Not every rare and endangered species is patchily distributed in a spatially structured habitat mosaic. Some live in just a few continuous or in completely isolated habitats. Some have a "core-satellite" structure in which one very large population (the core) determines the population dynamics in the small (satellite) populations. Nonetheless, because many species do depend on source and sink habitats, every protection and recovery plan for species should investigate the need to include (1) spatially distributed populations that are linked through migration, and (2) special protection of the most stable, high quality habitats.

For some species, the designated critical habitat may need to include more than habitat actually occupied by the species. This is especially true in cases where the quality of critical habitat is dependent on land use in the surrounding area (e.g., Noss 1983, Turner *et al.* 1994). Although this is a general concern, the need for a larger scale of focus in the designation of critical habitat is most apparent for aquatic species. If the watershed that supplies river and lake ecosystems is degraded, the critical habitat needed by the endangered species may also be destroyed.

The data available for most candidate species will not allow a precise determination of MVP or critical habitat. From a scientific standpoint, the resolution to this problem is to designate interim critical habitat at the time a species is listed and to designate long-term critical habitat as part of the recovery plan. A monitoring and research program that generates information about the requirements of the species needs to be established. Procedures should allow for revisions of critical habitat designations if suggested by additional information.

The Endangered Species Act, although it focuses on species as the objects of concern, clearly recognizes that preservation of the ecosystems upon which endangered and threatened species depend is a necessary component of the recovery process. This feature was written into the Act because loss of habitat is by far the most important cause of endangerment of species in the United States. A particular habitat type may be lost by destruction or conversion to other habitat types unsuitable for the species that live in it. A habitat may also be degraded by pollutants without being otherwise altered. The fact that habitat preservation is the most important element of most recovery plans creates several possibilities for using scientific information in more comprehensive ways.

Because many species that depend upon a habitat that has been greatly reduced in area or otherwise degraded are similarly affected by losses of that habitat, a number of listed or candidate species are likely to live in the same habitat. In a recent out-of-

court settlement, the United States Fish and Wildlife Service formalized a commitment to emphasize multiple species listings and proposals that address entire ecosystems (Jaffe 1993), a result that demonstrates the appropriateness and legality of multispecies processes under the existing Act. Managing for multiple species within a single management area focuses efforts on recovery of threatened species while simultaneously directing attention to broader issues of habitat quality and quantity.

Multispecies planning differs from ecosystem management because its focus is still on species. Nonetheless, a multispecies approach to preservation plans inevitably directs attention to habitats and ecosystems. Habitat-based packages that combine the listing efforts for many species have the potential to eliminate unnecessary duplication of efforts and to prevent species from becoming threatened in the first place. Thus, a likely consequence of more extensive use of a habitat approach is that the need to invoke the Endangered Species Act will arise less frequently than it does now.

2. Use of Science in Protection and Prohibition against Jeopardy

Section 7 of the Endangered Species Act provides immediate protection to a species when it is listed as threatened or endangered. The analyses leading to no jeopardy or jeopardy opinions, together with the search for nonjeopardizing alternatives, offer considerable scope for the use of ecological knowledge. Jeopardy opinions, as well as non-jeopardy opinions, may become irrelevant unless they are regularly updated to reflect changed circumstances and new information. Ideally, recovery plans should provide tangible standards or yardsticks for judging whether particular federal actions satisfy Section 7. Recovery teams could play a useful role in this regard, by advising the Fish and Wildlife Service and National Marine Fisheries Service with respect to particular consultations.

The likelihood that a species will become extinct does not increase uniformly as its population declines. Rather, thresholds at which the probability of extinction rises rapidly are the rule. The importance of thresholds needs to be taken into consideration during evaluations of "incidental take." A determination of the consequences of incidental take should be based on the effect it would have on the process of restoring the species to its safe minimum population density. Thus, if the damage from incidental take was estimated to cause a 5% loss in the population size of a listed species, the consequences of that additional mortality on the likelihood of extinction could be shown explicitly through a population viability analysis. Furthermore, because PVAs emphasize the principal causes of a species' vulnerability to extinction, alternatives to the proposed action, such as mitigation, could be considered and evaluated.

In the broadest sense, the implementation of the Endangered Species Act is a process of risk assessment and risk management. Assessing risk of extinction, which is the function of the listing process, is a purely biological procedure. Any associated economic consequences that might arise from designating an imperiled species as endangered or threatened are not, and should not be, part of the risk assessment equation. However, in the "risk management" phase which follows the listing of a species, the Act appropriately permits the consideration of possible economic costs and infringement of personal property rights in the designation of critical habitat, in the determination of allowable harm to the species (takings and jeopardy), and in the development and implementation of recovery plans.

Formal population viability analyses could assist this process because a given level of probability of survival for a specified time period might well be achieved in many different ways, some of which would impose more restrictions on private land owners than others. PVAs could identify those options that would achieve maximum protection while reducing costs and lowering political controversy.

Science can play a valuable role in stimulating the consideration and evaluation of a wide range of actions at the time a federal action is contemplated. All too often formal consultations are limited to a consideration of a small number of options that are proposed as ways of avoiding harm to some listed species. Impacts of the options on other species often are not considered, and options that might be better than those being evaluated are rarely discussed. Broadening the range of options being considered increases the up-front costs, but if superior options are identified and eventually implemented, long-term costs may be reduced substantially.

Biologists in the agencies responsible for implementing the Endangered Species Act generally try to use the best scientific information and methods available. Failure to use the best available information and methods is generally due to inadequate budgets and overworked staff. Incorporating greater scientific rigor into the recovery process will result in initially higher costs because better methods for identifying species at risk, formal population viability analysis, and adequate habitat restoration and recovery programs all require greater investment. However, if the best available science is used consistently, common patterns will emerge and species protection and recovery will become more cost-effective. In other words, as experience is gained, each new case can build upon the results of previous cases. Rather than treating each new species to be protected as a totally novel situation, more powerful general rules can be applied and the process thereby simplified. The rapidly growing field of Conservation Biology, with its own professional, scientific Society of Conservation Biology, is already providing some of the needed information.

Furthermore, the development of general rules that are well-grounded in both experience and theory, can be useful in predicting which kinds of species and circumstances are likely to be sensitive to disturbance from human activities and in evaluating acceptable alternatives to the proposed actions.

In many regions of the United States, particularly the West Coast and the Southeast, threatened and endangered species occur on private land, and the concurrence of landowners will be required to protect the habitat of the species and to implement species recovery plans. This situation generates a need for interdisciplinary studies by resource economists and ecologists. The objectives of these studies should be the development of models and field approaches for determining least-cost solutions to habitat protection.

Furthermore, the pathways to these solutions should be "user-friendly" so that landowners can identify with the process. As an example of this approach, Liu (1992) developed a model for pine plantation management that shows the effects of different tree harvesting patterns and rotation lengths on the population size of Bachman's sparrow. This model shows how the real opportunity costs of forgoing the most profitable management plan are related to the probability of survival of Bachman's sparrow.

3. Use of Science in Development and Implementation of Recovery Plans.

When a species is listed, the Endangered Species Act requires that a recovery plan be developed. The ultimate goal of the recovery plan is to recover the species in its natural habitat to such a degree that it can be delisted. However, by the time a species becomes eligible for listing, its habitat is often destroyed or badly degraded, the population is decimated, and its genetic diversity seriously eroded. Therefore, scientific information is especially needed for setting population goals, captive breeding and release, and habitat protection and restoration.

(a) Setting Goals for Recovery. The first goal of a recovery plan is to stop the population decline before the species is on the brink of extinction. If listing as an endangered species was warranted, a recovery plan usually must aim for a population size significantly greater than the size at the time of listing. A good recovery plan for an endangered species typically has three goals for achieving viable populations. First, it calls for the establishment of multiple populations, distributed so that migration among them is possible, so that a single catastrophic event cannot wipe out the whole species. Second, it moves to stop known threats that guarantee the continued decline and eventual extinction of the population. Third, it plans for achieving annual population growth rates greater than zero, which will increase the size of populations to levels where demographic and normal environmental

uncertainties are less threatening. Doing so requires careful analysis of the habitat requirements of the species and the distribution of suitable habitats in the landscape.

Analyses to determine long-term recovery goals and programs for attaining them are a vital component of recovery plans. However, because their development may require considerable time, short-term interim goals may be needed to prevent the species from becoming extinct while long-term plans are being developed. Interim population goals should be biologically attainable during the first years of the recovery process. One exception to setting larger recovery goals is if a species were naturally restricted to a very small area. In such a case, it might be listed as endangered, but recovery might require only removal of the threat it faces, in the restricted area.

General tentative guidelines for establishing viable population sizes are available (e.g., Gilpin and Soulé 1987) but these target population goals are no more than rough estimates and should not be viewed as substitutes for a more thorough analysis. Interim populations goals need to be flexible and readily adjustable. For example, an appropriate goal over a three-year period for a rapidly reproducing species might be the establishment of three semi-isolated populations with a combined population size greater than three times the original population size at the time of listing. For species with low reproductive rates, an increase in the size of the population of that magnitude within a few years may not be possible. Although interim goals are necessary, population viability analyses should begin immediately so that long-term population goals can be established and the most important factors threatening the species can be identified in a timely manner.

It is always tempting to set as a recovery goal a population of a specific size and spatial distribution. For many species, however, a goal of a relatively constant population is biologically unrealistic and probably intrinsically undesirable. Many species live in unstable, fluctuating environments, and their populations have historically fluctuated together with the states of their environments. For example, many species depend upon habitats that are maintained by periodic fires, droughts, or floods. Populations of such species inevitably fluctuate greatly in space and time. Realistic management goals must reflect this biological reality.

For example, the 1986 recovery plan for the Snail Kite (*Rostrhamus sociabilis*) in the Florida Everglades sets an interim population goal for reclassification from endangered to threatened of an "annual average of 650 birds for a ten-year period with annual population declines of less than 10% of the average." However, kite numbers vary, and have probably always varied, considerably according to surface water conditions, which change dramatically along with drought cycles in southern Florida. Achieving a population having the stability outlined in the interim population goal is probably unattainable. Also, attempting to achieve great population stability might well lead to management interventions that in the long term reduce the quality of kite habitat and,

hence, the long-term viability of the population. However, it is generally useful to establish critical minimum population sizes below which extinction probabilities become unacceptably high even if they are sustained for only short time periods.

(b) Captive-breeding and Translocation. Reintroduction of captive-bred individuals and translocation of individuals between populations are often components of recovery plans. However, captive breeding programs are expensive, can save only one species at a time, and can be used only rarely because available facilities are limited. Also, because unexpected undesirable consequences may arise, captive propagation programs are risky. Deleterious genes may arise in captivity, or individuals released in areas other than the ones from which they or their parents were taken may not be adapted to the environments in which they are released. Diseases may be carried by the reintroduced individuals. Behavioral traits may develop in captivity that prevent individuals from functioning appropriately in nature. For these reasons, careful attention must be given to the sources of individuals for release to the wild and their treatment in captivity. Similar considerations apply to introductions of plants propagated in botanical gardens and other artificial environments.

There is also a danger that wild populations may be depleted to obtain individuals for captive breeding programs, although in special instances, such as occurred in the case of the California Condor in the 1980s, capture of all remaining individuals in the wild population may be warranted. Captive breeding programs may draw attention away from the need to protect and restore habitats for the focal species. Successful species recovery plans ultimately depend on adequate amounts of protected habitat. Captive-release or translocation programs of native populations, although important, cannot substitute for the failure to protect or restore natural habitat (Povilitis 1990). The danger is illustrated by the Gila topminnow, which was reclassified from endangered to threatened because artificial habitats were successfully restocked with captive-bred fish. However, the natural habitat continued to degrade from the effects of alien mosquitofish and agricultural water withdrawals (Simons *et al.* 1989). The continuing loss of the fish's natural habitat makes its survival in artificial pools increasingly improbable.

(c) Habitat Protection and Restoration. Often the best approach for restoring habitat is to control the source of the degradation and let nature take its course. Unfortunately, habitats are often very badly degraded or too small to contain adequate heterogeneity and natural disturbance regimes. In those situations, active management is needed to restore and maintain the habitat. Habitat restoration and ecological management are critically important to the species recovery process. Methods to restore and manage habitats are not yet well-developed, but the field of

Restoration Ecology is growing rapidly (Jordan, Gilpin, and Aber 1987; MacMahon and Jordan 1994). Its practitioners increasingly should be able to provide insights and guidance for restoration efforts in a variety of habitats.

Critical components in the development of a recovery plan for a listed species are determination of the current extent of its suitable habitat, assessment of the quality of the remaining habitat, and establishment of priorities for the areas to be targeted for restoration efforts. Restoration efforts can also be designed to test hypotheses about how the ecological community in question functions and the roles of the various species that might be reintroduced as part of the restoration project. Ideally, several different restoration projects should be initiated in different patches of a given habitat so that more than one hypothesis about the functioning of the community can be tested. Such a procedure would increase the probability that the results of specific restoration projects are generalizable to other habitats, while increasing the speed of restoration of the habitat in question by identifying more promising restoration techniques.

C. Delisting, the Ultimate Goal of the Endangered Species Act

Delisting is the ultimate objective of the Act. Measures of progress toward this goal include prevention of extinction and slowing the rate of population decline. The criteria for delisting should be established early in the recovery process, and they should be based on sound biological information. As discussed previously, delisting criteria should be consistent with natural fluctuations in the habitats supporting a species.

However, results obtained as recovery was underway may require modifications in the original criteria as better information about habitat requirements and population dynamics of the species become available.

IV. CONCLUSIONS

Protection is not afforded to species and their habitats under the Endangered Species Act until species are already threatened with extinction. By that time, both the range of a species and its total population size are likely to have been seriously reduced. Recovery under these circumstances is likely to require major habitat restoration efforts and, possibly, captive propagation. These activities are more expensive and are less likely to be successful, the later in the decline of the population they are initiated. Therefore, the goals of the Endangered Species Act are more likely to be achieved, and to be realized at lower total cost, if preservation of biological diversity were approached in a more proactive manner.

The most important elements of a proactive approach would be to identify habitats and biological communities that are being seriously reduced in area or are being otherwise degraded and then to establish policies that prevent further losses of those habitats and restore degraded parts of them. Such an approach could not replace a species-by-species analysis because not all species are threatened by habitat loss and threatened species require different habitat types. Nonetheless, a habitat-based, proactive approach should greatly reduce the number of species that would need to be considered for listing. In addition, a proactive approach, by identifying habitats experiencing or likely to experience serious losses would allow federal agencies to initiate preservation plans while more options are available than will be present at such time when particular species would become candidates for listing. Habitat- and ecosystem-level planning can be accomplished under the existing Endangered Species Act, particularly through the use of critical habitat designations for already listed 'umbrella species." For both scientific and economic reasons, such proactive planning needs to be greatly increased. The establishment of the National Biological Service is an important step in developing the data needed for proactive, habitat and ecosystem level planning.

However, if the protection of habitats and ecosystems is to become an important means for conserving biological diversity, some important questions need to be addressed. Ecosystems are not closed systems; they are dependent on outside conditions. Ecosystems and habitats can be recognized at many scales. Aquatic ecosystems may range in size and complexity from small ponds to the Great Lakes. Determining the most appropriate scales for protecting them will require considerable information and complex biological judgments. New legislation for ecosystem-level protection, designed to complement and strengthen current legislation, could greatly assist protecting the nation's renewable natural resources, including its rich biological diversity. An ecosystem approach could help to reverse the slide towards extinction by preventing habitat degradation. The Endangered Species Act would then function as the safety net for those species whose survival cannot be guaranteed within the protected ecosystems.

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NEWS

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SCIENTIFIC FOUNDATION OF ENDANGERED SPECIES ACT IS STRONG SAYS SCIENTIFIC SOCIETY REPORT

The Ecological Society of America, a 7,500 member professional organization, today released its latest scientific consensus report, "Strengthening the Use of Science in Achieving the Goals of the Endangered Species Act." A committee of nine ecologists was charged by the Society to address the ecological issues relevant to reauthorization of the Endangered Species Act.

Like the recently published scientific report of the National Research Council, the independently conducted, peer-reviewed report of the Ecological Society of America finds that the Endangered Species Act is firmly based on scientific principles and suggests the establishment of new policies to prevent further losses of key habitat.

"It is important to understand that proactive habitat protection is needed in addition to species-oriented protection efforts if the goals of the Act are to be achieved in a scientifically sound, cost-effective manner," said Gordon Orians, member of the Committee and President-Elect of the Ecological Society of America.

"Re-establishing a species on the cusp of extinction usually requires enormous effort and expense," explained Orians. "The goals of the Endangered Species Act are more likely to be achieved, and realized at lower total cost, if steps are taken to help prevent populations from

--more--

spiralling downward in the first place. One of the best ways to accomplish this is to maintain habitats important to biological communities."

Major conclusions of the Ecological Society of America report include:

- The 1973 Endangered Species Act is a powerful and sensible way to protect biological diversity, and contains the procedures and mechanisms with which to achieve this goal.
- On the basis of science, the most important priorities to use in deciding which candidate species to list are: 1) number of other species that will benefit from the listing; 2) ecological role of the species; 3) the organism's recovery potential; and 4) its taxonomic distinctness.
- Formal Population Viability Analysis offers a method to identify how a species' survival potential can be maximized in the least controversial manner.
- The likelihood of restoring the viability of an endangered species is enhanced when: 1) recovery plans seek to achieve a population distributed in suitable habitats across the landscape; and 2) these plans are developed and implemented expeditiously.
- Additional programs for ecosystem-level protection that would complement existing legislation offer promise for a proactive approach that would effectively protect our Nation's biological heritage at lower long-term cost.

"Scientific, socio-economic, and ethical issues are components of all science policy decisions," said Judy Meyer, President of the Ecological Society of America. "We hope that this report, which analyzes the scientific foundations of the Act, will assist policymakers in their efforts to ensure that biological science plays its appropriately strong role during the reauthorization process."

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To receive of a copy of "Strengthening the Use of Science in Achieving the Goals of the Endangered Species Act: An Assessment by the Ecological Society of America," contact Gabriel Paal, ESA Public Affairs Office, 2010 Massachusetts Avenue, NW, Suite 400, Washington, DC 20036; ph: 202/416-6181; fax: 202/833-8775; e-mail: gabriel@esa.org.

The Ecological Society of America has produced other reports focusing on possible ecological consequences of the release of genetically modified organisms, delineation of wetlands, and ecological research priorities.

The Ecological Society of America (ESA) is a scientific, nonprofit, 7,500-member organization founded in 1915. Through ESA reports, journals, membership research and expert testimony to Congress, ESA seeks to promote the responsible application of ecological data and principles to the solution of environmental problems. ESA publishes three scientific, peer-reviewed journals: *Ecology, Ecological Applications,* and *Ecological Monographs.* Information about the Society and its activities are published in the bi-monthly *Newsletter of the Ecological Society of America.*

Testimony to

The Senate Committee on Environment and Public Works'

Subcommittee on Drinking Water, Fisheries and Wildlife

July 13th 1995

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Extinctions have always been a part of Earth's history. This does not mean that the rate of modern extinction is normal. In a major review to be published in the journal *Science* on the 21st July 1995, my colleagues and I document just how abnormal is the current situation. What we now experience are rates a thousand times normal. The future will be worse. Unless we act, humanity will drive a large fraction of the planet's species to extinction within the next century.

Some popular accounts of extinctions (and the role of the Endangered Species Act in preventing them) caste doubt on these conclusions. They remind me of my biannual nightmare of grading bad term papers. Easily verified information is presented incorrectly, or otherwise misinterpreted, or misquoted. In my written testimony, I've included reviews showing how badly bungled some of these accounts are. I will not speculate on why a minority of journalists feel so confident in their abilities to reject the consensus of so many scientists. I pray that they will not feel qualified to extend their mission to my father-in-law's profession of brain surgery.

In small part, we scientists play into the hands of journalists who see in our debates the controversies that sell books and newspapers. We scientists have made many predictions about the future of biodiversity. We do this to see how sensitive our conclusions are to the assumptions we must make. Certainly, we'd like to have more precise estimates about rates of extinction. In one approach, my research group combines satellite imagery and on-the-ground biological surveys. Whatever the uncertainties, no ecologist has predicted less than massive extinction.

Sadly, the United States houses several of the Earth's extinction "black-spots". The Hawaiian islands have already lost most of their bird species, many of their plants, and now are home to more endangered species per square mile than almost any other part of the planet. In the lower 48 states, we've lost large numbers of fish and other freshwater animals. Extinction is a national concern.

I have been privileged to work on endangered species with many outstanding scientists in Federal agencies. My experiences have taught me that the Act protects not just endangered species, but many other species, the ecosystems that house them, and, crucially, areas that are so valuable to us.

In Hawaii, island-wide biological surveys identified those areas richest in endangered birds. With the help of The Nature Conservancy, the Fish and Wildlife Service purchased some of the most important areas, providing permanent protection for many other species of animals and plants. Following the recommendations of the National Research Council, the Fish and Wildlife Service has brought back from the very brink of extinction a bird called the 'alala. And, once again, in acquiring its habitat, have protected much of the islands'

unique biological heritage. The Act has been crucial in protecting Hawaii's tropical rainforests and their inhabitants.

In Florida, our current work involves a small, obscure, endangered sparrow that we call Goldilocks. It requires water levels that are "just right" — not too wet, not too dry. The Act requires that we protect it and, in doing so, it ensures that we manage ecosystems skillfully. It forces the correct hydrology, and thus protects very large parts of the Everglades ecosystem and its constituent animals and plants.

No endangered species has been pilloried more than the Snail Darter of Tennessee — the small fish that held up the construction of the unwanted Tellico Dam. What would we have saved had the Act been upheld? First, the family farm of one of my former undergraduates. Second, a fine trout stream — for trout fishermen tried to stop the dam long before other environmentalists. Third, burial grounds sacred to Native Americans. And, yes, a river rich in species. Only unsupported anecdotes about the Snail Darter argue that the Act pitted species against people. Let's recognize that the real controversy was over different visions of our own future.

That brings me to the Great Smoky Mountains National Park. Three generations ago, the debate over saving the last old-growth forests in the eastern United States closely resembled today's debate over the forests of the Pacific Northwest. Had the Act been in effect 80 years ago, one can easily imagine the headlines of "salamanders versus jobs". Yes, logging large hardwoods is now an extinct profession. Before we decry that particular cost of environmental protection, please notice that this Park attracts ten million visitors in a good year, and several large communities depend upon their business. If the debate about the Act reduces to our considering its economic costs, then let us carefully examine its prior history in this regard. There are many cases where it has enriched our lives.

APPENDIX

In my verbal testimony, presented above, I criticize the poor scholarship in a number of popular accounts of species extinction issues written by non-scientists. In what follows, I have assembled a small sample of detailed critiques. These are broadly typical of others I have read. My selections are simply those that have been easy to obtain over the internet in the week or so I had to prepare this testimony.

In each case, I have added my own comments where I think the criticisms are in error. In most of these cases, the criticisms have been too kind.

Easterbrook's A Moment on the Earth

Easterbrook writes: "North and west of New York City and London and Chicago, south of Paris and Bonn, east of San Francisco and Moscow, in all directions around Atlanta and Denver and Warsaw and Madrid, and in many similar locations worldwide, extensive tracts of habitat that have known only occasional human intervention abut centers of mechanistic human excess." (p. 9).

"Only a small portion of Earth has been altered significantly by men and women" (p21)

This book is rife with errors, — like these two amazing assessments. I can only conclude that Mr. Easterbrook does not consider the colonists who cleared most of the forests from eastern North America to be human. These are not isolated problems.

The first review is by John Harte, an environmental scientist, who is the author of *The Green Fuse: An Ecological Odyssey*, and *Consider A Spherical Cow: A Course in Environmental Problem Solving*, as well as numerous technical articles on global warming, acid rain, ecotoxicology, biochemistry, and other environmental topics. He holds a joint professorship in Energy & Resources and in Environmental Science, Policy, & Management at the University of California, Berkeley.

If you search carefully within this comprehensive survey of environmental issues facing the world today, you can find pockets of commonsense and clear thinking. So, first, credit where credit is due. Easterbrook favors family planning programs that would greatly decrease the rate of human population growth. He supports efforts to increase energy use efficiency, excoriates Detroit for resisting fuel efficiency and emission reduction standards, and supports a carbon tax. He debunks the notion that environmental protection must lead to economic hardship, stating that "no important academic researcher has supported the notion that environmental regulations strangle the economy" (p. 323). He

recognizes that private property rights are not absolute in the U. S. and that such rights have to be balanced against the larger society's interests, which may include environmental protection. Most emphatically, he sings the praises of the array of environmental protection laws that the U. S. passed during the past 3 decades and that the U. S. Congress is now attempting to dismantle: "Looking back on the present a few decades hence, society will consider every environmental program running now to have been a bargain, and wish more programs had been started sooner" (p. 210).

These views happen to be well supported by the corpus of environmental science of the past few decades and I believe most of them are also supported by the majority of the U. S. public. So what's not to like? First, this reviewer found the numerous insults and innuendoes directed at distinguished intellectuals and public figures (from John Muir and Rachel Carson to Al Gore, Thomas Pynchon, and E. O. Wilson) particularly offensive. Rather than thanking the people like Carson, whose research and public writings have led to the regulations Easterbrook praises, the environmental scientists are lined up and shot.

Such journalistic behavior would be incomprehensible were it not for the second gross defect of this book, the identification of which renders understandable, if not acceptable, the first. On far too many of the 700 pages of this vexing book, I found examples of mathematical malpractice, of misquoted and misinterpreted segments of scientists' writings, and of illogical thinking. What Easterbrook has done, in effect, is to create a scientific figment, a world all his own in which a vast, peer-reviewed body of scientific accomplishment is trashed and replaced by a set of stories. The stories are called, collectively, "ecorealism". The catch phrase provides the illusion that this book is the true basis for environmental protection, that Easterbrook, and not the "enviros" as he calls the environmental scientists, is the true prophet of a sustainable future.

A lengthy review produced by the Environmental Defense Fund (available on request by calling 212-505-2100) details many of the scientific errors in the book. I have room here to cite a few among those that most annoyed me. Consider global warming, my own current area of research. To argue that our impact on climate is insignificant, he confuses gross flows of carbon dioxide to the atmosphere with net additions of this greenhouse gas to the atmosphere (p. 23). To downplay the threat of global warming he conflates effects on local scales with global-averaged effects and, ignoring time lags in the climate response to a changing atmosphere, argues falsely that the observed rise in temperature is inconsistent with climate model projections (chapter 17). To argue that climate change does not threaten agricultural productivity, he blurs the distinction between effects of air temperature and effects of soil moisture on crop yields (p. 294). Invoking the Gaia concept, he tries to reassure readers that ecological responses to global warming will mitigate the warming, thereby ignoring numerous documented positive feedback linkages between ecosystems and climate that will amplify climate change (p. 292). He distorts the conclusions of a

poll of scientists' attitudes about global warming by conflating a runaway greenhouse effect (the boiling away of the oceans) with substantial but not runaway climate change (p. 278). And he falsely accuses the National Academy of Sciences of backing away from its high end forecasts of the magnitude of global warming (p. 286).

To downplay the environmental destructiveness of tropical deforestation, he argues that it occurs at a rate comparable to 19th century first-world deforestation and that now many deforested areas in the north are reforesting; this ignores documented vast differences in species ranges (and therefore species loss in response to habitat loss) and in forest recovery rates between topical and temperate zones (chapter 31). To make an argument that Federal policy on protection of endangered species is internally inconsistent, he either carelessly or deliberately conflates two very distinct species of flowering plants (p. 571). To ridicule efforts to save old growth forests and the biological riches they contain, he dismisses the overwhelming body of information on decline in both the habitat and the population of spotted owls in the Pacific Northwest and misinterprets the work of a leading biologist studying genetic variation in spotted owls (chapter 13). To justify the rosy picture that agriculture does not threaten species habitat, he equates farmland taken out of production with farmland that has reverted back to pre-agriculture conditions (p. 14).

Throughout the book, he propagates the simplistic notion that the relative toxicity of the components of our environment, including our diet, is determined by the masses and numbers of toxic substances they contain, thereby ignoring potency. He similarly suggests that the environmental cost of alternative products such as paper versus plastic bags is determined by the weight of material that goes into their manufacture. And he wrongly states that anthropogenic stratospheric ozone loss has only been observed in the Antarctic and that ultraviolet radiation to earth's surface has not increased in response to ozone thinning (chapter 29).

Going beyond the specific scientific confusion, Easterbrook asserts that nature might feel regret to see humanity go extinct (p. 150), that grizzly bears are selfish because they individually take up more space than do people (p. 381), that environmental scientists are godless (p. 134) and do not want to see resource-efficient development in the third world (p. 587), and that Clarence Thomas's views on so-called "natural law" are a sound foundation for future environmental policy (p. 126). He wonders whether disease is a "flaw in the system" or perhaps "evolved with a purpose", and concludes it is a flaw because nature directs so much attention to the mounting of defenses (p. 149).

At the core of much of this confusion is a single driving notion, an ideological orientation that, alas, appears to derive from a misreading of a classic in environmental literature. Early in the book (p. 6), Easterbrook twists the meaning of Aldo Leopold's felicitous phrase "thinking like a mountain" (from A

Sand County Almanac) to provide a philosophical underpinning for the rest of the book, for his lack on concern about threats to climate, the ozone layer, and biodiversity. Leopold was actually referring to how a mountain might perceive the consequence of killing wolves — the denudation of its vegetation when the deer population increases. He urged his readers to think beyond their desire to have more deer to hunt. Easterbrook construes the phrase to mean that we should think on geologic time scales, thereby putting into perspective the vast changes in our environment unleashed by human activity. This leads him to assert that because the world has been repeatedly struck by large asteroids that wiped out half or more of the species on earth, we should therefore not be concerned about the current comparable extinction crisis brought about by deliberate habitat destruction. Such an interpretation is, of course, the antithesis of Leopold's message.

Looking beyond the poor scholarship, we must ask the question: Why is this book being touted in some quarters as an antidote to so-called "environmental extremism"? I believe scholars in all fields should be asking that question because the book's apparent market success represents a threat to rationality and the integrity of public discourse. Just as I fear innumeracy and illiteracy, so I fear the ascendancy of a standard of debate on matters of vital importance that is based on the layers of irrationality found in A Moment on the Earth. The extent to which this book is taken seriously will be a kind of barometric reading indicating how poorly we are educating ourselves — and how ill-deserved is our species name *sapiens*.

As a university educator, the book motivates me to continue helping students develop the capacity to critically read text and analyze data. Numerous excerpts from A Moment on the Earth can usefully be adapted for homework assignments — bones for the students to chew on.

As an environmental scientist and contributor to public policy debates surrounding environmental issues, I found a broader take-home message. The political appeal of Easterbrook's book lies in its comforting vision of a benign future; a sort of "God is on our side" theme runs through it. But those who get the science right also have reason to portray an optimistic future. The fundamental reason for optimism about environmental quality is that there is a confluence of interest between humanity and the rest of nature. A host of services provided by undisturbed ecosystems render nature our steward. These ecosystem services range from pest and flood control and soil formation to climate moderation and maintenance of air and water quality. If society is to exercise enlightened self interest and act in accord with that insight into stewardship, the value of ecosystem services must be better estimated, explained to the public, and then folded decision making processes. Monetary estimates may never capture these values, but then we should be developing other ways to express them. This is a major challenge to the natural and social sciences, and

the humanities as well; accepting it is the best rebuttal I can think of to this vexing, careless book.

A much more detailed analysis of Easterbrook's book has been produced by Drs. Michael Bean and David Wilcove of the Environmental Defense Fund. I will, however, include only comments on those two chapters that specifically deal with the topic of my testimony. I have added my comments as appropriate.

Chapter 13 (which deals with the case of the spotted owl)

The chapter on the northern spotted owl in *A Moment on the Earth* is so full of scientific errors and inaccurate assumptions that its conclusion — that the threat of extinction faced by the owl is overstated — is essentially worthless.

To his credit, Easterbrook is supportive of the Endangered Species Act and the efforts of environmental groups to save species in general. But in opposing the conclusions of independent biologists that the northern spotted owl faced extinction, Easterbrook neglects to cite the voluminous scientific evidence for this position, as contained in numerous peer-reviewed studies. Most importantly, he neglects to mention the definitive findings of the meeting in December 1993, in Colorado, in which biologists and statisticians from throughout the United States and Europe undertook the single largest population study of a bird of prey, and concluded that the northern spotted owl was indeed in rapid decline (1).

A Moment. . . , p. 211: "The [four northern spotted] owls were living wild in a habitat where it is presumed impossible for them to exist: a young woodland, not an old-growth forest. And they were living in a place, California, where environmental doctrine holds spotted owls are rare birds indeed."

Correction: Easterbrook's caricature of "environmental doctrine" is wrong on two counts. For many years, it has been well known to owl biologists that the thin coastal redwood belt of northwest California harbors many owls. But this area makes up only a small part of the owl's habitat, and, despite Easterbrook's suggestion, few northern spotted owls live in second-growth forests elsewhere in their range (except for a relatively small area in the eastern Washington Cascades) (2)

Indeed, the scientific panel headed by Jack Ward Thomas of the Forest Service, which reaffirmed in 1990 that the northern spotted owls were at risk of extinction, clearly observed the relative abundance of the birds in this area: "An interesting exception to the usual time needed for a forest to develop from bare ground into suitable owl habitat occurs in the coastal redwood forests of northwestern California, where owls occur in relatively high numbers in stands 50 to 80 years old. This exception is likely attributable to a unique set of conditions.. . . Because these unique conditions occur only in about 7% of the

owl's range, we strongly caution against assuming that they will occur elsewhere."(3).

A Moment. . . , p. 213: "The owl-extinction alarm is premised on two notions: that spotted owls live only in ancient forests and that a last, fragile, dwindling population of the northern spotted exists mainly in Oregon and Washington."

Correction: As he does throughout the book, Easterbrook sets up a straw-man argument so that he may demolish it. Biologists and environmentalists do not base their concern about the northern spotted owl — nor did the U.S. Fish and Wildlife Service decide to list the owl as an endangered species — on the notions the author cites. Instead, three main points proved decisive: One, the downward trend in the habitat of the owl was undeniable. Two, owl populations were declining rapidly, based on statistical analysis of the trends in the birth and death rates of sample owl pairs. Finally, existing regulations were deemed insufficient to reverse the habitat and population declines.(4)

A Moment. . . , p. 214: "In 1993 Steve Self and Thomas Nelson, researchers employed by Sierra Pacific, a California timber company with a progressive reputation, projected spotted owl populations.. . . They estimated the state home to 6,000 to 8,000 pairs of spotted owls.. . . If Self and Nelson are even close to correct, the spotted owl population is not in the zone of an extinction emergency."

Correction: Contrary to Easterbrook's implications, the total numbers of northern spotted owls, in California or in the rest of the Pacific Northwest, were never a primary issue in the question of whether to list the owl as an endangered species (see above). Indeed, the definitive Thomas report, which supported the owl's listing, clearly stated that "current data do not permit a statistically reliable population estimate. The approximately 2,000 pairs located during the past five years or reconfirmed from pre-1985 surveys represent an unknown fraction of the total population."(5)

A Moment. . . , p. 214: "[Timber company biologist Lowell] Diller is among the first to look for spotted owl in successional or nonancient California forests, not beginning his work until the bird was "listed" under the Endangered Species Act. Diller thinks that `if research had started in California rather than in Oregon, the spotted owl would not now be considered endangered. It would be seen as a prolific, genetically secure bird.'"

Correction: Northern spotted owl population research started at about the same time in California as it did in Oregon and Washington, well before the owl was listed. And Lowell Diller was not among the first to look for these owls in the second-growth forests of California. Gordon Gould of the California Department of Fish and Game began studies of these owls in the mid-1970's. R. J. Gutierrez and his students began work in 1980. In fact, some of the strongest research in

the field relates to northern owl populations residing in California second-growth forests (6).

A Moment. . . , p. 217: ". . . private timber firms harvest their lands at a profit, without subsidies, using selection logging or the related shelter-cutting, ecologically responsible practices that generate more jobs than clear-cutting."

Correction: In fact, many private timberlands in the United States, including some of those in the Northwest forests that are home to the northern spotted owl, are harvested by clear- cutting (7). Furthermore, shelter-cutting, an even-aged logging technique, is closer to clear-cutting than it is to selection logging, an uneven-aged method of harvest.

A Moment. . . , pp. 217-218: ". . . clear-cutting can be defended as a nature-mimicking practice in some circumstances.. . ."

Correction: Logging does not mimic nature, since it removes most of the coarse woody debris (8)

A Moment. . . , p. 218: "Yet while [Eric] Forsman's paper is now celebrated as a founding text of owl doomsaying, he did not assert the spotted was falling extinct. Indeed Forsman found some of what Diller has found — the birds prospering in young timberlands . . ."

Correction: Incorrect. Eric Forsman concluded that the northern spotted owl was doing poorly in young forests, as measured by their population density (9).

A Moment. . . , pp. 218-219: "Yet rapid forest rebounds in the midst of commercial activity have been the pattern throughout the United States and Western Europe. Serious deforestation commenced in the United States roughly two centuries ago in New England, as timber was cut or woods burned for cropland. About a century ago, destructive logging practices began to end in New England.. . . New Hampshire was 50 percent forest in about 1850 and is 86 percent forest today.. . . Figures throughout New England are the same."

Correction: Forests have returned to New England, but without many of the species they once contained. New Englanders will look long and hard for passenger pigeons, woodland caribou, bison, and elk — all of which once lived in these forests but vanished as a result of hunting and deforestation.

S.L. Pimm The forest losses in the eastern U.S.A. during the last two hundred years are also discussed in my paper in *Science* (see introduction). These forest losses caused almost exactly the number of species extinctions as ecologists would predict. Far from providing comfort to those who think we can clear forests and not lose species, they confirm the predictions of massive species losses as tropical forests are lost.

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A Moment. . . , p. 219: "Formal warning of spotted owl extinction was not tendered until the 1986 Audubon report."

Correction: Concern for the survival of the northern spotted owl was expressed much earlier, by the U.S. Department of the Interior in 1973, for example, and by D. B. Marshall and other scientists in 1975 (10)

A Moment. . . , p. 219: "In the wake of that [Audubon] report conservation groups sued to have the northern spotted listed under the Endangered Species Act."

Correction: Environmental groups did not sue until government officials arbitrarily and capriciously — in the words of Federal District Court Judge Thomas Zilley — changed the conclusions of the owl status review and decided not to list the owl as threatened (11).

A Moment. . . , p. 219: ". . . a government science panel headed by the biologist Jack Ward Thomas concluded that 3,000 to 4,000 spotted owl pairs exist in the U.S. and to provide a margin of safety over the 1,500-pair extinction number, a minimum of 3,000 owl pairs must be protected."

Correction: Untrue. The Thomas panel neither concluded that 3,000 to 4,000 owl pairs existed (it agreed that the total number was unknown) nor did it cite specific numbers necessary for protection of the species (12).

A Moment. . . , p. 219: "In 1991 William Dwyer, a federal judge in Seattle, banned most logging in Washington and Oregon to carry out measures the Thomas report called necessary to assure survival of 3,000 owl pairs. At this point the notion of an owl doomsday was locked in legally."

Correction: Judge Dwyer merely issued an injunction until such time as the public agencies responsible for protecting the owl designed a credible conservation plan.

A Moment. . . , p. 220: "As the California spotted owl is not considered endangered it has never been surveyed for in methodical fashion, leaving its population not well known."

Correction: To the contrary, there have been many systematic surveys of the California spotted owl (12).

A Moment. . . , p. 220: "Some observers have long wondered whether there is really any meaningful difference between northern and California spotted owl. In 1990 George Barrowclough, an ornithologist at the American Museum of Natural History in New York, and Gutierrez of Humboldt State compared

proteins from the northern and California spotted owls. `No genetic difference was found' between the two, their report states. The researchers further found no statistically significant genetic differences between the northern and Mexican spotted owls . . ."

Correction: According to Dr. R.J. Gutierrez, one of the authors of the cited report, Easterbrook has completely misinterpreted these results. The authors specifically stated that the limited genetic analysis they undertook prevented them from concluding that no meaningful differences existed between the northern and California spotted owls. As for the Mexican and northern spotted owls, Barrowclough and Gutierrez did find notable differences between them, and concluded that the two may be different species altogether (14).

A Moment. . . , pp. 220-221: "The Mexican spotted roosts in woodlands adjacent to the deserts of the Southwest and Mexico: habitat utterly different from the moist old-growth forests doomsayers describe as the sole imaginable habitat for northern spotted."

Correction: The vast majority of Mexican spotted owls nest in the same types of habitats that northern and California spotted owls inhabit (15).

A Moment. . . , p. 221: "In 1994 Barrowclough began using genome sequencing, an advanced test, to determine whether there exist subtle DNA distinctions between northern and California spotted owls.. . . It's worth noting that Barrowclough calls both bird types `Pacific Coast' spotted owls, reflecting a feeling the two soon may be seen as one and the same."

Correction: The DNA analyses, now completed, demonstrate that there are substantial differences between the genes of the two kinds of owls, and that they are indeed two entirely separate subspecies (16). Moreover, the term "Pacific Coast owls" is merely a shorthand way to refer to the two subspecies that inhabit the Pacific Coast states, and implies nothing about their genetic similarities or differences (17).

A Moment. . . , p. 221: "Does a figure such as 10,000 pairs of spotted owl still sound perilously small? . . . it is significantly greater than the population nadirs of similar raptors that avoided extinction. The bald eagle was down to 417 known nesting pairs in the lower 48 states in 1963 and now has recovered to about nine times that number.. . . The peregrine falcon was down to about 1,000 breeding pairs in North America two decades ago and now has bounced back to an estimated 5,000."

Correction: The figure of 10,000 pairs derives from Easterbrook's erroneous conclusion that the California and northern spotted owls will be shown to be genetically identical. Furthermore, his argument is based upon a false comparison. The bald eagle and the peregrine falcon were threatened largely by

pesticides. When DDT was banned, both species had considerable amounts of suitable habitat in which to live and reproduce. The threat to the spotted owl, in contrast, is almost exclusively due to the loss of habitat. Indeed, there are many examples of species that rapidly became extinct when their habitat disappeared, such as the cerulean paradise-flycatcher (18).

A Moment. . . , p. 222: "Now many assert that owl numbers are less important than the demographic trend. That is, actual birds counted in `the laboratory of nature' mean less than prospective birds projected by computer model."

Correction: The demographic trend is established not by computer projections, but by an analysis of measured birth and death rates of sample owls, as observed in the field. The trend in owl numbers, scientists know, is more important than some poorly enumerated population size (19).

A Moment. . . , p. 222: "Since the late 1970s, pessimistic owl studies have been projecting population trends averaging around minus-five percent annually, suggesting total spotted owl numbers should have fallen drastically by now. Yet actual field surveys continue to find more birds than previously counted."

Correction: Easterbrook confuses survey efforts to find new owls with the survival and reproduction data of owls already located. Indeed, it is the latter evidence that has been considered crucial to demonstrate that the species is in danger of becoming extinct. That conclusion was unanimously shared by independent wildlife experts from government agencies, research institutes, and universities, who convened in Fort Collins, Colorado, for a December 1993 workshop on the northern spotted owl. Every Federal, state, private, and academic biologist who studied the owl was invited, as were statisticians and scientists from related fields to help in the analysis. Timber industry biologists were invited; only one attended, and he refused to share his data (20).

More than 50 experts participated in this workshop, and various statistical analyses were made from their combined observations, drawn from 11 studies and spanning the entire range of the northern spotted owl, including California second-growth forests. The result was the single largest population analysis ever done for an endangered species. Among those who shared their data, the conclusions were clear and unanimous: The northern spotted owl was indeed in serious and rapid decline. Across its range, its survival and reproduction rates were dropping, and these losses appeared to be accelerating (21).

A Moment. . . , p. 223: "By the theory that local variations in climate and diet convert creatures into different species, a black man who lives in Seattle, gets rained on, and eats salmon would be a different `species' from a white man who lives in stifling humidity in Louisiana and dines on gumbo. By this theory the human race contains hundreds of entirely distinct species. The typical northern and California spotted owls appear more alike than the typical American and

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Asian. But according to orthodox doctrine, the different people are identical while the similar birds are drastically different."

Correction: This statement reveals a serious ignorance of genetics and evolutionary biology. Speciation requires some sort of genetic barrier and time. Human beings can and do move long distances, mixing up their gene pool. When DNA is studied to ascertain the differences between members of various human races, humanity as a whole is found to be strikingly uniform, especially when compared to different animal subspecies.

As Steve Jones, professor of genetics at the University College, London, and editor of the Cambridge Encyclopedia of Human Evolution, has written: "Humans are a rather homogeneous species, perhaps because they evolved so recently.. . . Other creatures vary much more from place to place.. . . The genetic differences between snail populations of two adjacent Pyrenean valleys is much greater than that between Australian aboriginals and Europeans. That between the orangutan of Borneo and that of Sumatra, just a few miles apart, is ten times greater than the difference between any pair of human groups.. . ." (22).

A Moment. . . , p. 225: "Yet with the exception of Pacific Coast salmon, whose 1990s runs were unequivocal disasters, only a handful of the supposed 1,400 additional dying Northwest old-growth species has shown worrisome population trends in studies. Just one, a bird called the marbled murlet [sic], has been classified threatened under the Endangered Species Act.. . . About a half dozen plants in the region are `missing in action' — not observed recently, though known to prosper elsewhere.. . . So far in the postwar era there are no known extinctions of animals or vascular (loosely, green-stemmed) plants in the Pacific Coast forests.. . . Several mammals, among them the red vole and the fisher, are believed in decline. But so far zero known extinctions."

Correction: First of all, Easterbrook neglects to mention the approximately 7,000 species of arthropods that scientists estimate are closely associated with old-growth forests. Most of these species have not been studied carefully enough to know their population trends (23). More importantly, Easterbrook himself admits that a species of bird, several kinds of mammals, and a half dozen species of plants — in addition to the northern spotted owl — are declining or disappearing from Northwest forests. He also mentions the precipitous decline of the Pacific Coast salmon, which has led to the collapse of the area's once-thriving commercial and sport-fishing industries. How many signs do there have to be before an ecosystem is recognized to be in serious trouble?

A Moment. . . , p. 225: "Zero known postwar extinctions in the Pacific Coast forest belt. Combined with the prospect that there exist many more spotted owl than previously estimated, this raises the question of whether the owl instant doomsday, which has cost thousands of honest people their livelihoods and occupied the attention of presidents, is at heart a false alarm."

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Correction: To the contrary, it was the "instant doomsday" of economic collapse, as trumpeted by the timber companies, that has proven to be a false alarm. Three years into the imposed restrictions in logging, Oregon has posted its lowest unemployment rate in a generation, of just over 5 percent. Some rural counties show a rate of about 2 percent. Indeed, there are signs of impending labor shortages, and even the most timber-dependent counties in southern Oregon report rising property values and a net increase in jobs (24).

Moreover, instead of making boards from 300-year-old trees growing on public lands, lumber mills are substituting smaller trees from private tree farms. As the mayor of Springfield, Oregon, said, "Owls versus jobs was just plain false." (25).

A Moment. . . , p. 227: "Consider that from 9,500 (the White House's own number) to 85,000 jobs will be abrogated by the Clinton owl plan. The lost jobs are skilled, high-wage employment of the sort that real-world Americans who aren't lawyers or consultants need to send their children to college."

Correction: To the contrary, the average wage throughout Oregon has actually risen since the ban was placed on old-growth logging. And no net loss of jobs has occurred. Instead, many of the loggers who have lost their jobs are being retrained for high-skilled jobs in health care and high- tech industries. As Ed Whitelaw, professor of economics at the University of Oregon, has said, "These 100,000 job loss figures were just fallacious; they came out of a political agenda. Yet when I would say this, I was dismissed as an Earth-Firster or something." (26).

Chapter 30 (which deals with extinction worldwide).

Easterbrook's arguments in his chapter on endangered species are equally problematic. While disputing the conclusions of natural scientists and wildlife biologists that human activities are causing the planet to experience a loss of species of major proportions throughout the globe, he relies on inaccurate assumptions and faulty reasoning. Easterbrook also makes repeated technical errors, such as confusing different species.

Moreover, as in the spotted owl chapter, he fails to grasp the difference between the better counting of existing numbers of species with observed trends that show that many of these species are in decline. This is evident when he wrongly dismisses as contradictory the increasing scientific estimates of the total number of species on Earth, and the consensus of biologists that extinction is proceeding at a rate unprecedented since the close of the age of the dinosaurs.

A Moment. . . , pp. 556-557: "Roughly since the 1970s ecologists have claimed a rising degree of species loss caused by human activity. And in this same period researchers have supposed the natural world to contain far more species than

once believed. These two trains of thought are barreling toward each other on the same track."

Correction: These statements are not contradictory. Virtually all biologists agree that the world is facing an alarming loss of biodiversity, caused by human actions. (27). Based on current trends of habitat destruction, it has been estimated that between 1 and 11 percent of the world's species will be committed to extinction by the year 2015 (28).

Meanwhile, estimates of the total number of species now on the Earth are increasing, as biologists turn their attention to poorly studied groups of animals and plants in out-of-the-way places (29).

S.L. Pimm These two issues are also explored in considerable detail in my review in *Science*. In that paper, I show that the figure of 1% "committed to extinction" is absurdly low — it assumes that we will protect the planet in its current condition — and, moreover, preserve 90% of the species that are now declining towards extinction. For birds, 11% of the planet's species are on a track to extinction already and this rate will almost certainly accelerate. Simply, these estimates from EDF are on the conservative side.

A Moment. . . , p. 558: ". . . [the biologist Edward] Wilson . . . now projects a human-caused loss of 50,000 species per year, or 137 daily.. . . Under [this] loss estimate . . . about 1.1 million extinctions should have occurred globally since 1973. As America contains six percent of the world's land mass, a rough proration would assign six percent of that loss, or 66,000 extinctions, to the United States. Yet in the period only seven actual U.S. extinctions have been logged. There is a rather amazing gap between a projected 66,000 and a confirmed seven."

Correction: Here, Easterbrook's logic is based on scientifically inaccurate assumptions. First, he assumes that the distribution of species is roughly proportional to the land area. We know this isn't true. The rain forests, for example, occupy only 6 % of the Earth's land surface but contain more than 50 % of the world's species, in almost every well-studied taxon, including birds, fishes, and vascular plants (30). Of the approximately 250,000 known vascular plant species, about two-thirds reside in the tropics and subtropics, and in just three countries, Colombia, Ecuador, and Peru, almost one-sixth of the world's plants can be found on just 2 % of the world's land surface (31).

Easterbrook further assumes that rates of habitat destruction, the primary cause of extinctions, are roughly equivalent across the globe. This, too, is incorrect. Over the past decade, the tropical forests have been shrinking almost 1 % a year, on average, while the forests in the temperate areas of industrialized countries have increased slightly over the same period (32).

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A Moment. . . , p. 559: "In 1993 two authorities on biodiversity, Michael Bean and David Wilcove of the Environmental Defense Fund, tallied 27 extinctions of North American fish species and subspecies since the year 1950. The Bean-Wilcove estimate is double the rate for the first half of the century, again a clear danger sign. But it's also a fish loss of about one per year, a figure impossibly low if pessimists . . . are right about their projections of annual losses by the many thousands."

Correction: Easterbrook ignores that rates of extinction for particular types of species — in this case fish — may not be the same as rates for other types. Nor does he acknowledge that rates in one region may not be comparable to rates in other regions.

Moreover, Bean and Wilcove, the authors of the cited letter, are pessimistic about the overall rate of species loss in the United States. The number of species identified by the U.S. Fish and Wildlife Service as threatened or endangered continues to grow, as many natural areas in the United States that contain rare and localized species are developed.

A Moment. . . , p. 562: ". . . as Ariel Lugo, a Forest Service official in Puerto Rico, pointed out in a 1991 issue of Science, when pristine forests are cut they do not vanish; rather, the next step is usually new second-growth forests. Many species from the pristine forest adapt to the second-growth habitat and continue living.. "

Correction: First, forests don't always regenerate after being cut. Tropical rain forests, for example, are among the most fragile of ecosystems, containing thin soils, whose nutrients and minerals are washed away quickly by rain after deforestation. There are large areas throughout the American tropics where forests have been converted to cattle pastures, sugar cane fields, and other non-forested habitat. Many of these altered habitats will be very difficult if not impossible to restore to their previous, ecologically diverse conditions (33).

Second, many species are unable to adapt to second- growth habitat. An example from the United States is the now-extinct ivory-billed woodpecker (34).

S.L. Pimm As already discussed, the species losses following the forest clearings in the eastern U.S.A. are almost exactly what ecologists would predict.

A Moment. . . , p. 562: "Most troubling is a fundamental inconsistency in the work of Wilson.. . . It cannot be that a human-caused mass extinction occurred just 11,000 years ago, that ten million years must pass for nature to recover naturally from mass extinctions, and that today biological diversity is the highest ever."

Correction: These three points are not related to each other as if in mathematical equilibrium. Measured over millions of years, global biodiversity has increased, as demonstrated by the fossil record (35). Yet 11,000 years ago, roughly three-

quarters of the large mammals in the Americas were hunted to extinction (victims included long-horned bison, sabertooth cats, dire wolves, and ground sloths). The mammalian biodiversity in the Americas has not recovered (36). But because mammals are only a small proportion of the world's species — less than 0.3 percent, as currently described — the demise of some of them does not significantly change the numbers on species abundance (37).

The fossil record also indicates that it commonly takes millions of years for affected groups to regain their diversity following major extinction events.

S.L. Pimm First, the impact of Stone Age cultures is more dramatic than EDF contend. In the last 1000 — 4000 years, across the Pacific, Polynesian colonists eliminated about 2000 species of birds — or about 15% of the planet's total. There is no evidence that biodiversity is increasing following this slaughter. Indeed, it continues to decline. Second, we know from previous extinction catastrophes (like that at the end of the Cretaceous), that recovery times are on the order of tens of millions of years.

A Moment. . . , pp. 562-568: On these pages, Easterbrook presents what he calls "An Endangered Species Scorecard." He refers to the Endangered Species Act and says, "Let's take a look at what is happening on the list." He then proceeds to examine superficially 24 species or species groups for the trend in their numbers.

Correction: Of the 24, only 13 of his examples are unequivocally correct. In several cases he refers inaccurately to a group of animals as a single species — the kangaroo rat, for example (p. 563). There are many species of kangaroo rats, only some of which are on the endangered species list. Six times — or 25 % of his examples — he is simply wrong about whether a species or group of species is represented on the endangered species list: Mute swans, harp seals, tuna, sharks, wild turkeys, and mustangs have never made the list. He makes other errors within his inventory:

A Moment. . . , p. 563: ". . . political sentiment has run strongly against returning the wolf to Yellowstone, for fear that someday a child touring the park may be snatched and killed."

Correction: Though some people may have expressed this fear, the opposition to the reintroduction of wolves was and continues to be driven primarily by the fears of ranchers that it will lead to loss of livestock (38).

A Moment. . . , p. 567: "Mountain lions, also called cougars, were extensively bounty-hunted in the nineteenth century, and by the 1960s were believed extinct in North America . . . Oddly enough, the Fish and Wildlife Service still classifies the eastern cougar as extinct, yet nevertheless also classifies it as an endangered species that cannot be hunted."

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Correction: Mountain lions were never believed to be extinct in North America. The species has always been seen in the West (as well as throughout Central and South America). The eastern cougar, a particular subspecies of the mountain lion, is widely believed to be extinct, but unconfirmed sightings are reported from time to time (39).

A Moment. . . , p. 567: "...the steller [sic] sea lion . . . was listed as threatened in 1990 in response to a lawsuit by environmental groups, though about 65,000 steller sea lions are estimated to exist."

Correction: The Steller sea lion was listed because of sudden and severe population declines throughout its range, with an overall decline of 78 % between the 1950's and 1990. The greatest loss occurred in the eastern Aleutians, where 10,802 sea lions were counted in 1985 but only 3,145 in 1989 (40). Declines of this magnitude and rate, by any calculation, justify protection.

A Moment. . . , pp. 567-568: "In the last decade environmental litigators have pressured the Fish and Wildlife Service to list creatures at any sign of population decline, regardless of whether the decline appears to engage a threat of extinction. This means a common invocation of doomsday cant — that `more and more creatures are being listed as endangered every day' — is deceptive, since the listings are based on increasingly lenient criteria and now may be registered even when a creature is numerous."

Correction: The reality is really the reverse of what Easterbrook asserts. Most species are listed too late rather than too early to ensure their survival. According to a recent study, the median population size of an animal species at time of listing was just under 1,000 — well below the level generally considered viable; for plant species the median population size was fewer than 120 individuals, and 39 of these species were listed with ten or fewer known members. (41).

A Moment. . . , p. 570: "In the Western world at least, if most imperiled species could make it through the period from the 1940s to the late 1970s — when gross pollution was everywhere, development was unrestricted, and the Endangered Species Act did not yet exist — then those species have already passed the worst test that will be administered by man."

Correction: First of all, imperilment is a site-specific phenomenon, and over most of the globe, including major portions of the Western world, there are few laws to protect endangered species. Moreover, in much of the world, including many developed nations, habitat destruction continues unabated. Species whose habitats have been partly or entirely spared in the past, but are now finding themselves increasingly squeezed, will find little comfort in Easterbrook's unwarranted optimism.

Finally, in the future, human-caused climate change stands as one of the greatest threats to the survival of species, a prospect which, so far, the world has made little effort to forestall (42).

A Moment. . . , p. 571: "In Monterey County, California, the bush lupine, a native plant, is protected under the Endangered Species Act. About 200 miles away at the Lanphere Christensen Dunes Preserve in Humbolt [sic] County, California, where the bush lupine is not native, the Nature Conservancy has been trying to eradicate the same plant. It's hard to get your head around the notion that a plant can be so wonderful in one place that it deserves federal protection yet so horrible 200 miles away that it must be destroyed."

Correction: Easterbrook confuses two strikingly different species of lupine — one highly endangered, the other not. The endangered species is *Lupinus tidestromii*, or Tidestrom's lupine, which is not a bush lupine but a creeping perennial found in only three dune systems in California. The other species, which the Nature Conservancy is trying to eradicate from the Christensen Preserve in Humboldt County, is the *Lupinus arboreus*, or yellow bush lupine, a much more common plant (43).

S.L. Pimm One hopes that Mr. Easterbrook is more careful with his taxonomy of micro-organisms. Species in the genus, *Salmonella* can be both fatal and an essential ingredient of brie and camembert cheeses.

A Moment. . . , p. 572: ". . . species arriving from someplace else do not possess mystical superpowers. They are just different, and the local ecology needs time to react to the difference."

Correction: The fact remains that the introduction by humans of exotic species into ecosystems often leads to the imperilment and/or extinction of native species (as Easterbrook himself has pointed out, one paragraph earlier, with his example of the loss of several bird species on Guam after the accidental introduction of the brown tree snake). Indeed, of the known causes of animal extinctions since 1600, introduction of exotics ranks with habitat destruction as the most important (44).

A recent study found that the introduction of new species was a major cause for the listing of 41 species as threatened or endangered in the United States, and a contributing factor in the listing of 160 more, since the establishment of the Endangered Species Act (45). Another study found that over the past century, the introduction of new species has been a contributing factor in 68 % of the extinctions of North American fish (46).

S.L. Pimm EDF has again been more conservative in their criticism than I would have been. Our summaries show that introduced species have been the single leading cause of extinction historically. Their economic impact is enormous.

"The loss of several bird species on Guam" misses the point. The brown tree snake exterminated all Guam's land birds. Moreover, a local physician has told me that he estimates that about 50 people a year seek medical attention for snake bites. We ignore these warning signs at our peril. If this snake were to reach the Hawaiian islands its ecological and economic impacts would be devastating.

A Moment. . . , p. 573: ". . . many environmental groups, including the normally clearheaded Environmental Defense Fund, have succeeded in pressuring some states to outlaw possession of `exotic' species — animals endangered in other nations, but not in the U.S. — and have asked Congress for national legislation to that effect, depicting the notion of private U.S. stocks of endangered species from other shores as an odious hoarding. Yet . . . on a Texas ranch [there are] more representatives of the endangered scimitar-horned oryx than can be found in the species' native Africa.. . . It's hard to imagine how outlawing [this] collection will aid the survival prospects of the scimitar-horned oryx."

Correction: First of all, EDF has never tried to pressure any state to outlaw possession of exotics. Secondly, he defines "exotic" erroneously. Exotic species are plants or animals that have been introduced, deliberately or accidentally, into countries or areas where they do not normally occur; whether they are endangered or not is irrelevant. Thirdly, his suggestion that the rationale for such restrictions, to prevent "odious hoarding" by private collectors, is wrong. The motivation of states that have imposed restrictions on exotic-game ranching has been to prevent the transmission of diseases and parasites to native wildlife (47).

A Moment. . . , p. 575: "One looming absurdity is beetle protection [by the Endangered Species Act] . . . If beetles start receiving the instant-doomsday treatment, species protection will have veered into nonsense."

Correction: Would Easterbrook have the Act specifically exclude beetles from its protection just because there are thousands of species of beetles? Or because beetles are small? What could be the logic behind this statement, especially if he believes that, as he writes on the very next page (p. 576), "every animal on Earth may be vital to the cosmic enterprise"? Indeed, obscure creatures often yield things of value; witness the derivation of penicillin from a bread mold or an anti-leukemia drug from the rosy periwinkle.

S.L. Pimm Australian pastures were being seriously degraded because cow dung was not broken up by beetles (as it is elsewhere). The vegetation that grew in the nitrogen-rich dung was unsuitable and perhaps poisonous to the cattle. The solution was to introduce the appropriate species of beetle. Mr. Easterbrook should try telling Australian cattle ranchers that beetles are "nonsense."

An ecologically equivalent beetle is the subject of the first chapter of Mann and Plummer's *Noah's Choice* (see below). In pitting a beetle against the needs of

Native Americans, these authors seek to trivialize the Endangered Species Act. In doing so, they overlook the well-established connections between unloved and obscure animals and plants and our economic well-being.

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C.C. Mann and M.L. Plummer's Noah's Choice

The first review is also by Dr. David Wilcove. Dr. Wilcove deals with the general themes this book raises, and not its details. Those details are often hilariously wrong. I learned, for example, that the undergraduate lectures I received from Charles Elton were at Cambridge. And I've been telling everyone that I went to Oxford during those years that President Clinton was there. Overall, it's clear from the very large number of errors of the Elton-at-Cambridge type that, in the haste to publish, little of this book was fact-checked. Nobody could rely on this book as a source of information. It cannot be considered a useful, scholarly contribution.

Dr. Wilcove writes:

To prove their hypothesis, Mann and Plummer must show that the growing number of endangered species is causing more and more of our nation's land and water to be declared off-limits to valuable human uses and that many Americans are less healthy, less wealthy, or simply less happy as a result. It boils down to a question of social arithmetic: Do the costs of protecting wild species and wild places outweigh the benefits?

That's a valid question, and the authors cannot be faulted for raising it. Unfortunately, Mann and Plummer often resort to fear-mongering and selective use of the facts to build their case against the ESA. An entire chapter, for example, is devoted to the Karner blue, an endangered butterfly that inhabits areas where wild lupines have sprung up following a fire or other disturbance. Based on their conversations with several scientists, the authors conclude that saving the butterfly will require the acquisition of several large reserves, perhaps totaling 100,000 acres. They may be right about this, although I suspect much smaller reserves would do the trick if they were periodically burned to facilitate the growth of lupines. Mann and Plummer then assert that restoring the species to "complete health" requires the creation of a network of large reserves throughout the range of the butterfly, from the Atlantic Coast to the Great Lakes, connected to each other by "stepping-stones" of suitable butterfly habitat, perhaps usurping portions of Chicago and Toledo in the process, at a cost of billions of dollars. The ESA does not require anything so absurd; its vastly more modest goal is to pull species back from the brink of extinction, not restore them to their pre-industrial abundance. The entire scenario is more science fiction than science.

Having turned the Karner blue butterfly into a veritable Godzilla, Mann and Plummer then raise the specter of thousands of other endangered species — from Kanab ambersnails to Florida scrub jays to Kentucky cave shrimp — each demanding that its piece of the world be declared off-limits to development, until little remains for human use and enjoyment. The authors pay little attention to the fact that endangered species are not randomly scattered across the landscape; most are clustered within a small number of discrete hotspots which, if identified and protected, will vouchsafe much of the earth's biodiversity. BirdLife International, an international conservation organization based in Cambridge, England, has calculated that 70% of the world's imperiled birds are found on just 2% of the earth's land surface. Within the USA, the Lake Wales Ridge of Florida and the Ash Meadows oasis in Nevada are two examples of small areas harboring multiple endangered species.

Mann and Plummer repeatedly assert that Congress had the wool pulled over its collective eyes when it enacted the Endangered Species Act. They believe that legislators never intended to create a law that protects lowly bugs and clams as fiercely as it protects bald eagles and grizzlies. How, then, do the authors explain the fact that Congress has re-examined and re-authorized the ESA at least four times since it was first passed in 1973, each time declining to narrow its scope? Two of these re- authorizations occurred during Republican Administrations (1982, 1988), suggesting bipartisan support for the less charismatic species. That support may now be evaporating, but it was undeniably present for the past two decades.

No in-depth treatment of the ESA can avoid a discussion of the infamous controversy over the snail darter and Tellico dam. Mann and Plummer go into exquisite detail on the habits of the snail darter, the events leading up to its listing as an endangered species, and the outrage felt by certain senators and representatives when that little perch almost prevented a multi- million dollar dam from being completed (the dam was 90% finished when the fish was discovered). But they devote only a couple of sentences to the true madness of Tellico: The dam was 100% porkbarrel, and it has never repaid its debt to the federal government. The federal treasury and the environment would have been better served had the dam not been completed and one of the loveliest trout-fishing streams in Tennessee left alone.

Is the Endangered Species Act perfect? Of course not. Can it be improved? Absolutely. Some means should be found to reward those who in good faith protect the endangered species on their properties for the benefit of all. The listing and recovery of endangered species must be made to proceed more expeditiously. But improving the ESA will require an honest, rational dialogue about its strengths and weaknesses. That worthy objective is poorly served by this mean-spirited book.

S.L. Pimm adds:

The discussion of the Snail Darter is particularly fanciful. I cannot imagine that Mann or Plummer talked to anyone in Tennessee about this case. The initial opposition to the dam was from trout fishermen, the dam violated Native American burial grounds, and evicted farmers from long-held land. With very little imagination, one could easily write about the 1973 Act as being a great savior of individual rights. Rather than state that "Tellico has not proven a complete disaster" Mann and Plummer could easily written about the spectacular loss of wild rivers in the U.S.A. and the associated loss of amenities. They would only need to see the long lines going into the Tennessee Aquarium in Chattanooga, to see how many of us are fascinated by the rivers we have lost.

This mantra of progress for progress sake (and people be dammed!) pervades the entire book. Another example is the campaign by developers to destroy large areas of the beautiful Texas Hill Country west of Austin. Mann and Plummer describe their experience in that area. "Driving along the verdant slopes of the Hill Country, we found it hard to believe we were in a metropolitan area of three-quarters of a million people. Views of apparently untouched canyons, splendid in afternoon light, would make anyone want to have a home in those hills. The people who have those homes also want the other comforts of American civilization: banks and burger joints, diners and doughnut shops....As roadside billboards attested, much of the land was owned by developers with visions of housing tracts and office parks...." Sort of brings a lump to your throat when you realize that the ESA might have denied future generations of Texans the right to enjoy a landscape of subdivisions and hamburger stands rather than that natural beauty, complete with some beautiful, interesting, and now-endangered species.

Executive Office of the Chairman
WHITE MOUNTAIN APACHE TRIBE

RONNIE LUPE
CHAIRMAN

Testimony of Ronnie Lupe, Chairman of the White Mountain Apache Tribe
Prepared For The U.S. Senate Committee on Environment and Public Work's
Subcommittee on Drinking Water, Fisheries and Wildlife
July 13, 1995

Dear Chairman Kempthorne, Senator Reid and Members of the Committee:

The White Mountain Apache Tribe is honored to have been invited by this Committee to present testimony on the reauthorization of the Endangered Species Act.

Fort Apache Indian Reservation

For those of you who are not familiar with our White Mountain Apache people and our land, our reservation homeland, known as the Fort Apache Indian Reservation, is comprised of some 1.6 million acres of lands ranging in elevation from 2,500 feet to over 11,400 feet. We have vast canyons and range land and over 700,000 acres primarily ponderosa pine forest through which traverse 400 miles rivers and streams. Our reservation is home to abundant game and fish, including the once endangered Apache trout, elk, bear, mountain lion, pronghorn antelope, deer, wild turkey, osprey and our nation's symbol, the bald eagle.

In pre-reservation days, we were entirely self sufficient and healthy in mind, body and spirit. The sacred waters which arise on our reservation sustained us. We depended upon wildlife, native plants and our own agriculture for food, shelter and clothing. All life was held sacred and that tradition continues today. The first deer was never struck down during a hunt. We would let it pass so that there would always be one remaining in the forest. Prayers were always offered after the taking of any wildlife, giving honor to the sacrifice of that life for the survival of our families. Prayers are still offered today when animals are hunted and killed.

Apache people never saw ourselves as separate from the earth. We are one with the land. Hunting was not for sport and trophies but to provide food and clothing. Although we

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have been masters of our lands since time immemorial, the land and its fruits have never been simply for the taking but are elements of our responsibility for stewardship of the lands that the Creator has provided us. Our people have always been taught to respect the land and living things. Individual ownership of land was unknown to us but our responsibility to care for the land was taught to us from an early age.

Our tradition of stewardship continues to guide the natural resource management philosophy of the White Mountain Apache Tribe. Our lands were severely damaged due to mismanagement by the Department of Interior from the time the reservation was first established in 1871. We have since regained managerial control of our lands and are now in the process of repairing the extensive damages that were done to our grazing lands, forests and riparian areas. In the past ten years, the Tribal Council has voluntarily reduced our annual allowable timber harvest from 92 million board feet to 57 million board feet because of our concerns about overcutting our forest and damaging our environment. Included in this reduction has been the removal of several "old growth" timber sales because of our cultural and environmental concerns.

Initial Experience With The Endangered Species Act

Despite the damages we have sustained, our reservation remains a refuge for many endangered and sensitive species, both listed and unlisted. Although the Endangered Species Act was passed in 1973, our Tribe had very little involvement with the Act or its implementation until recent years. Initially, we viewed the challenges by environmental groups and the regulatory actions of the U.S. Fish & Wildlife Service regarding endangered species as total hypocrisy. Those who sought to impose the ESA upon our Tribe and our aboriginal lands, made their challenges from cities where they had long ago exterminated native animals and plants and had erected cities of concrete and steel where prairies, wetlands and other wildlife habitat once existed. The species found on our reservation that are listed as "endangered" are rare because there are few healthy habitats elsewhere. Our reservation is home to many of these plants and animals because we have

managed our lands well.

In our Apache tradition, we do not manage our lands for the benefit of a particular species we strive to protect the land and all the life forms that it supports. Our homeland is too vast to manage for just one species. Our reservation traverses five life zones from Upper Sonoran to Sub-Alpine Forests. The diversity of our land provides habitat for a wide variety of plants and animals and each is important to us. The pressures of environmentalists and the Ecological Services Branch of the U.S. Fish and Wildlife Service to manage our lands for a single species was a contradiction to our view of life.

The Endangered Species Act Does Not Apply To Indian Tribes

It has always been our view that the Endangered Species Act does not apply to the White Mountain Apache Tribe and Indian Tribes generally. Nowhere in the Act does it specify that the Act applies to Indian Tribes. Congress has the power to make the Act apply to Tribes but until it has spoken, it cannot be assumed that it applies or that the Tribe is bound by its dictates. In the past four years, we saw increasingly aggressive action by the U.S. Fish & Wildlife Service, perhaps because of lawsuits against that agency, to establish critical habitat and to list endangered species on our tribal lands. Nevertheless, having managed our land so well for hundreds of years, we were confident that the Act would not affect our lands or our people

Then, one after another, critical habitats were proposed that would include our reservation lands for the loach minnow, Arizona willow, razorback sucker, and Mexican spotted owl. Because our reservation is a refuge for many endangered plants and animals that it was probable that new proposals would be made in the future. It soon became apparent that the Congressional goals of tribal self-governance, tribal self-determination and economic self-sufficiency could be paralyzed by third parties filing lawsuits against the U.S. Fish & Wildlife Service to force the Service to declare critical habitat on our reservation. Such a designation would affect our sawmill, ski area, cattle industry, development of recreational facilities and our entire wildlife and land management philosophy. The prospect of our aboriginal lands being controlled by environmental activists living hundreds of miles from our homeland was too much to bear and so we adopted resolution 2-94-060, on February 24, 1994, which prohibits any federal or state agency from entering our Fort Apache reservation for the purpose of

conducting any studies or sample collection of any kind whatsoever. We were particularly affronted by the implications that we were not capable of managing our lands.

The tension between our Tribe and U.S. Fish & Wildlife Service and the mandates of the Endangered Species Act as interpreted by the Service, gave rise to unique negotiations between Tribal Chairman Ronnie Lupe and the Director of the U.S. Fish and Wildlife Service, Mollie Beattie. Through the outstanding statesmanship of these two leaders, a Statement of Relationship between the White Mountain Apache Tribe and the U.S. Fish & Wildlife Service was signed December 6, 1994. A copy of that Statement of Relationship is attached.

The Statement which was negotiated on the basis of a mutual respect for a government-to-government relationship rather than regulator-to-regulatee, recognized the aboriginal rights, sovereign authority and the Tribe's capacity to self-manage our lands and resources as a self-sustaining homeland of our Apache people. Conversely, the Service's technical expertise in fish, wildlife and plants was recognized as a significant resource for my Tribe's management of the ecosystems and associated sensitive species on our reservation. The Secretary of the Interior's trust responsibility to the Tribe was a guiding precept in the development of the Statement of Relationship. Both parties realized that improved communications and working relationships that recognized both aboriginal rights and the mission of the Service was harmonious with the Tribe's economic development and Congressional goals of Tribal self-determination, self-governance and economic sufficiency.

The Statement of Relationship has been implemented and we are proud to say it is one of the most successful examples of federal-tribal cooperation in existence today. It works because it was based on mutual respect for our government-to-government relationship. It works because we were given the opportunity to prove that we could self-manage our lands as we had done for centuries and that our management plan for the Mexican spotted owl was superior to any protection that could be provided the owl by

designating critical habitat on our reservation. We are also developing integrated resource management plans and habitat management plans for other sensitive species, keeping in mind the overall goal of habitat management not management "species by species". Since the signing of the Statement of Relationship between the U.S. Fish and Wildlife and our Tribe, the focus of our activities has shifted from confrontation over legal issues to collaboration on issues of science and management. We are cooperating on a number of projects including wetlands and riparian restoration. But we still have our differences as the proposed reintroduction of the Mexican wolf over the objections of the Tribe demonstrates.

Indian Tribes Should Be Excluded From The Endangered Species Act

The White Mountain Apache Tribe would prefer that Tribes be excluded from the requirements of the Act and that the traditional and time-honored Congressional deference to Tribal sovereignty, Tribal self-governance, self-determination and economic self-sufficiency not be weakened. We are fearful that private parties with narrow self-serving agendas will seek to control our destiny and that of our aboriginal and ancestral homeland if the Act is drafted to apply to Indian people and their lands. Abrogation of our sovereign immunity would subject us to countless and extremely expensive lawsuits. Our goals of economic self-sufficiency could be paralyzed. We are fortunate that we had funding from our limited resources to spend the thousands of dollars necessary to develop an Arizona willow economic impact study, a Mexican spotted owl management plan, and to respond to the other proposals for critical habitat on our reservation. However, these responses to regulatory requirements of the Act unnecessarily deplete our financial resources and deflect us from accomplishing our Tribal goals. We recommend that the Act specifically exclude Indian Tribes. The U.S. Fish & Wildlife Service's concerns about sensitive species on reservations should be considered as part of the trust responsibility of the Department of Interior to insure that Tribes receive adequate technical assistance and funding to respond to those concerns.

We are not here to say that we can take the last fish or the last deer, that is not the Apache way. But the paralyzing imposition of the Endangered Species Act through private litigation and unreasonable federal regulation should not be allowed. We are self-regulating. If our homeland is destroyed, we have nowhere else to go. We will not allow that to happen We only ask that Congress continue to respect our stewardship over our aboriginal homeland.

Science and Policy

The Committee's invitation of June 30, 1995 asked our opinion on the appropriate relationship between science and policy in implementing the Act. One of my Tribe's concerns is how the federal government can insure that it obtains the best scientific information available before it makes difficult policy decisions in regard to the listing and conservation of threatened and endangered species. Too often the scientific data on an endangered species is so scant that even the "best available scientific data" is insufficient to make policy decisions that carry heavy socio-economic impacts. The species listing process should be amended to go beyond "best available data" to include collection of some reasonable level of additional verification data to support listing. Accountability in this area is presently lacking.

For example, two years ago, the Arizona willow was proposed for listing by the Service. One Service botanist believed that it only existed on our reservation. One of those Arizona willow sites was within our Sunrise Ski area. Critical habitat designation for the Arizona willow could stop any expansion or even some existing operations at the ski area. With our 40% unemployment rate, any termination of employment opportunities is devastating. What disturbed us was that there seemed to be very little research as to whether or not the Arizona willow existed in other areas off the reservation. A policy decision to list the Arizona willow was made by one botanist without policy guidelines or reasonable concerns about its impact on the Tribe. At a minimum, the botanist should have at least explored similar elevations and topography within the western United States.

By chance, members of the National Forest Service in Utah came to our reservation to look at our Arizona willow and were excited to find that thousands of the same plants existed in Utah. Despite this knowledge, there was still reluctance on the part of the Service botanist to give up the listing of the Arizona willow as her "pet project", even in the face of overwhelming evidence that the Arizona willow was not endangered, should not be listed and that critical habitat was not necessary.

There should be a policy in place which would require the Service to meet a threshold level for scientific data regarding a plant or animal before it is listed as endangered and critical habitat is declared. Also, a Tribe or local government should be given the opportunity to develop a management plan for the species or for ecosystem management before critical habitat is imposed for a single species.

In the case of the Arizona willow, some Service botanists even suggested that wire cages be built around the Arizona willow to prevent elk and other wildlife from feeding on it. Also, because flooding destroys the Arizona willow and beavers cause rivers to flood in the areas where the Arizona willow grows, that beavers be controlled so that they do not build dams that might flood the willow. Such individual species management is not natural and does not work. There is even some belief by some experts that the Arizona willow is only an interim step in that plants' development to another type of form. The Act should provide that scientists not be the policy makers and that certain investigations must be completed before recommendations are made for listing or declaration of critical habitat Even if critical habitat could be declared, an opportunity should be provided for affected persons to draft an acceptable management plan, which in most cases will provide greater protection than critical habitat.

Funding

It is our view that the ESA does not apply to Tribes and that Tribes should be specifically excluded because of the reasons presented above. However, if Tribes are specifically included by Congress under the ESA, then adequate funding and cooperative

incentives for the management of threatened and endangered species should be available to Tribes. Presently, under Section 6 of the Act, entitled "Cooperation with the States", funding programs are made available only to States. The lack of Tribal funding mechanisms under the ESA places a huge financial burden on Tribes to manage sensitive species. Our Tribe and most other Indian Tribes prefer not to receive funding assistance through the States if possible due to long standing and historical tensions that have existed between the two sovereigns.

Species Management vs. Ecosystem Management

As discussed above, a major problem with the concept of critical habitat as presently applied is that it forces land and resource managers to focus on species specific management rather than allowing landowners/tribes to implement measures aimed at improving or maintaining overall ecosystem health to the benefit of all associated species. Because critical habitat designations are driven by individual species listings, management agencies, especially federal land management agencies, are required to hastily throw time and money and other resources at individual species and their habitats, without really considering the long term impact on other associated species or the affected ecosystem.

It is our view that it is more practical to view a particular species "endangerment' as an indicator of overall ecosystem health. And accordingly, land management policies should be re-evaluated and modified to improve the overall health of the ecosystem for all associated species and related resources rather than managing for the one species that happens to be showing the greatest adverse effects. It is our belief, consistent with our traditional values and philosophy, that managing ecosystems rather than individual listed species is the most practical long term approach to preserving biodiversity which is the ultimate intent of the Endangered Species Act

Litigation

It has been our experience that the environmental groups appear to be more than willing

to throw money at litigating their species specific agenda but have shown little responsibility or accountability in actually protecting species on the ground. The lawsuits brought by the environmental groups are often indefensible by the Service. The timelines of the Act encourage the filing of lawsuits and the recovery of huge amounts for attorneys fees for the environmental groups and, therefore, the Service and other land management agencies spend more time attending to litigation than on managing fish and wildlife resources. There is little time available for the U.S. Fish & Wildlife Service to negotiate with state, local or, tribal governments, to establish alternatives to critical habitat designation. Alternatives such as providing technical assistance for development of management plans so that critical habitat does not have to be designated for a particular species.

Before the Statement of Relationship, our staff spent many hours trying to negotiate the bureaucratic maze of the Fish and Wildlife Service, understand the nuances of the Endangered Species Act, and posturing for potential litigation. There was little time for actual field work. But today we have programs in which we are protecting sensitive habitats using funds from the Service and the labor of our Tribal youth. This approach seems to be more directly related to protection of endangered species than bureaucratic fighting and protracted litigation.

Conclusion

In conclusion, I want to reiterate that Indian Tribes should not be included under the Endangered Species Act. Indian Tribes are sovereign nations with a trust relationship to the U.S. Government. Do not violate this trust by imposing alien values and burdensome bureaucratic processes on us. Everyone who has worked for or with the Tribe states that more has been done to protect endangered species on our lands through the cooperation established in the Statement of Relationship than could ever be achieved by trying to enforce some federal law.

Thank you for allowing me to share my thoughts with you on this important issue.

STATEMENT
of the Relationship between the WHITE MOUNTAIN APACHE TRIBE and the US FISH AND WILDLIFE SERVICE

PURPOSE

Tribal sovereignty and Service legal mandates, as applied by the Service, have appeared to conflict in the past, but both the Tribe and the Service believe that a working relationship that reconciles the two within a bilateral government-to-government framework will reduce the potential for future conflicts.

I. GUIDING PRECEPTS

- The Tribe and the Service have a common interest in promoting healthy ecosystems.
- The Service recognizes the Tribe's aboriginal rights, sovereign authority, and institutional capacity to self-manage the lands and resources within the Fort Apache Indian Reservation as the self-sustaining homeland of the White Mountain Apache people.
- The Service's technical expertise in fish, wildlife, and plants establishes it as a significant resource for the Tribe's management of the ecosystems and associated sensitive species of the Reservation.
- The Service has a trust responsibility and is required to consult with the Tribe, as articulated in Order No. 3175 by the Secretary of the Interior, regarding any of its activities that may affect the Tribe's trust resources and the sustained yield of those resources. Such activities will support the Tribe's self-determination and economic self-sufficiency.

- The Tribe and the Service acknowledge that delays in communication as well as unclear lines of communication have led to problems in the past. The Tribe and the Service agree that clarification of this issue through implementation of the concepts contained in this statement will ensure early two-way interactions and will lead to productive resolution of issues of mutual concern.

- The Tribe and the Service agree and recognize that this statement and any process established by it do not preempt or modify the respective rights and responsibilities of either entity.

II. TRIBAL MANAGEMENT

- The Tribe is continuing to institutionalize internal processes for planning, review, regulation, and enforcement to ensure that economic activity on its reservation is consistent with traditional Apache values for living in balance with the natural world.

- The Tribe will complete integrated resource management plans on a watershed basis that promote tribal goals, including sustained yield. These plans will direct the assessment, management, and restoration of ecosystems in accordance with tribal values. Other tribal resource management plans must conform to the conservation guidelines and practices established in the integrated resource management plans.

- In the interim, the Tribe is preparing an Ecosystem Management Plan that addresses sensitive species, based on existing knowledge, active conservation practices, and current management plans. The plan will be continuously enhanced with new information obtained from ongoing surveys, habitat assessments, and other planning processes.

III. COMMUNICATION

- The government-to-government relationship requires working with the White Mountain Apache Tribal Government and its resource management authorities, including the sharing of technical staffs and information, to address issues of mutual interest and common concern. Both the Tribe and the Service recognize, however, that release of tribal proprietary, commercial, and confidential information may be restricted by either the Tribe or the Service.

- While the Tribe and the Service encourage open, informal discussion to facilitate proactive, cooperative efforts; formal communications follow the outline in Table 1.

Mutual agreement on communications with outside parties will promote the innovative and creative process that the Tribe and the Service have agreed to pursue.

- The Service and the Tribe acknowledge that the Tribe manages access to and is responsible for the safeguarding of information on tribal ecosystems, flora, and fauna (including federally endangered, threatened and candidate species). The Tribe will establish protocols for the safekeeping and dissemination of such information.

- Whenever the Service considers a change in the status of a species that may exist on the Reservation now or in the future, it will promptly notify the Tribe's Endangered Species Coordinator. Concurrently, the Service will indicate what scientific information its presently has, the nature of the Service's concern, and what additional information and management would render unwarranted the elevation of the species to a more protected status or would encourage the delisting of the species.

- The Service's Director of Region 2 will be the contact person for cross-regional communications on any Service activity that may affect the Tribe and tribal land management.

- The Service's primary contact point with the Tribe is the Arizona Fishery Resources Office in Pinetop, Arizona, which has decades of experience in working with the Tribe to promote healthy ecosystems, its focus on fisheries resources supports an emphasis on sensitive habitats, and it enjoys close proximity to and extensive familiarity with the Reservation.

- The Gila-Salt-Verde (GSV) Ecoregion Team provides an avenue for the Service and the Tribe to implement cooperative projects to assess and restore sensitive ecosystems in accordance with tribal goals; in particular, the restoration of degraded riparian areas and the elimination of introduced species considered detrimental by the Tribe. The Service will invite the Tribe to send representatives whenever the Team meets to discuss goal-setting or tasks for the types of ecosystems that exist on the Reservation.

IV. COORDINATION

- Upon tribal request, the Service will provide technical assistance on the maintenance of healthy ecosystems. Such assistance will normally be provided through the Gila-Salt-Verde Ecoregion Team.

- The Service and the Tribe will cooperatively develop and propose management practices based upon identified threats to sensitive species and their habitats for

incorporation into the Tribal Management Plan (TMP), which consists of the portions of the Ecosystem Management Plan and integrated resource management plans which address sensitive species. This activity will initially take the form of lists of sensitive species, threats, and an assessment of commonality and severity of the threats.

- The Service will notify the Tribe upon initiation of formal or informal consultation with a Federal agency regarding tribal lands as soon as it becomes aware of a request.

- Active management and implementation of the TMP will generally serve as the basis for Reasonable and Prudent Measures and Alternatives arising from formal or informal consultations with Federal agencies.

- The Service and the Tribe will hold an annual conference on the TMP and its implementation. The conference will be held to make year-to-year changes and will include field visits and requests for future technical assistance.

- Adoption and implementation of the TMP will normally mean no additional special management considerations or protection for sensitive species will be needed.

Director, U.S. Fish and Wildlife Service — Date: 6 December 94

Chairman, White Mountain Apache Tribe — Date: Dec. 6-94

TABLE 1 MATRIX FOR COMMUNICATIONS

ISSUE TYPE	WHITE MOUNTAIN APACHE TRIBE LEAD CONTACT*	US FISH AND WILDLIFE SERVICE LEAD CONTACT*
INFORMAL DISCUSSION	Any	Any
SCIENTIFIC AND MANAGEMENT ISSUES - Technical assistance - Requests for site visits - Requests for biological data - Species / Ecosystem management plans - Integrated resource management plans - Data management protocol - Cooperative projects with Ecoregion Team	Jon Cooley, Endangered Species Coordinator, (602) 338-4385, ext. 12	Arizona Fishery Resources Office, Pinetop, (602) 367-1953 Gila-Salt-Verde Ecoregion Team
POLICY DEVELOPMENT (pre-decision) - Intergovernmental agreements - Coordination of working group - Program funding	Charles O'Hara, Director of Planning and Developmental Services (602) 338-4346, ext. 213	John Rogers, Region 2 Director, (505) 766-2321
LEGAL CONCERNS (pre-decision) - Potential FWS regulatory actions directly affecting the Tribe [e.g. listings, critical habitat, initiation of formal/informal consultations] - Potential tribal governmental actions directly affecting the Service - Requests for comments	Charles O'Hara, Director of Planning and Developmental Services Robert C. Brauchli, General Counsel, (602) 338-4346, ext. 410	John Rogers, Region 2 Director Regional Solicitor
FORMAL DECISIONS BY TRIBE OR FWS - Final policy decisions, regulatory actions, findings from formal/informal consultations, or enforcement actions of direct concern to the Tribe or FWS	Ronnie Lupe, Tribal Chairman, (602) 338-1560	Mollie Beattie, Director, as delegated to John Rogers

* Or successor

TESTIMONY OF

JOHN HARJA
CHAIRMAN, WESTERN GOVERNORS' ASSOCIATION STAFF WORKING GROUP
ON REAUTHORIZATION OF THE ENDANGERED SPECIES ACT
OFFICE OF THE GOVERNOR OF UTAH

BEFORE THE
SUBCOMMITTEE ON DRINKING WATER, FISHERIES, AND WILDLIFE
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE

JULY 13, 1995

Thank you for the opportunity to be here today to share with you the set of principles that the Western Governors' Association has formulated for amending the Endangered Species Act. I would like to highlight those recommendations that focus on the topic of today's hearing --the role of the states in the ESA.

The Western Governors' Association has worked since 1991 to develop policies that would improve the implementation of the Act while preserving its goal of conserving species. Now, after nearly four months of work by a diverse group of state policy makers and experts on the Act, WGA has developed the attached set of recommendations, which we call the Essential Elements document. These recommendations, which draw on the lessons learned since the Act's enactment in 1973, have been endorsed by the governors. The working group is now translating these recommendations into legislative language, which the governors expect to provide for your use before the end of the month. Although I am here to explain these recommendations, let me emphasize that the Essential Elements document speaks for itself and I would urge you to examine it closely.

The recommendations are designed to accomplish three primary goals:

- increase the role of the states,
- streamline the Act, and
- increase certainty and assistance for landowners and water users.

Today, I would like to address the governors' concept of making states full partners under the Act. As you know, states possess broad trustee and police powers for fish and wildlife management, including those found on federal lands within their

borders. With the exception of marine mammals, states retain concurrent jurisdiction even where Congress has previously limited state authority, as in the case of endangered species. States have biologists and other experts already in the field developing much of the information upon which ESA decisions are eventually made. These experts are out there, building the working relationships upon which true cooperation and success depends. The governors are vitally interested in making the Act more workable and understandable, for when the Act's objectives are not met or adverse trends are not addressed promptly, the problems for the species are compounded. At the same time, rigid implementation of the Act's enforcement provisions, create adverse impacts upon our citizens, their communities, and the local economies.

These recommendations would enable states to retain full authority for management of species if they take actions to conserve species either before a species is proposed for listing or subsequent to a listing. They would allow states to retain authority over pre-listing prevention activities. They would enable states with species protection programs approved by the secretary to assume responsibility for recovery planning and implementation, including critical habitat designation. Such states also could assume responsibility for the issuance of habitat conservation planning permits and other aspects associated with land, resource and wildlife protection. The recommendations would re-establish greater flexibility in management of threatened species. They would create incentives for all jurisdictions and private landowners within a state to work cooperatively to preclude the need to list species. Of the many recommendations to increase the role of the states, I would like to focus on three legislative initiatives which would:

- Retain state jurisdiction over the management of species,
- authorize and empower state conservation agreements, and
- provide more deference to state expertise and stop abuse of the petition process to list species.

Retaining state jurisdiction over the management of species
Amendments being drafted would make states full partners under the Act by recognizing their primary authority over fish, wildlife, and plants. The amendments would require federal agencies to keep states fully informed of any activity under the Act, and enable states, at their choice, to assume the lead on various portions of the Act. The secretary could assume authority for recovery planning in cases where

he determines that conservation programs across the species range are inconsistent or not complementary. He would do so only after providing the states with adequate time to correct such problems. The secretary would be directed to jointly develop standards, regulations and guidelines implementing those portions of the Act affecting states, while retaining final decision making authority. Federal - state consultations and the work of joint teams would be exempted from the Federal Advisory Committee Act.

Authorizing state conservation agreements and the suspension of the consequences of the Act

The amendments would authorize states to develop conservation agreements with any federal, state, tribal and local agency and private landowner to conserve declining species. Agreements would address those actions that must be taken by all parties to reduce threats to species viability and to provide for species recovery, in order to eliminate the need for listing. Once the critical parties have entered into the conservation agreement, a state could submit the agreement to the secretary for approval. Upon a determination by the secretary that the conservation agreement fulfills the five listing criteria found in section 4 of the ESA, the conservation agreement would have the force of law.

The amendments would suspend the consultation requirements of section 7(a)(2) and the prohibitions of section 9(a)(1)(B) for any species which is subject to a properly functioning conservation agreement within a state. The agreements would be subject to periodic review by the secretary and subject to termination if problems are found and corrective actions not carried out. The secretary's emergency listing authority would remain unaltered. State conservation agreements would provide an incentive for all affected jurisdictions within a state -- even federal land management agencies -- to take proactive steps to protect species and their habitats. These amendments would allow species to be protected in a more flexible, creative, and cost-effective manner. Similarly, most of the fear and dread that chills cooperative efforts to conserve species could be removed while concerned parties pitch in to remove the threats to a species or its habitat.

Providing more deference to state expertise and stopping the abuse of the petition process

The governors' amendments would also place a more rigorous burden on petitioners to show that a listing action is justified and would raise the standard of what

qualifies as new information, much in the manner delineated in rules recently proposed by the Department of the Interior and the Department of Commerce.

The secretary would be required to provide petitions, which clear this higher threshold, to each state where the species is believed to exist and to invite the opinion of those agencies on whether the petitioned action is warranted. If a state agency recommends against proposing the species for listing, the secretary would be required to conduct peer review. If the secretary disagrees with both the state and the peer review panel, he would have to find by a preponderance of evidence that the action is warranted.

While listing decisions would remain solely on the basis of the best scientific and commercial data available, WGA's amendments would require the secretary to solicit and fully consider the scientific and commercial data available from the affected state agency and to consider the future conservation benefits to be provided the species under any existing multiple species habitat conservation plans. The amendments would also raise the recovery and de-listing processes to a status equal to listing under the Act.

Additional Issues

In discussing proposed changes to the Act, governors noted that insufficient funding has undermined the Act's implementation. Increased funding, new revenues, or reallocated funds must be provided even if the efficiencies and cost savings provided by the governors' entire package of recommendations are obtained. Unfortunately, past implementation of the Act has turned many private landowners against the Act. These are the very folks in the West who have traditionally been our best natural resources stewards. Reform of the Act could prove meaningless if technical and financial assistance cannot be provided for the renewed public-private partnership that is essential to achieving the conservation goals of the Act. While both House and Senate Budget resolutions suggested a five-year moratorium on new land purchases under the Land and Water Conservation Fund, the House Interior Appropriations Committee has recommended $52 million for FY 96, in comparison to last year's level of $235 million. The limited funding would to be used for acquisition management and emergency land purchases. Perhaps this committee could authorize and then recommend that another portion of the frozen LWCF acquisitions monies be appropriated for land stewardship purposes. The monies could fund state block grants to support state-managed conservation agreements and

habitat conservation plans, to facilitate private landowner and water user involvement in conservation agreements and recovery plans, and to provide technical assistance to local governments and private land owners, as well as to fund purchases of critical habitat.

The governors would also want you to note their **recommendations to streamline the ESA and to increase certainty and assistance for landowners and water users.** Streamlining recommendations would give listing priority to conservation of species, which would reduce the need to list other species that are dependent upon the same ecosystem. They would re-energize species recovery plans by making recovery a principle focus of the Act and by making recovery plans binding on their participants. They would improve management and cooperation by enabling all stakeholders to participate directly in developing and implementing recovery plans and conservation agreements. They would create an expedited section 7 consultation process for low-impact federal actions covered by a recovery implementation plan. The recommendations would create an administrative process that would trigger a change in species status as the goals and objectives in a recovery plan are met or exceeded and, in the case of delisting, trigger the proposal of the required regulation to delist a species.

In the area of increased certainty and assistance for landowners and water users, the recommendations would provide relief for small resource owners who conduct activities that do not threaten the continued existence of a species. The recommendations would also assure landowners that if they enhance important habitat, they will not be penalized if, at a later time, they return the land to its previous condition. They would require that a clear, scientifically defensible regulation defining which acts are prohibited be published concurrently with the listing rule whenever possible.

The Western governors developed this comprehensive set of recommendations to assist lawmakers and the administration in making thoughtful and constructive changes to the Act. In the course of this work, the governors discussed the Act with administration officials on a number of occasions and the WGA staff working group met with administration representatives. The governors look forward to sharing legislative language with you in the near future. Thank you for your time and consideration. If there are any questions, I would be pleased to address them.

April 21, 1995

WESTERN GOVERNORS' ASSOCIATION

ESSENTIAL ELEMENTS OF AMENDMENTS TO THE ENDANGERED SPECIES ACT

The Western Governors applaud the goals of the Endangered Species Act (ESA). However the ESA, which was designed as a last ditch effort to protect species from extinction, is being used more frequently for purposes other than protecting species.

The Western Governors believe the ESA should provide for shared authority with the states. The governors have, therefore, developed this comprehensive set of principles to guide lawmakers in making thoughtful and positive changes to the Act. WGA representatives have held discussions with the administration and this document reflects many areas of common ground. The Western Governors also point out that funding for implementation of the Act has been inadequate in light of the broad scope of the Act. If states are to assume a larger role in implementing the Act, funding must match the design of a reauthorized ESA.

Our essential elements for revisions of the Act are based upon the three following goals:

* Increase the Role of the States
* Streamline the Act
* Increase Certainty and Assistance for Landowners and Water Users

I. INCREASE THE ROLE OF THE STATES

The roles, responsibilities and incentives provided to the states and landowners in the protection and recovery of threatened and endangered species must be significantly enhanced. The Act and its implementation must clarify, affirm, and enhance this federal-state partnership.

A. State Role

1. The findings declared by Congress in the Endangered Species Act must recognize and affirm that states possess broad trustee and police powers for fish and wildlife management, including those found on federal lands within their borders. With the exception of marine mammals, states

retain concurrent jurisdiction even where Congress has previously limited state authority, as in the case of endangered species. The authority, primacy, and role of the states must be recognized and affirmed with respect to the conservation of species.

2. Revisions to the Act are needed to ensure a greater level of active involvement by the states. States with species protection programs approved by the Secretary, should be given the option to assume primacy for implementation of certain aspects of the Act depending upon each state's capability and resources as long as the goals of the Act are being met. If states assume primacy, then they should retain authority over prelisting prevention activities, recovery planning and implementation, including critical habitat designation, and all other aspects associated with land, resource and wildlife protection. If states chose not to exercise primacy, they should still retain a full co-equal partnership role in administering the federal program.[1] States should also be provided the opportunity to accept the primacy role at any time. Federal oversight of those aspects of the Act under state assumption should be in the form of a periodic program audit.

3. Coordination and consultation with affected states must occur prior to rule making to integrate state findings and programs with federal actions to achieve maximum benefits while minimizing impacts. The Act should provide for a cooperative federal-state rule making process to identify standards and criteria within which state programs will be designed to conserve habitat and species under the Act. The states and the Secretary should be directed to jointly develop a model containing the standards and guidelines for subsequent approval of state programs.

4. The States and the Secretary should be given the authority to utilize the resources available under the Act and other programs to promote the sustainability of ecological communities and conservation of endangered or threatened species on a prioritized basis of rarity and threat over the range of the species, as opposed to an equivalent emphasis given to subspecies and distinct

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[1] Some governors believe that an option must be provided for states to assume the total responsibility for implementation of the entire Act. They feel that if a state is administering a comprehensive endangered species program pursuant to state statute, and the program meets criteria and standards defined in the Act, then the Secretary of the Interior should be required to defer to the state program including interstate issues to be addressed by compact.
Other governors believe that, while an increased state role is essential, there remains an important and appropriate role for federal agencies -- particularly in ensuring standards are being met and in facilitating protection for species that cross state boundaries.

vertebrate populations.[2] Habitat conservation and management, better integration of natural resources and land management programs across all jurisdictions and preventative/incentives measures designed to preclude the need for the listing of species under the Act should be aggressively pursued.

5. Obstacles to meaningful state participation, such as those created by the Federal Advisory Committee Act, should be eliminated.

6. States should be allowed to assume responsibility for issuing permits under section 10(a)(2)(HCPs) for areas within a state which have adequate comprehensive, habitat-based programs which have been approved by the Secretary.

B. Funding State Assumption of ESA Activities

Federal funding should be provided to support state and local comprehensive, preventive conservation programs to preclude the need to impose the consequences of listing under the Act by addressing the stability of ecological communities before precipitous declines. The entire nation and its future generations benefit from these programs, so they should be financed from an appropriate combination of sources devoted to national interest, including predominantly the federal government.

Many states have already committed significant amounts of funds and will need to commit additional funds in the future for implementation of the Act. However, serious attention must be devoted to identifying funding sources within existing budgetary parameters to facilitate greater state assumption of the Act. The following areas may prove fruitful as potential funding sources/mechanisms, and deserve further investigation.

1. Federal appropriations under the Act (not associated with section 6 of the Act) need to be redistributed to those states which assume a greater role under the Act. States should be reimbursed for their costs in an amount approximating, but not exceeding, the reasonably

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[2] The governors concur that more clarity to the terms "subspecies" and "distinct population segments" in the Act is necessary. As it should, science is continually revisiting the relationship within and between species. Some governors believe that the use of the terms "subspecies" and "distinct population segment" for listing a portion of a species' population has been abused for purposes of halting land and economic activity under the Act and should not be used in listing. Other governors believe that sufficient latitude must remain under the Act to list portions of a population on the merits of each case when they are truly isolated and threatened with local extinction.

estimated amount the federal agency would have expended. Current appropriations now going to federal agencies should also be made available to those states, which have Secretary approved programs, as block grants, for conservation agreements, listing investigations/reviews, all aspects of recovery planning and implementation, HCP administration, etc.

2. In establishing the Land and Water Conservation Fund (LWCF), Congress dedicated revenues from Outer Continental Shelf oil and gas production as its major source of funds. It reasoned that a portion of the revenues from the development of non-renewable resources should be used to protect other natural resources. In 1977, Congress authorized the LWCF to expend up to $900 million annually, yet in most years the program receives about $250 million. While the unobligated balance is used to off-set the federal deficit, $50 to $100 million, within the existing LWCF discretionary appropriation, should be earmarked to address one of the most divisive and critical natural resource issues facing the nation. This funding should be made available to the states, as block grants, to facilitate private landowner and water user involvement in conservation agreements and recovery plans. These needed funds could also be used to provide incentives to landowners and water users to enhance habitat conservation, secure easements for essential habitat, etc.

3 Revenues authorized by the Sikes Act and generated from use fees on certain federal public lands may be used to facilitate better integration of land management objectives with ESA objectives through conservation agreements or implementation agreements associated with recovery plans.

II. STREAMLINING THE ACT

The goal of recovering and delisting the species must receive greater attention in administering the Act. The recovery planning process must be revitalized as the key point where implementation of the Act is centered.

A. Improving Management of the Listing Process

The management of the listing processes is critical to success of the ESA. In order to improve the management of the listing process the following items should be addressed.

April 21, 1995

1. Prior to federal agency use of a listing process or the designation of critical habitat, the agency must consider whether the state agencies have developed their own programs for that species which are designed to protect the species, consistent with the Act.. In evaluating state programs, the Secretary should provide significant flexibility to the states to develop adequate broader habitat (ecosystem) species protection programs.

2. A more rigorous burden should be placed on petitioners (along the lines of the Secretary's draft guidelines release in December, 1994) to demonstrate that a listing action is warranted and the standard for what constitutes "substantial information" should be tightened. In addition, if information which does not support a listing exists, that information must also be referenced and used in the analysis and proposed rule. An audit of current listings should be completed utilizing the new criteria to ensure previous listing decisions are consistent with the new standards.

3. Upon receipt of a listing petition by the Secretary, a copy must be sent to each affected state. If a state recommends against proposing the species for listing, the Secretary should be required to conduct substantive peer review and rebut a presumption in favor of the state's position in order to propose that species for listing. The standard of review for such a presumption should be preponderance of the evidence. The review should be completed within one year. There should be opportunity for interjection of independent scientific evidence, a record of decision on the information utilized in making the decision, and an opportunity for judicial review of the listing decision by the federal agency.

4. Species listing is to continue to be a scientific based decision and should utilize the new process contained in this document. Improved certainty, however, could be provided to affected parties if biological recovery goals are established at the time of listing when sufficient information is available to do so. The goals, considering the health of the habitat and overall sustainability, would be a number of individuals, number of populations, or acres conserved or occupied that, if met, would constitute sufficient recovery for delisting. It could be refined during recovery planning.

5. If the Secretary determines a species will become extinct despite the protection afforded by the Act, the consequences of the Act regarding that species may be suspended. [3]

6. A clear, scientifically defensible regulation defining which acts are prohibited under section 9 and 10 should be published concurrently with the listing rule, when possible.

7. The Secretary should be given explicit authority to concur with approved conservation management agreements entered into by states, federal, tribal and local agencies, and private land owners in order to conserve declining species before the need to list those species. Agreements would address those actions to be taken by the respective parties to eliminate the need to list species by reducing the threats and providing for species recovery. This would include a determination by the Secretary of the adequacy of the program, which would have the force of law. Such agreements would also provide assurances to cooperating landowners that further conservation measures would not be required of the landowners should the species be subsequently listed.

8. Subsequent to a proposal to list or designate critical habitat, the Secretary should have the authority to suspend the consequences of listing or designation of critical habitat under the Act if the Secretary determines that the state(s) had initiated and is making satisfactory progress in implementing measures that are likely to protect or conserve the species. An extension of this suspension should be allowed, if the time for a listing or critical habitat designation decision arises, if the agreement is not in place but the state is demonstrating progress toward such agreement, unless such an extension is likely to jeopardize the species. Any force of law aspects of an agreement or suspension of the effects of the Act implemented due to the existence of an

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[3] The Western Governors have varying opinions regarding the point in the listing process when the full extent of regulations under the Act would come into effect and have debated the issue extensively.
Some governors believe that the full regulatory protection provided by the Act must remain in effect to ensure that all possible measures are undertaken to prevent the loss of species. They believe that states are or can be adequately informed of the decline of a species, and react accordingly. Because the Act is designed as a last ditch mechanism to reduce the likelihood of species extinction, the Act must cause all protective measures to apply at listing to save species after those earlier conservation efforts have failed.
Other governors believe the Act should be amended so that listing becomes a tool to inform the public about those species perceived to be at risk of extinction from a biological perspective. This would lessen the incentive, perceived or real, to list or fail to list species for reasons other than biology. Thereafter, a partnership of federal and state agencies and other stakeholders would determine the level and type of regulations, incentives or other available protective measures needed to stop the decline of the species. One of the goals of this change would be to enhance the level of accountability vested in elected decision makers.

agreement should be applicable on a state by state basis for those protecting habitats and species.

9. Subsequent to listing, the Secretary should also have this suspension authority subject to the state completing an agreement demonstrating the adequacy of such programs.

B. Improving the Conservation Provisions of the Act

1. The Act should provide greater flexibility to both federal and state agencies to determine when a regulated take of species is appropriate.

2. Section 4(d) should be modified so that the distinctions envisioned by Congress between a threatened and an endangered species are reflected in regulatory practices:

(a) The Secretary should, in conjunction with the state, be given the maximum flexibility to choose from the widest available range of incentives, prohibitions and protection, using administrative process and rule making in consultation with the states, to provide the creative assistance and necessary impetus to prevent a threatened species from becoming endangered;

(b) The regulations required of the Secretary should be "consistent with" the conservation of a threatened species and "necessary and advisable" for the conservation of an endangered species;

(c) The authority of the Secretary to prohibit any act prohibited under section 9(a)(1) or 9(a)(2) for a threatened species should be exercised only if the taking of that threatened species is determental to the continued existence of the species;

(d) The "extraordinary case" language of section 3(3) should not be applicable to threatened species and applicable to endangered species only if the Secretary determines that regulated take is detrimental to that species' conservation; and

(e) Language defining conservation under section 3(3) should be modified to provide that a regulated take conservation program authorized by the Secretary is appropriate in promoting the conservation of threatened species, distinct vertebrate populations, and, in some cases, may be appropriate for endangered species.

(f) HCP's should be explicitly available as a reasonable and prudent alternative in consultation under section 7.

C. Section 7 Consultation Process

1. The section 7 process should be streamlined. Full, formal consultation should be limited to high impact plans and projects that may affect the continued existence of the species, while an expedited process should be provided for low impact federal actions. The Secretary should, in conjunction with the states, propose specific streamlining measures within one year of reauthorization of the Act.

2. In Section 7 consultations, state information and comment should be actively solicited and utilized in the development of the biological opinion and the federal agency management decisions resulting from that opinion. The ability of project applicants and the public to participate in the section 7 consultation process must be affirmed.

3. Projects or certain similar federal actions should be given expedited *proforma* review under Section 7 when they are addressed in an approved recovery plan or HCP and determined to be consistent with or incidental to recovery objectives. This would ensure that where a recovery program is making sufficient progress toward the identified goals that individual projects will be viewed as achieving compliance under Section 7 and are therefore not subject to additional review.

D. Development of Recovery Plans

1. Where the states opt to do so, through a program approved by the Secretary, recovery planning authority should lie with that state. Under those circumstances, the state shall assume the lead in facilitating the involvement of all jurisdictional parties in developing recovery plans. When a species' habitat or range cross state boundaries, the Secretary should act as a facilitator to bring the involved states together to develop the recovery plan. If the Secretary determines that conservation programs across the species range are inconsistent or not complementary, the Secretary may assume recovery authority. This assumption will only occur after notifying the states of such inconsistency and providing the states with adequate time to correct the noted problems.

2. The regulations and standards for recovery plans should require analysis of community and tribal impacts; provide for flexible management when conditions change; establish a definitive time line; and recognize that, upon analysis, some species may not be recoverable because of biological or economic reasons. Where possible, recovery plans should contain a range of options or scenarios with the proviso that all options would achieve recovery objectives for the listed species.

3. The Act should specify that recovery plans have objectives and quantifiable criteria (e.g., size of population, amount of suitable habitat, sufficiency of data, and the like) that, if met, would require the agencies to initiate the delisting process within 120 days. The development of the criteria should consider the overall health of the habitat, impacts on species diversity, and other relevant ecological factors to ensure sustainability of the entire community. Recovery plan objectives should include early attention for species having the best likelihood of biological recovery in a timely manner, species that have a potentially large economic impact, species that are close to extinction, and species that serve a critical ecological function. The goal should be to develop the draft recovery plan within one year after a species has been listed.

4. The Secretary should have the discretion to preclude the designation of critical habitat if the Secretary determines it is either undeterminable or it is not necessary for the protection of the listed species. If it is to be designated, then the Act should provide for the designation of critical habitat

during development of recovery plans and provide incentives for such designation for clusters or related groups of species.

5. The recovery planning process under the ESA should require all appropriate state and federal agencies to develop one or more specific agreements to implement a recovery plan. Upon approval of an implementation agreement by each of the appropriate state and federal agencies, the agreement should be legally binding and incorporated into the recovery plan. An incentive should be created for federal agencies to approve implementation agreements by providing an easier, quicker section 7 process. Such implementation agreements should--

- -- expedite and provide assurances concerning the outcome of interagency consultations under section 7 and habitat conservation planning under section 10 of the ESA;
- -- ensure that actions taken pursuant to the agreement meet or exceed the requirements of the ESA; and
- -- should require that each appropriate agency that signs an agreement comply with its terms.

6. Recovery plans developed by the states utilizing the processes outlined in this paper and providing for public review and comment, should be construed as having satisfied the NEPA requirements for implementing actions.

7. There should be a mandatory status review of recovery programs at least every three years. If intermediate reviews reveal that the recovery plan criteria need revision, then the Secretary or states should revise the plan. If the recovery criteria have not been met, then the recovery team shall specify what has been and has not been accomplished under the recovery plan and indicate what else needs to be done.

8. State recovery planning and HCP's, exercised in conformance with the standards and guidelines developed coincidently with listing, must be considered by all federal agencies taking any action subject to Section 7 consultation. To the maximum extent practicable, federal agencies must have the responsibility of coordinating their management programs to cooperate with and ensure implementation of state programs for recovery of species.

9. To the maximum extent feasible, priority shall be given to the utilization of existing public lands for the conservation of species, insofar as conservation measures are compatible with the primary public purposes of such lands.

E. Delisting of Species

1. Due to the inherent pressures on the Secretary to emphasize listing and recovery actions, the Congress should express its intent that down and delisting is considered of equal importance and resources be allocated accordingly. There should be rapid down or delisting of species or

populations within a state or an ecosystem when the criteria have been met that are presented in a recovery plan or conservation agreement or have been established otherwise by the Secretary in conjunction with the affected state. Down and delisting actions should not be subject to the current process required for listing, delisting and changes in status of a species.

2. Delisting or down listing of a recovered populations should be encouraged if a listed distinct vertebrate population has reached recovery plan goals but another distinct vertebrate population has not.

III. INCREASE CERTAINTY AND ASSISTANCE FOR LANDOWNERS AND WATER USERS

The policy in the Act concerning private and other non federal landowners (owners of real property) should be as follows: The Secretary will thoroughly assess the economic consequences of each implementation step of the Act -- recovery plans, federal agency consultations, HCP's/Conservation Management Agreements (CMA's), etc. The benefits of the ESA are national in scope and the Secretary will explore ways in which those costs will be borne by the society as a whole and not solely by the individual landowner, non federal landowners and federal land users. Incentives and regulatory certainty should be provided to landowners who implement habitat or species conservation efforts.

A. Policy Issues[4]

1. All affected jurisdictional agencies and parties, including non federal landowners, should be given an opportunity through the recovery planning, HCP and critical habitat designation processes to have their concerns, interests and ability to contribute to the success of these processes considered and given close attention in the final plan.

2. Implementation of the Act, in some cases, has created significant economic impacts. Federal assistance should be used to mitigate these economic impacts whenever possible. Priority should be given to those means of promoting the recovery of species that also would assist in reducing social or economic impacts.

B. Landowner Assistance

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[4] The protection of water in the west is an enormous issue for all the governors. Many governors believe that state water law and interstate compacts must be respected while designing recovery goals and actions. Other governors disagree. They recognize that state water laws may not adequately have considered endangered species and see the need for an overriding level of protection of the public's fish and wildlife resources.

April 21, 1995

1. Financial and technical assistance should be provided to states, counties, tribes and municipalities to foster development of flexible conservation plans that allow for reasonable development and use of private property (including water rights). Development and use should be consistent with the conservation plan and should not significantly impact listed species.

2. Incentives should be provided to non-federal landowners to assist in the recovery of listed species and the conservation of candidate species as well as technical and financial support for such activities. Linkage to the conservation provisions of other Acts, such as Conservation Reserve Program(CRP) and Wetlands Reserve Program (WRP) sections of the farm bill, should be enhanced.

3. The Secretary and appropriate state agencies should be specifically authorized to enter into voluntary prelisting agreements and expedited HCP's with cooperating landowners and water users to provide assurances that further conservation measures would not be required of the landowners should a species subsequently be listed. Landowners and water users who have satisfactorily demonstrated that they will protect candidate species or the significant habitat types within the area covered by a prelisting agreement or HCP should be assured that they will not be subjected to additional obligations to protect species if the candidate species or additional specific species not covered by the agreement but dependent upon the same protected habitat type are subsequently listed under the ESA.

4. The federal agencies should develop and employ an inexpensive, expedited HCP process. This expedited HCP process should include a simplified NEPA review process.

C. Relief for Landowners and Water Users

1. The responsible state and federal agencies should be authorized to initiate procedures in the recovery planning process whereby landowners and water users whose impacts on a species are insignificant should receive for categorical protection from Section 9's taking provisions and section 7 jeopardy opinions. Those landowners and water users who do not receive categorical exclusion but have demonstrated adequate protection measures to maintain or preserve species or habitat should be eligible for programs developed by the Secretary for incentives to encourage those efforts, including regulatory relief and certainty (through expedited HCP's, etc.) and other means by which the land and water uses proposed by that landowner are allowed to proceed. Should the landowner or water user significantly alter land or water use practices then the relief or exemption can be reconsidered.

2. Regulatory incentives should be provided to landowners who voluntarily agree to manage or enhance habitat for species on their lands by excluding them from restrictions if they later need to bring their land back to its previous condition.

D. Non Federal Landowner and Water User Incentives

April 21, 1995

Incentive programs for land and habitat stewardship already exist at many jurisdictional levels (federal, state, local). Resource managers need, however, to more effectively match landowners who willingly enhance the habitat for listed species with workable financial incentives programs. Existing programs include but are certainly not limited to:

- conservation/soil and water quality provisions of the federal Farm Bill (CRP, WRP, Forest Stewardship Incentives Program, etc.);
- state and local land preservation programs, including associated tax relief;
- environmental easements administered by government, private or quasi public land trusts; and
- existing tax credits/incentives such as Minnesota's wetland and prairie tax credit.

Cooperation with non-federal land owners and water users is essential to the success of the Act, therefore, early involvement of and regulatory certainty for landowners and water users must be a policy of the Act. The identification of the full range of incentives programs that might be available to assist landowners and water users in good habitat stewardship should be developed. The stewardship incentives found in other federal programs like the Conservation Reserve Program, in laws governing inheritance taxes and in non-government programs should be catalogued, enhanced and coordinated. Additional areas that deserve further investigation include:

1. Inheritance laws -- A revision of the existing laws to discourage the practice of dividing up large ranches/farms to avoid inheritance taxes and thereby fragmenting the habitat.

2. Mitigation credits, trading/mitigation banking -- This idea must be debated more thoroughly to ensure appropriate use and application but it could have limited application in conserving ESA habitats

3. Federal cost sharing for specific habitat management, restoration and protection, and species recovery work -- This would have to be authorized under a program similar to the forest stewardship.

4. Incentives under other federal laws -- Incentives to public land ranchers under the Taylor Grazing Act might include. reduced grazing fees for conservation of a species habitat, priority for range improvement funds to improve a species habitat, extended permit tenure, etc.

The Big Sky Country

MONTANA HOUSE OF REPRESENTATIVES

July 13, 1995

TESTIMONY BEFORE SUBCOMMITTEE ON DRINKING WATER, FISHERIES AND WILDLIFE OF SENATE ENVIRONMENT & PUBLIC WORKS:

ENDANGERED SPECIES ACT

by DICK KNOX (R-WINIFRED, MT.) & EMILY SWANSON (D-BOZEMAN, MT.)
Co-Chairs, Montana Endangered Species Reauthorization Comittee

Mister Chairman, members of the committee, thank you for the opportunity to testify on behalf of the Montana Endangered Species Reauthorization Committee. We are Representative Dick Knox and Representative Emily Swanson, Montana state legislators who for the past eighteen months have co-chaired a committee to find common ground among a wide variety of Montana citizens about how to reform the Endangered Species Act. Dick Knox, a Republican state legislator, ranches with his sons outside Winifred, Montana, in a remote part of the state. Emily Swanson is a Democratic state legislator from a university town, and is a long-time conservationist. Although the two of us vote quite differently on many issues, we respect one another's willingness to find where we can agree on contentious problems.

Early in 1994, Representative Knox and Representative Swanson, in response to Congressional activity on the ESA, and with the urging of Senator Baucus, agreed to convene a group of Montanans from all points of view, evenly balanced, to discuss and find where we could agree on necessary changes to the act. We each invited nine people from our side of the issue. We wanted Montanans who represented both sides of the political aisle and who represented economic interests as well as environmental interests. Ranching, farming, timber, mining, wilderness, wildlife and recreation were all represented. We weren't experts or paid staff, just Montanans who live on the land and who have a willingness to accomodate one another's interests and seek agreement, Montanans who want to see the ESA work. Each member of the committee participated on their own time and at their own expense, not representing an organization. The committee included both legislators and citizens, and worked with technical advice from public, private and non-profit experts.

With facilitation by the Montana Consensus Council, over eighteen months we came to agreement on a set of guiding principles we think should continue to be incorporated in the act, and a set of suggested improvements which are quite general but give us a framework within which to respond to various pieces of proposed legislation. We believe strongly that our process, based on bringing all parties to a

table and seeking consensus, is the best way to find workable solutions to complex and controversial problems. We produced a status report of our work in preparation for responding to legislation proposed by this Congress. The status report is submitted as part of our testimony.

Most basically, our committee supports the findings, purposes and policy of the ESA as outlined in Section 2. The intent of the act, keeping species from extinction, is worthwhile. Yet we recognize that the ESA can be improved. There are significant areas of the act which don't work well on the ground. Two areas we quickly agreed on for reform were: the level of state involvement, and the delisting criteria and process. We agreed that more local control over implementation of the act would help, and that delisting needs clearer definition so it can take place for more species and provide a degree of certainty to the act that is now missing. For the purposes of this testimony, we limit our comments to those pertinant to state involvement.

We agreed on several recommendations around state involvement. Our recommendations are based on the need to build sound relationships with landowners whose land has habitat critical to threatened or endangered species. With so many species residing on private land, and with listing of a species potentially so restrictive, landowners are fearful of government intrusion. Due to staffing constraints, there are few federal agents on the ground working one-on-one with landowners. We felt that state wildlife agencies, which characteristically have more field staff, have a chance of better personal relationships with local landowners. In Montana, state fish and game field staff frequently have personal relationships and deep personal knowledge of the wildlife, the land and the people living on it. Better on the ground information is available to field staff close to the landowners. We felt, therefore, that states should have:

* opportunities to provide more meaningful input on listing or delisting determinations

* opportunities to provide more meaningful input on designating critical habitat

* greater opportunity to assume the lead, in cooperation with other appropriate entities, in developing and implementing recovery plans.

* adequate federal funding to assist states in implementing ESA priorities

States have great potential for making the act work more efficiently and effectively. Over the long term, it is vital that we turn the act from crisis management to preventive management with more local control. We urge you to adopt legislation which includes these measures. Further, we urge you to proceed toward resolution of these complex issues using as much as possible a process that includes diverse viewpoints, trying to find what is common ground.

Reauthorizing the Endangered Species Act:

A Status Report

Prepared by the

Montana Endangered Species Reauthorization Committee

with the assistance of the

Montana Consensus Council
State Capitol
Helena, MT 59620
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Draft of May 8, 1995

Introduction

The management of endangered species is one of the most compelling natural resource issues in Montana. In response to Congressional activity during 1994 to reauthorize the federal Endangered Species Act (ESA), legislative leaders in Montana created the Endangered Species Act Reauthorization Committee (Committee) to *develop consensus recommendations to improve the structure and implementation of the ESA.*

This document is presented as a "status report." It lists the participants, explains the process, and captures the initial areas of agreement. The members of the Committee plan to continue working on these and other ideas for improving the ESA as Congress moves to reauthorize the ESA in 1995.

Committee Members

Don Allen
Montana Wood Products Assoc.

Don Bianchi
Belgrade

John Bloomquist
Montana Stockgrowers Assoc.

Louise Bruce
Montana Wilderness Assoc.

Janet Ellis
Montana Audubon Council

Bob Gilbert
Sidney

Senator Lorents Grosfield
Big Timber

Rep. Hal Harper
Helena

Rep. Chase Hibbard
Helena

Jim Larsen
Montana Farm Bureau

Rep. Dick Knox
Winifred

Dr. Dan Pletscher
University of Montana

Rep. Bob Ream
Missoula

Jim Richard
Montana Wildlife Federation

Rep. Bill Ryan
Great Falls

Michael Scott
The Wilderness Society

Rep. Emily Swanson
Bozeman

Rep. Doug Wagner
Hungry Horse

Louise Wilson
Women Involved in Farm Economics

Suggested Improvements to the Endangered Species Act

Part 1: Proactive, Preventive Measures

1. **Increase opportunities for incentive-based mechanisms to reduce the need to list additional species as threatened or endangered.**

The Committee recommends that private landowners, state and local governments, and responsible agencies of the federal government be encouraged and authorized to experiment with incentive-based mechanisms to reduce the need to list additional species as threatened or endangered. These incentive-based mechanisms should provide flexibility to meet the needs of both species and landowners, and may include, but not be limited to, habitat management plans and cooperative agreements (which may be similar to habitat conservation plans and cooperative management agreements, but applied in such a way as to reduce the need to list additional species as threatened or endangered).

The status and effectiveness of these experiments should be included in an annual report prepared by the Secretary of the Interior (Secretary) and presented to appropriate committees of Congress.

2. **Encourage federal land management agencies to take proactive, preventive measures to reduce the need to list additional species as threatened or endangered.**

The Committee strongly encourages federal land management agencies to take proactive, preventive measures to implement their existing programs in a way that reduces the need to list additional species as threatened or endangered. However, the Committee wants to make sure that such efforts are integrated with, and do not necessarily supersede, the other management objectives of federal land management agencies.

Part 2: Peer Review

3. **Ensure that ESA decisions are based on sound science by providing adequate scientific peer review.**

The Committee supports the use of scientific peer review panels where there is disagreement over the scientific basis for listing or delisting a species. The Committee also recommends that a summary of a peer review panel's comments be made available to the public.

Part 3: State Involvement

4. **Provide an opportunity for the state to provide more meaningful input on listing or delisting determinations.**

In many situations, the State may be able to provide commercial and scientific information that would be useful in making decisions on the listing or delisting of a species. The Committee recommends that, as part of the processes for listing or delisting a species, the Secretary should solicit and fully consider scientific and commercial data from the State and other relevant persons.

5. **Provide an opportunity for the state to provide more meaningful input on designating critical habitat.**

In many situations, the State may be able to provide economic, commercial, and scientific information that would be useful in making decisions on the designation of critical habitat. The Committee recommends that, as part of the process for designating critical habitat, the Secretary should solicit and fully consider scientific, commercial, and economic data from the State and other relevant persons.

6. **Provide a greater opportunity for the state to assume the lead, in cooperation with other appropriate entities, in developing and implementing recovery plans.**

To allow the state an increased role in managing threatened and endangered species, the Committee recommends a series of steps that would allow an appropriate entity within the state (e.g., the Office of the Governor) to assume the lead, in cooperation with other appropriate entities, in developing and implementing recovery plans. This series of steps should be modeled after other federal environmental statutes, and include the following sequence of steps:

A. The Secretary should develop specific standards, criteria, and timelines through formal rulemaking under which a state could assume the lead in recovery planning pursuant to the ESA.

B. The state could then make an application to the Secretary to assume the lead in preparing and implementing recovery plans for particular species – assuming it has the necessary expertise, capability, and authority, and fulfills the standards and criteria promulgated by the Secretary.

C. If a state has the necessary expertise, capability, and authority, and fulfills the standards and criteria set forth by the Secretary, the Secretary should be given the authority to approve the state's leadership in preparing and implementing recovery plans in cooperation with other appropriate entities.

D. The Secretary should then have the authority to approve the recovery plan prepared by the state.

E. Finally, the Secretary should have the authority to monitor the implementation of the recovery plan and should be allowed to revoke the state's leadership if implementation does not adequately promote the recovery of the species.

Part 4: Recovery Plans

7. Ensure that locally affected interests are meaningfully incorporated into the development of recovery plans.

The Committee recommends that additional steps should be taken to meaningfully include public input and advice into the development of recovery plans. In the past, while public comments are solicited during the process of developing recovery plans, it is not always clear how the input is considered, how trade-offs are made among competing values, and how decisions are made. Therefore, the Committee recommends more explicit procedures to ensure that the interests of local individuals and organizations will be considered in the development of recovery plans.

8. Clarify that federal agencies have a responsibility to use their existing programs to foster the implementation of recovery plans.

The Committee would like to make it clear that all federal agencies should implement their existing programs in a manner that is consistent with approved recovery plans.

9. Ensure that approved recovery plans continue to be implemented until there is adequate evidence to modify the plans.

The Committee believes that approved recovery plans shall be revised if (1) there is credible scientific and commercial information to demonstrate the need for such changes; or (2) alternative measures are needed to minimize adverse social and economic impacts while continuing the timely recovery of the species.

Part 5: Delisting

10. Clarify the process of delisting a species.

To improve public understanding of the process of delisting a species, the Committee recommends that the Secretary submit a report to appropriate committees of Congress on the status of recovery plans and the delisting of species. This report should include specific information on the determination criteria outlined in Section 4(a) of the ESA. This type of information will provide a better understanding to citizens and leaders about the status of listed species and whether it is time to start the delisting process.

11. Clarify in the recovery plan what type of criteria should be used to delist or downlist a species or a population.

The Committee recommends that the ESA be amended to clarify what type of criteria should be considered in whether to delist or downlist a species or a population. The Committee believes that a listed species or a population should be delisted or downlisted only when habitat and population goals for the species, and other criteria outlined in Section 4 of the ESA, have been achieved.

12. Encourage the Secretary to appropriately downlist or delist a species or population when they satisfy the criteria and goals outlined in recovery plans.

To provide more certainty during the implementation of recovery plans, the Committee recommends that the ESA be amended to specifically encourage the Secretary to appropriately downlist or delist a listed species or a population in a recovery plan when the criteria and goals outlined in the recovery plan are satisfied.

13. Clarify the parameters for monitoring a delisted species.

The Committee recommends that the Secretary, in cooperation with the states, should monitor a delisted species for not less than five years after it is taken off the threatened and endangered species list. During the process of monitoring a delisted species, the Secretary should consider (1) the criteria listed in Section 4 of the ESA; (2) population and habitat goals of the species; and (3) the criteria listed in the recovery plans.

STATEMENT OF DAVID R. SCHMIDT, ON BEHALF OF THE NATIONAL ASSOCIATION OF COUNTIES

Mr. Chairman and Members of the committee. My name is Dave Schmidt, I am a Commissioner from Linn County, Oregon, here today representing the National Association of Counties (NACo) as the Chairman of its Public Lands Steering Committee. I am pleased to be here today to offer a national county perspective on needed changes to the Endangered Species Act (ESA, or the Act).

The NACo is the only national organization representing county government in the United States. Its membership includes urban, suburban, and rural counties. NACo is governed by its member counties through a weighted voting system based on population. NACo represents the Nation's 3,042 counties, of which, 1,750 are member counties. As a reference, 2,688 of these counties (1,104 members) are east of the 100th meridian, the traditional east-west dividing line. We do represent a truly national perceptive.

It is important to note, if you examine overlay maps (derived from U.S. Fish and Wildlife information), of habitat necessary to protect all listed species, threatened species and those that are known to be candidate species, every county in the United States is potentially affected by the Endangered Species Act.

NACo has taken a moderate approach in its review of the ESA, with the purpose of strengthening the existing Act, rather than proposing a wholesale rewriting of its provisions. These changes have been developed after more than a year of review by the Public Lands Steering Committee and its various components. The NACo Board of Directors approved these suggested changes at their most recent meeting in May of this year.

There are seven points to the NACo proposal:

1. A recognition that if it is in the national interest to protect species, then it must be a national priority to attempt to forestall listing by aggressively providing for pre-listing incentives to affected governments and private property owners to avoid the negative impacts of the Act by entering into conservation agreements with the Secretary of the Interior.

2. For greater involvement by State and local governments in planning and management decisions affecting the listing process.

3. For a significant improvement in the scientific review process by including verifiable peer review by a qualified agency other than the U.S. Fish and Wildlife Service or the U.S. Biological Service.

4. The affects on the economic, social and cultural aspects of human activity, and their communities, must be fully studied, and taken into account in all decisions made pursuant to the Act.

5. A full partnership for the affected State, its local governments and affected private property owners in the post-listing consultation and decisionmaking process, including critical habitat, habitat conservation plans and full-scale recovery plans.

6. Adequate protection of private and public property rights:

a. Prior to a listing, no action shall be taken to restrict or interfere with the use of private or public property without consultation with the affected land owner. Every effort should be made by the Secretary and the affected land owner to establish voluntary agreements for species conservation and habitat protection.

b. Following a listing, no action shall be taken to diminish the use of property until full consultation has taken place with affected landowners and, full compensation is agreed upon between the landowner and the Secretary. If the Secretary refuses to act or limits the compensation to below fair market value, the affected landowner is granted status to pursue due process in the appropriate Federal District Court.

7. Local government's land use authority should be recognized and, to the extent practicable, delegation of implementation of the Act should be allowed at the State government level to avoid redundancy and to enhance coordination between State, local and Federal Governments.

I would like to comment briefly on each point to clarify our position.

First, NACo believes it is in everyone's best interest, and in the best interest of species, not to have to list a species under the ESA. Every effort should be made to conserve habitat and take appropriate actions to avoid implementation of the stringent requirements of the Act. We believe that providing incentives for potentially affected local governments and private property owners to enter into conservation agreements with the Secretary of the Interior may lead to better overall coordination and management of habitat, and provide for a longer-term solution that has a greater level of public acceptance than a habitat conservation plan imposed on the populace by Federal officials. These incentives could be monetary, regulatory relief, tax credits, land exchanges, or any other number of valued processes. We believe

this voluntary approach is also more likely to provide the flexibility to fit the specific conditions of the site and the landowner's goals while providing a level of protection not contemplated by the ESA today. We also understand the fiscal realities of today's budget situation and believe we must prioritize the money and time invested among species to get the best return for our investment in their conservation. There is not enough money to do it all, and indeed, some species will be lost regardless of how much money is spent on their recovery. Voluntary agreements can help stretch those conservation dollars.

Second, throughout the current ESA, local governments are given virtually no role to play in the decisionmaking process, the planning process or the implementation of the ESA except to the extent Federal officials, or their State partners, dictate terms and conditions to local officials. Not every county in the Nation is prepared to immediately participate in all aspects of the ESA process, but many have a significant body of expertise that has been woefully under-utilized because the Act does not require Federal officials to even consult local governments, let alone ask them to substantively participate in implementing the Act. NACo advocates involving affected local governments whenever possible.

Third, the importance of open scientific peer review cannot be overlooked. Too often in the past this review has been a closed process without scrutiny from the public. The Clinton Administration agrees that open peer review is critical to the viability of decisions made pursuant to the ESA. NACo's concern is too often this "peer review" is nothing more than one set of Interior Department scientists reviewing another set's work product. Or academics relying on Interior grants and contracts looking over the work of their benefactors. We would suggest that a new version of the Act require peer review by a qualified organization fully outside the sphere of the Interior Department's scientific community. We believe this can be accomplished by contracting with independent academia, or other Federal, State or local agencies with the appropriate expertise. This form of open verification only serves to strengthen the decisions made under the Act, and improves public acceptance of the outcomes.

Fourth, NACo believes that while species conservation and habitat protection are important goals, we must understand, and more fully take into account the human implications of actions taken pursuant to the Act. We believe that too often in the past Federal officials have decided to take certain actions to protect habitat, with the view that the humans affected by those actions will just have to accept them... like it or not. This heavy-handed approach has generated a good deal of concern and, quite frankly, opposition to the Act and its intended goals. We believe that the economic, social, and cultural aspects of human activity must be given greater weight in the post-listing decisionmaking processes of the Act. We acknowledge that the whether a species is threatened or endangered is a matter of biological science, but what is done to address that status has implications for a much broader arena. Again, we are not going to be able to save them all, we will have to be prepared to perform "species triage" and accept the fact that not all habitat can, or should be protected. An example, fringe areas of a species range should not dictate mandatory recovery efforts when more than adequate populations and habitat exist elsewhere.

Fifth, As stated above, affected local governments and private property owners need a greater role in all aspects of the implementation of the ESA. To that end, NACo feels strongly that through the post-listing consultation process and the development of critical habitat designation, habitat conservation plans and full-scale recovery plans, local governments can play a significant role in assuring the success of the conservation effort. Land use planning decisions are primarily a function of local government. Citizens are familiar and, by and large, comfortable with local processes for planning and decisionmaking. Most affected citizens merely want to have input into the planning of designations affecting their lives and livelihood, and they believe local officials are more likely to represent their interests than Federal bureaucrats. We also believe that local decisionmakers can provide the flexibility and timely responses necessary to make the Act work. Secondarily, local governments may be able to make decisions regarding habitat outside the core review area that may have positive implications for species conservation and recovery.

Sixth, NACo believes that to the fullest extent possible, public and private property need to be adequately protected from limitations on use without first having the benefit of full consultation with the Department of the Interior. Every effort should be made to develop voluntary conservation agreements and plans for habitat conservation at the local level. It is also NACo's view that, just as with any other "public" project, if decisions made pursuant to the ESA significantly reduce the use of property, public or private, full compensation from the Federal Government should be negotiated between the landowner and the Secretary. We understand that

appropriated funds are scarce and in this era of balancing the budget direct cash payments may be unrealistic, but we believe there are other forms of compensation that could be considered, such as land exchanges, tax abatements, tax credits, or possibly regulatory relief. These would clearly have to be authorized within the framework of the Act, but we believe they could help solve a vexing problem.

Last, Congress should consider turning some of the responsibility for implementing the ESA directly to States and local governments. As I have mentioned before, local land use decisions are handled regularly and effectively through local government processes. When habitat conservation efforts fall within the exclusive jurisdiction of a local government, NACo believes it would be more efficient and effective to allow those local officials to address the conservation needs of the species. If the conservation effort becomes multi-jurisdictional, State authorities would probably be more effective. In either case, we believe the closer to the people the decisions can be made, the better.

In conclusion, the National Association of Counties advocates an inclusive, rather than exclusive decisionmaking process; a participatory planning process rather than a dictatorial one. We believe that by bringing more of the decisions to the local level, controversy is lowered, solutions are likely to be more creative, providing for flexible solutions rather than rigid dogma, and dislocation is not likely to be as shattering.

It would be over-reaching to say that all counties across the country are prepared to take on the challenges of implementing the ESA. . . . Many are not even aware of the potential implications of a listing. However, in reauthorizing the Act, Congress should consider putting as much flexibility into its provisions as possible, erring on the side of participatory decisionmaking at the lowest possible level, rather than the current practice which is perceived to be exclusive and dictatorial.

America's counties stand ready to share in the daunting task of protecting and conserving species, and the habitats necessary for their survival. It is critical that this country have a viable species conservation program established in law, but let's have legislation that accomplishes these goals effectively, efficiently and in a manner the American people feel is fair. We ask that we be made partners in that process, not just observers on the sidelines.

STATEMENT OF MARK L. PLUMMER, PH.D.*, SENIOR FELLOW, DISCOVERY INSTITUTE

In 1973, when Congress passed the Endangered Species Act, its members believed the goal of banishing extinction was imperative and within quick reach. "When we threaten endangered species, we tinker with our own future . . . ," said Representative Leonor Sullivan, Democrat of Missouri, chairman of the House Merchant Marine and Fisheries committee. "And we do so, for the most part, for reasons that can be described most charitably as trivial." The implicit assumption, echoed by many conservationists today, was that endangered species can be saved without significant sacrifice. If development affects a species here, we can just move the development or the species somewhere else—an easy thing to do. Thus saving everything is not an unreasonable burden.

Over the past twenty-one years, it has become increasingly clear that the opposite is the case. From loggers in the Pacific Northwest to orange growers in Florida, from backyard barbecuers in upper-state New York to real estate developers in southern California, it is ordinary men and women doing ordinary things that threaten species, not trivialities. Still, the good reasons for endangering biodiversity might still not be enough if losing even one species would indeed "tinker with our future." Yet that belief also stands in ruins. Losing a species may be tragic, but the result is rarely, if ever, catastrophic.

The problem of endangered species, then, presents us with few automatic solutions. As uncomfortable as facing the prospect may be, we must make choices that will have profound consequences for the future of our natural heritage. Ignoring this necessity, as the Endangered Species Act does, will not make the difficult choices go away. Instead, we will make them poorly, with little regard for either the good reasons for protecting species or the good reasons for sometimes not protecting them. Our efforts are unlikely to give us much satisfaction—as the record of the act amply demonstrates.

The goal of the Endangered Species Act is to bring species to "recovery," which the act defines as the point "at which the measures provided pursuant to this Act are no longer necessary." If a species attains recovery, Fish and Wildlife is supposed to remove it from the official list. At the end of 1973, the list consisted of 122 species

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*Some of the material in these comments is derived from *Noah's Choice: The Future of Endangered Species* (Knopf, 1995) and other work co-authored with Charles C. Mann.

that Fish and Wildlife had placed on the list under the 1966 and 1969 endangered species acts. By the end of 1994, 21 years later, the agency had added another 833 domestic species, an average of almost 40 species a year. In that time, the agency delisted 21 species, an average of one species a year.

In fact, the 40-to-1 ratio of listings to delistings overstates the progress rate, because few of the latter were due to recovery. Seven species left the list when Fish and Wildlife declared them extinct. Of these, only one species with a good chance of survival—the dusky seaside sparrow—disappeared on the agency's watch. The others were either on the verge of extinction at the time of listing because of their extreme rarity, or long thought to he extinct, but placed on the endangered list in the hope that the action would spur biologists to discover new populations.

Another 8 of the 21 delisted species were removed because they should not have been on it to begin with—the data on which the agency decided to list them turned out to be mistaken. An example is the Rydberg milkvetch, a member of the pea family originally known only through samples taken from southwestern Utah in 1905. Unable to find more Rydberg milkvetches, botanists believed it to be extinct. When a few populations turned up in 1975, Fish and Wildlife added the plant to the endangered list. In the 1980's, though, taxonomists decided that almost a dozen populations of the plateau milkvetch, a close relative, should instead he counted as Rydberg milkvetches, automatically increasing the numbers of the latter. Concluding that its original action was in error, Fish and Wildlife delisted the plant.

Finally, even the remaining balance of 6 domestic species delisted by Fish and Wildlife because their status had improved did not always owe that improvement to the Endangered Species Act. Consider the arctic peregrine falcon, which Fish and Wildlife struck from the list in October 1995. Although the Endangered Species Act banned hunting the falcon or harming its habitat, these actions, according to the official notice of delisting, were not "pivotal" to its recovery. Instead, the bird owes its improvement largely to the ban on pesticides like DDT, an action that predated the Endangered Species Act. (On June 30, 1995, the Fish and Wildlife Service proposed removing the American peregrine falcon from the list, for virtually the same reasons.)

By other measures of success, the act shows similarly poor results. Reclassifying species from endangered to threatened has occurred less often than delisting: Between 1973 and 1994, Fish and Wildlife reclassified 13 species. And according to the 1992 biennial report from Fish and Wildlife on the recovery of listed species, the latest available, only 69 of the 711 species then listed—not quite 10 percent of the total—could be described as "improving," indicating active progress toward full recovery. Twenty-eight percent had "stable" populations, a sign that their declines had been halted. But a full 33 percent were "declining;" another 27 percent were "unknown." (The remaining 2 percent were believed to be extinct.) And species with stable populations were being held in a precarious position: almost three-fifths had achieved fewer than 25 percent of their recovery objectives.

The failure of the law to achieve full recovery means that once a species joins the list, it is almost certain to remain there for an indefinite period of time. Any private or public action that threatens the species, no matter how praiseworthy in other circumstances, becomes tainted. Private landowners and Federal agency managers live under the perpetual shadow of the Endangered Species Act. In this way, an endangered species becomes a permanent liability for anyone unlucky enough to be host to one.

Understandably, landowners have responded by trying to free themselves from these restraints, sometimes in ways that work against the goal of protecting biodiversity. In the Austin area, for example, some landowners keep their property clear of the vegetation that could provide homes for the black-capped vireo or the golden-cheeked warbler, two endangered birds. In the Pacific northwest, some timber owners have adopted forest practices that ensure conditions inimical to the northern spotted owl. An alternative strategy is to challenge the scientific basis for having a species on the list at all. In Orange County, lawyers debate whether the coastal California gnatcatcher is really a subspecies or merely a variant of another gnatcatcher subspecies with huge populations further south. In Alabama, the same controversy rages, in this case over the Alabama sturgeon.

Most perverse of all is the fight over the attempts by the Department of Interior to launch a nationwide biological survey. What possible objection could landowners have to this survey? The answer is simple. The knowledge that a parcel of land houses a listed or potentially listable species puts that land under a cloud. The better course of action is to keep the government in the dark, and quietly scrape the land bare of vegetation.

These responses point to a central defect in the current law. In principle, the Endangered Species Act creates a two-step mechanism. Biologists first determine that

a species is sufficiently endangered to be added to the official list—a decision that is supposed to be made on purely scientific criteria. Once a species is listed, the U.S. Fish and Wildlife Service then is charged with developing a program for returning the species to health.

Science in the first step, policy in the second—except that the second step admits only one goal, full recovery. The scientific determination that a species is endangered effectively locks in the duty to save it, almost no matter what. Because full recovery has turned out to he an impossibly difficult task, the political conflicts that should naturally be resolved in the second step find their expression instead in the first, where they cannot be debated on any but scientific grounds. Biologists, not government or elected officials, are the ones who set policy, assuming the role of ecological mandarins with the power to bless or condemn a wide variety of land uses. In this way, science becomes embroiled in what are essentially policy questions, and the actions of scientists, just like those of landowners, are greeted with suspicion, fostered by a belief that their values, not their data, hold sway.

Reforming the Endangered Species Act must begin with restoring the separate domains of science and policy. No matter how carefully scientists perform their analyses of what actions can be taken to protect and restore endangered species, they cannot tell us what actions we should take. Twenty-one years ago, Congress attempted to circumvent those choices by setting full recovery as the only acceptable goal. That strategy has failed, and so reform must begin by allowing true flexibility in the second, policy stage. The endangered list should remain as a scientific tally of this nation's threatened wildlife. But it should no longer be tied to the single goal of full recovery for each of its entries. Instead, we must acknowledge that the choices of how much and what forms of protection an endangered species receives profoundly affect people's lives, and are therefore inherently political. Species are menaced to improve roads to hospitals, build university campuses, create affordable housing, make the raw material for newspapers and magazines, and create a host of other social goods. When we alter or cancel these projects to benefit nature, we make life harder for human beings. In many cases the sacrifice will be worthwhile; but we must change the Endangered Species Act to create a meaningful opportunity to say "no" when it is not.

Creating such an opportunity does not mean tossing aside all duties to nature. The law should retain basic duties for both private and public parties. More importantly, those duties need not be cast in the simplistic terms of saving a species or consigning it to extinction. The choices we face involve actions with uncertain outcomes. Setting aside one part of a species's habitat, for example, will increase its chances of survival, not provide a guarantee; similarly, allowing a housing development to fragment its habitat will decrease its chances, not ensure its doom. Determining what those changes will be is a matter for biologists, just as estimating the costs or benefits of either action is a matter for economists. Although scientists may disagree with one another over the answers, these questions lie squarely in the domain of science. But once the dust has settled, the choice of what action to take is in the domain of politics, not science.

Although the present system does not recognize any goal short of recovery, it is forced by reality to choose among actions. It is tempting to believe, then, that the current law can be fixed merely by improving its unofficial system for making those choices. This hope is unfounded, however. The more flexible the administration of the current law becomes, the further its results will recede from its statutory goal. And as long as species fail to achieve that goal, they will remain on the list. The government will retain its power to say "no" to landowners, who in turn will still face the incentive to work against efforts to save species. This dissonance would only be exacerbated by triggering the law earlier in a species's slide toward extinction, or expanding it to cover entire ecosystems.

The time has come to question the goal that underlies the Endangered Species Act: Save every species, no matter what the cost. That duty denies that limited resources and competing values force difficult choices. Crying "no more extinctions" produces a noble sound, hut it does nothing to ensure that extinction will stop. And it has the potential for worsening the status of biodiversity, because aspiring to the perfect may prevent us from obtaining the merely good. The absolute duty of the Federal Government to stop any action that threatens a listed species must be relinquished. Otherwise, attempts to resolve conflicts between species and humans will wither under the eternal shadow of the Endangered Species Act.

DISCOVERY INSTITUTE,
Seattle, WA, July 25, 1995.

Hon. DIRK KEMPTHORNE,
367 DSOB, Washington, DC 20510.

DEAR SENATOR KEMPTHORNE: Thank you for the opportunity to testify at the July 13 hearing on the reauthorization of the Endangered Species Act. The hearing featured a wide array of viewpoints; I hope you found my testimony useful to your task of reauthorizing the Endangered Species Act.

I am writing now to communicate my surprise at the comments about my book, *Noah's Choice* (co-written with Charles C. Mann, who joins me in this letter) in the testimony of another panelist, Prof. Stuart Pimm of the University of Tennessee. Prof. Pimm is correct in one instance—in our single, glancing reference to Elton (p. 38 of our book), we placed him at the wrong British university. (We took our brief material on Elton from *Nature's Economy,* by Donald Worster. Professor Worster's book is an excellent history of the science of ecology, despite the fact that he also places Elton at Cambridge.) We can understand that an alumnus like Prof. Pimm might take umbrage at this slip; Harvard graduates don't like it when someone erroneously credits Yale.

The rest of Prof. Pimm's critique, however, exemplifies the attitude that works *against* resolving endangered-species conflicts. Rather than grappling with these conflicts in all their complex, human dimensions, such scornful fingerpointing seeks to pin the blame on a mythical cabal of greedy, short-sighted people. Discussing the problems in the Texas Hill Country, for example, Prof. Pimm speaks of a "campaign by developers to destroy" it. But the root cause of the conflict is not home-builders' avarice; it is the desire of ordinary, middle-class people to live in a beautiful place.

Such wishes—understandable, even praiseworthy—are at the bottom of our biodiversity troubles. Dismissing them as (in Prof. Pimm's phrase) "this mantra of progress for progress sake," rather than acknowledging their legitimacy, will only get us further into the mire, ethically and practically. To go forward, we should listen to all sides in these disputes, accept the validity of diverse points of view, and try to reconcile them when possible. (We tried to follow this approach in our book, seeking the viewpoints of real estate people, ecologists, environmentalists, government agents, and political figures across the Nation; although Prof. Pimm "cannot imagine that [we] talked to anyone in Tennessee about this [snail darter] case," the relevant Tennesseeans' names are in our endnotes.)

The tactic of finger-pointing is comforting, because it allows one to dismiss as unworthy the inconvenient human aspirations behind the day-to-day activities of the populace. But it is also strikingly undemocratic. In this regard, we cited (pp. 174–175) of *Noah's Choice*) Sen. Jake Garn:

> [A]s a society, and as a Congress, we have competing responsibilities. Beyond the need to protect the environment, we are also responsible for the provision and preservation of aspects of our society which are judged desirable by the American people. These include food and water, electricity and other forms of power, and the materials we use to make everything from hospital beds to golden spittoons for Las Vegas casinos. Some of the uses to which we put our physical wealth are honorable and noble; others are certainly not that useful. *But it is the essence of a free society that individuals are left to make the judgment for themselves.* (emphasis added)

In short, the impulse behind Prof. Pimm's criticisms seems to be that he did not like our efforts to present the difficult choices carefully and sympathetically; he would apparently have preferred a biased, sensational account of the "evils" created by those who endanger species with otherwise praiseworthy activities. By implicitly demonizing the goals of ordinary people, this critique dismisses the necessity of public input—a notion that runs contrary to every American tradition.

Sincerely,

MARK L. PLUMMER,
Senior Fellow, Discovery Institute.

STATEMENT OF GREGG EASTERBROOK, AUTHOR, "A MOMENT ON THE EARTH"

POINT ONE: ENVIRONMENTAL OPTIMISM.

In 1970, year of the first Earth Day and of the founding of the Environmental Protection Agency, the expectation of the intellectual left was that environmental affairs had begun an unstoppable descent into gloom and degradation. The expectation of the intellectual right was that environmental regulations would strangle the

economy. Twenty five years later, neither of these ideas has come true. And yet today both continue to dominate environmental debate, including debate over the Endangered Species Act.

Today the American environment is not sliding toward any unstoppable "end of nature." Quite the reverse: most U.S. environmental indicators have become positive. Here are a few stated quickly. Since 1970, U.S. smog has declined by a third, even though there are now nearly twice as many cars on the road. Since 1970, acid rain has declined by about 45 percent, though we now burn twice as much coal, the main source of acid rain pollutants. In 1970, one-third of U.S. lakes and rivers were safe for fishing and swimming; today two-thirds are, and proportion continues to rise. Toxic emissions by major U.S. firms have declined 43 percent since 1988, even as production rose. Most of the United States is experiencing reforestation, not deforestation. The tonnage of wastes Americans send to landfills peaked in 1988 and has been declining since, as recycling takes hold. World emissions of CFCs, the chemicals linked to ozone layer depletion, peaked in 1987 and have declined very rapidly since. Land disposal of untreated chemical waste ended in the year 1991 Ocean dumping of sewage sludge by major U.S cities ended in the year 1992.

Positive indicators do not mean environmental problems are solved If smog declines by a third, for example, two thirds of the problem remains. The key point here is that U.S. environmental trends have almost universally been expected indefinitely to be negative Instead they have become moderately positive This is a shift of historic magnitude.

In a sense, in the past 25 years the United States has conducted a remarkable "proof of concept" experiment, showing that nature and an advanced industrial economy can coexist. In 1970, many commentators and intellectuals would have sworn that to be impossible; many would still swear it impossible today. Yet experience with the American environment shows that reasonable compromises between development and conservation can be found Owing to this, a provocative new book—OK, by me—predicts that the reigning view of environmental affairs is about to undergo a dramatic, 180-degree swing Pessimistic conceptions of the environment will expire We are about become environmental optimists.

POINT TWO: AMERICA AT ITS BEST

I would submit to this committee that the successful protection of the environment is the greatest social achievement of the United States of the past quarter century. It is an achievement in which all citizens can take pride. Success in environmental protection represents America at its very best.

I've set those few words off as a separate point simply because they are such a pleasure to read.

POINT THREE: NO TURNING BACK

But *why* do we have positive environmental trends in the United States today? This is not just some fortuitous coincidence. It has happened because society has enacted staunch, effective environmental regulations. Just liberalism must let go of the idea of a fragile, collapsing ecology, conservatism must let go of the idea that environmental regulations don't work. They do. That the regulations work is the reason environmental trends are so encouraging. And while there are many instances in which environmental regulations can be made more flexible or switched to market forces, it would be a drastic error to overturn the basic architecture of those regulations, as they have created the very environmental optimism at which we may now marvel.

In so many issue areas—crime, drugs, the decline of public education—social trends are almost uniformly negative In the environment most trends are now positive, and may grow more positive still as regulations are made flexible and market-based. The conversion of the environment to an arena of optimism has been accomplished in the prototypically American way: by combining clever technical and scientific innovations with entrepreneurial vision and with the basic impulse of representative democracy. Twenty five years ago, Americans began to tell their elected representatives that they would not tolerate further environmental degradation, and their representatives faithfully carried out the instructions of the citizenry by enacting conservation law.

As Congress moves to revise conservation law, it is imperative that the basic success of most environmental protection efforts not be forgotten. New efficiencies in environmental controls are a highly desirable goal. But the governing rule of every regulatory reform must be: NO TURING BACK.

POINT FOUR: BEYOND THE ENDANGERED SPECIES ACT

I believe that environmental optimism and the rule of no turning back can help light the way beyond the seemingly irresolvable disputes surrounding the Endangered Species Act.

First we must acknowledge the optimistic side of the equation, namely that the doomsday views of species loss are almost certain to be exaggerations. Yet we must also acknowledge that species protection is nevertheless a necessity. The reason there has not been any species wipe-out in the United States is that we have powerful legal protections. As the Endangered Species Act is changed, simplicity and fairness to property holders must be achieved, but there can be no turning back from the protective goal.

POINT FIVE: THE ENDANGERED SPECIES ACT AS A SUCCESS

Since the passage of the Endangered Species Act in 1973, seven listed species have fallen extinct, and perhaps some uncataloged species have been lost to extinction as well. The air and water pollution we create today will not trouble future generations, because we are in the process of cleaning it. But if we cause species to become extinct, there will never be anything our descendants can do about it, and they will judge us harshly for this callousness Every environmental mistake we make is reversible save one: extinction. This makes the prevention of human-caused extinctions an ecological priority.

Because seven species have fallen extinct since 1973, and only a few been delisted as recovered, it is common to hear conservative critics call the Endangered Species Act a failure. By contrast, I assert in my book *A Moment on the Earth* that the Endangered Species Act is "a spectacular success," given that the creatures under Endangered Species Act protection were those considered most likely to fall extinct Instead most haven't. This shows that human efforts to preserve species can in fact succeed.

Consider the inspirational recoveries of the California gray whale and the American bald eagle, both close to extinction in past decades and both now prospering. You've heard people say, "The whale and the eagle don't count as Endangered Species Act success stories, because both were protected by special acts of Congress, passed in the 1940's and 1960's " That is true But in effect what the gray whale and bald eagle got were Endangered Species Act protection two to four decades ahead of passage of the main act. *Because they have had this extra time,* these creatures have recovered. A few decades down the road, many other creatures that have received special protection only recently—including, I have little doubt, the spotted owl—will recover and be successfully delisted.

POINT SIX: NO SPECIES WIPE-OUT

Though species protection is a true necessity, it should not be done for doomsday reasons. Pessimists bat around amazing projections for species loss for instance, the distinguished Harvard biologist Edward Wilson recently estimating that 27,000 species are lost worldwide per year, a mind-boggling 74 extinctions per day. If Wilson is right about this number, we would be observing something very roughly in the neighborhood of 1,000 extinctions per annum in the United States, taking into account the U.S. share of the globe's land mass and the somewhat lower species density in temperate areas compared to the equatorial world. Instead observed extinctions in the United States are less than one per year. Even if some uncataloged U.S. species have fallen extinct without anyone noticing, the gap between a roughly predicted 1,000 U.S. extinctions per year and an observed less than one is so fantastic it calls the doomsday species estimates into question.

Demonstrative on this point is the experience in the Pacific Northwest. This area of the United States has in recent decades undergone all the negative influences that species pessimists say can lead to a species wipe-out: deforestation, forest fragmentation, rapid urban growth. Yet there are *no* known extinctions of animals or vascular plants in the Pacific Northwest forest zone in the postwar era. Zero.

Yet the predictions of species pessimists need not be right—they could be far less than half right—for species losses to remain priority concerns, owing to the essential role of biodiversity in the protection of the living system.

POINT SEVEN: IS THE ENDANGERED SPECIES ACT ENDANGERED?

Though there may not have been a species crash, the Endangered Species Act itself may crash soon. The act has been successful yet contains many faults, among them the penalties imposed on some property holders; the creation of disincentives; the incomprehensibility of the act to average citizens (if the legal departments of

Georgia Pacific and Boise Cascade have constant trouble figuring out the Endangered Species Act, how can a typical small landholder be expected to grasp it?); and worst, to my mind, its orientation on protection by litigation.

Attempting to have the U.S. court system going marching through the taxa and phyla of life, trying to pick and choose species for special protection, is at best a cumbersome approach. And now suppose Edward Wilson of Harvard is right about another of his projections—namely that the Earth contains far more species than now cataloged, perhaps as many as 100 million species. As those species are cataloged, so many Endangered Species Act lawsuits will be filed that the act will become unworkable in the literal sense. We're already on the boundary of that, and the science of biodiversity is in infancy.

POINT EIGHT: HABITATS NOT SPECIES

What progressive approach might combine the necessity of species protection with respect for property holders and an escape from the species-by-species litigation approach? Habitat conservation plans whose focus is on the protection of general areas, not species specifically

Such plans have been tested and are working well in the northern California forest belt, in urban southern California and parts of Texas. California forestry officials and the Interior Department have been developing habitat conservation plans in order to avoid having regions throw into pandemonium via Endangered Species Act rulings. To me, the fact that progressive State and local officials and progressive business managers are working to arrange successful habitat conservation plans, as alternatives to entering an Endangered Species Act morass, tells us such plans ought to replace the Endangered Species Act. General habitat preservation is a better idea than the species-by-species approach, as both research and common sense suggest that wild nature will be better preserved in blocks of land than in scattershot fashion.

A progressive solution to the defects of the Endangered Species Act would be a new Habitat Conservation Act that would create economic incentives for placing blocs of land into preservation status, but then accept that species vacillations, including extinctions, will occur within such blocks, given that species vacillations happen all the time in nature anyway.

At present the notion of replacing the Endangered Species Act with an entirely new philosophy of biodiversity protection does not appear to be on the table politically. Some factions want to keep the Endangered Species Act essentially as is, others want to weaken the act so much it would serve little purpose. If nothing else, clashes of these diametric positions will lead to political gridlock. I would urge this committee to study the idea of replacing the Endangered Species Act with an entirely new legal philosophy based on conservation of habitats—especially since land conservation is something Americans ought to be doing, in order to preserve nature's future, in any case.

Through the last 2 years, Interior Secretary Bruce Babbitt has said that the Endangered Species Act should be reauthorized as is that he will deal with its faults via administrative orders that exempt small parcels of land and create habitat conservation plans. If Secretary Babbitt's ideas are good ones—and I believe they are—then they should be codified into an entirely new approach, a Habitat Conservation Act.

POINT NINE: THE TWO-FOR-ONE PLAN

Finally I would suggest to the committee that a new Habitat Conservation Act might be powered by what I call the "two-for-one plan." It would specify that for each new acre developed in the United States, two existing wild acres must be purchased and placed in preservation status.

Such a legal premise would insure that the preserved portion of the United States would always expands more rapidly than the developed portion. Because the developed percentage of our country is smaller than might be guessed, a two-for-one system could be in effect for decades if not centuries.

Of course a two-for-one plan would require some Federal regulations, but many fewer pages than those that would be replaced. And most of the system could be administered privately, because a new Habitat Conservation Act could create private-enterprise preservation firms that would buy up and manage habitat land. Government would monitor these firms to assure compliance, but the firms themselves would and private and operate on free-market terms, perhaps receiving premium payments for protecting habitats that contain species in the "listed" jeopardy category. The American system responds mainly to economic interests, and today

there is no economic sector with a self-interest in habitat preservation. This legislation would create one.

Requiring developers and others who convert pristine land to purchase two acres of preservation land for each one that they buildup would of course in effect impose a tax on new development, wetlands conversion and so on. But because wild lands sell for far less per acre than lands attractive to development, in most cases the effective tax would likely be a tiny percentage of a developer's land costs. This expense might be added to the capital basis of a development or receive other treatments to offset some of the developer's costs. More importantly, though my two-for-one plan would impose small new costs on development, it would replace the current Endangered Species Act regime that sometimes imposes very large costs through litigation, or throws development plans into very long, costly delays. The two-for-one preservation charge would be run as routine, predictable business expense that would replace the "nasty surprise" from conservation wardens that all developers have come to dread.

Of course the two-for-one plan as I sketch it here is only the genesis of any idea. But I encourage the committee to consider it as a potential progressive alternative to the Endangered Species Act, and one that would be perceived as progressive by voters. I would be happy to discuss the idea and its possible wrinkles with any senators or staff.

POINT TEN: REWARDS NOT PENALTIES

The Endangered Species Act has been a success, but one achieved through mechanisms of disincentives, punishments, and negative government action. It must be replaced with a biodiversity protection statute that operates through rewards, incentives and positive actions. Don't despair: environmental optimism shows that this can be done. A new approach based on privately administered general habitat conservation could be the key.

STATEMENT OF WILLIAM ROBERT IRVIN, DEPUTY VICE PRESIDENT, MARINE WILDLIFE AND FISHERIES CONSERVATION, CENTER FOR MARINE CONSERVATION

Mr. Chairman and members of the subcommittee, I am Robert Irvin, Deputy Vice President for Marine Wildlife and Fisheries Conservation at the Center for Marine Conservation. Thank you for the opportunity to present our views on the Endangered Species Act (ESA). Reauthorization of the ESA is one of the most important environmental issues facing this Congress. The ESA embodies a solemn commitment to ourselves, our children, and the world to pass on to future generations a rich heritage of biological diversity. Unfortunately, the debate over reauthorization of the ESA has become polarized, all too often producing more heat than light. In my testimony today, I will shed some light on the ESA's record of success over the past 22 years and answer some of the commonly heard criticisms of the ESA, set forth some principles against which any ESA reauthorization proposals should be measured and use those principles to assess the only ESA reauthorization bill introduced to date, and offer some constructive suggestions for improving what many of us regard as the crown jewel of our Nation's environmental laws.

THE ESA: A RECORD OF SUCCESS

At a time when serious efforts are underway to roll back progress made in protecting the environment over the past quarter century, we tend to forget that the ESA has long enjoyed strong bipartisan support. The ESA was enacted by overwhelming bipartisan majorities in Congress and signed into law by a Republican President, Richard M. Nixon, in December 1973. It has been reauthorized three times, each time by large bipartisan majorities in Congress and signed into law by a Democratic President, Jimmy Carter, in 1978, and by Republican President Ronald Reagan in 1982 and 1988. Polls continue to show strong support among the American people, regardless of party affiliation, for conserving endangered species. In short, Mister Chairman, maintaining a strong ESA is not a Republican issue or a Democratic issue—it is an American issue.

Maintaining a strong ESA is important to our Nation because, in a very real sense, the ESA protects US. Nearly half of our prescription medicines are derived from plants and other wildlife. You may have heard of the rosy periwinkle, a flowering plant native to Madagascar. This innocuous plant, grown in nurseries but nearly extinct in the wild, is used to produce the drugs Vincristine and Vinblastine, which achieve a 99 percent remission rate in children suffering from leukemia. Closer to home, the bark of the Pacific yew tree, native to the endangered ancient forest

ecosystems of the Pacific Northwest, produces taxol, which has proven to be the most effective treatment for advanced ovarian cancer. The Houston toad, an endangered species, produces alkaloids that may be useful in preventing heart attacks. Salmon, including endangered sockeye salmon, contain Omega-3 fatty acids that can reduce high blood pressure and cholesterol and may be useful in treating arthritis. By protecting species like these and the habitats on which they and other species depend, the ESA preserves our ability to discover the medical miracles that lay hidden in nature.

The ESA's role in protecting biological diversity is also essential to agriculture. The world relies on only about 20 of the approximately 250,000 identified plant species for 90 percent of our food supply. Just 3 species—corn, wheat, and rice—provide half the world's food. This incredibly thin reed on which human survival depends is susceptible to devastating insect infestations and blights. One of the best ways to protect domesticated crops from such disasters is to crossbreed them with wild varieties. In the 1970's, a corn blight in the United States was controlled by crossbreeding domesticated corn with a wild variety from Mexico. In 1992, scientists protected domestic wheat from a harmful leaf rust by crossbreeding it with a wild variety from Brazil. By protecting species like the endangered Texas wild-rice, which could hold the key to controlling some future threat to domesticated rice crops, the ESA protects our ability to combat threats to agriculture and, ultimately, our survival.

Although the ESA has often been caricatured as a law that costs jobs, it is, in fact, a law that protects jobs. In the Pacific Northwest, the ESA's protection of endangered salmon runs is essential to protecting a commercial and recreational fishing industry providing 60,000 jobs and $1 billion in personal income to the region's economy. Even protecting such unglamorous species as freshwater mussels, 43 percent of which are threatened, endangered, or extinct, protects jobs. Export of mussel shells from the United States to Japan for the cultured pearl industry is worth $60 million annually to the American economy, supporting 10,000 jobs.

In nearly every State, we can find examples of the ESA working to protect endangered wildlife and the needs of our Nation:

- In Idaho, when the Hailey airport proposed a realignment of a landing strip, the U.S. Fish and Wildlife Service worked with the Federal Aviation Administration and the Blaine County Airport Commission to modify the design to buffer noise between the airport and a nearby bald eagle roost. Reducing airport noise benefited local residents as well.
- In Nevada, restoration of the endangered cui-cui fish is helping to produce more effective management of water resources in the Truckee River, while protecting a species that is important to Native American culture.
- In North Carolina, development of a habitat conservation plan in the: Sandhills region will benefit endangered red-cockaded woodpeckers while providing landowners with assurances that their cooperation in conserving the species will not result in increased restrictions on the use of their property.
- In New Jersey, with the help of local farmers and even a chemical plant owner, bald eagle nesting has quintupled in recent years.
- In Wyoming, with the cooperation of Federal land management agencies, the State, and local ranchers, black-footed ferrets, once thought to be extinct, have been reintroduced to the wild.
- In Connecticut, State and Federal cooperative efforts are resulting in rebounding populations of bald eagles and piping plovers.
- In Missouri, through cooperative efforts among Federal, State, and local governments, and private sand and gravel dredging operators, procedures have been established that protect the threatened Niangua darter while allowing continued local use of sand and gravel dredged from streams.
- In California, the California gray whale, successfully recovered and removed from the endangered species list, is the star of a $194 million whale watching industry.
- In Virginia, cooperative efforts to conserve freshwater mussels in the upper Tennessee River Valley are producing restored riverbeds and improved water quality, benefiting people as well as bivalves.

Even in *Noah's Choice*, a book that is critical of the ESA, one finds examples of the ESA successfully balancing the needs of endangered species with the needs of people. The book's authors use three conflicts to illustrate their assertion that the ESA tramples on the lives of ordinary Americans: conflict between conservation of the American burying beetle and a highway in Oklahoma; conflict between conservation of the Karner blue butterfly and mosquito control in New York; and the famous conflict between conservation of the snail darter and the Tellico Dam in Tennessee. Yet, in each of these tales, the bottom line is the same: the species is con-

served and the project goes through. In other words, the ESA worked, just as it does in the vast majority of cases. Studies by the World Wildlife Fund and the National Wildlife Federation show that, between 1979 and 1993, of more than 150,000 projects reviewed for conflict with endangered species, 99.9 percent of the projects went forward.

The ESA achieves this balance because Congress and the agencies charged with implementing the law have included a myriad of balancing mechanisms within the law. In virtually every provision of the ESA, social and economic factors are taken into account. The ESA prohibits consideration of non-biological factors only in the decision whether to list a species as threatened or endangered. Economic and other impacts resulting from critical habitat designation must be taken into accounts pursuant to Section 4(b)(1)(B)(2) of the ESA. Special regulations balancing species conservation with other concerns are issued pursuant to Section 4(d) of the ESA. Section 10(i) authorizes more flexible conservation programs for reintroducing non-essential experimental populations of endangered species to their former habitat. Sections 7 and 10 allow the Secretary of the Interior to issue incidental take permits, allowing people to harm or even kill individuals of a listed species in the course of some otherwise lawful activity. Section 7 requires the Secretary to suggest any available reasonable and prudent alternatives to a proposed Federal action whenever the Secretary concludes that the action will jeopardize the continued existence of a listed species or result in the adverse modification or destruction of critical habitat. Regulations set forth at 50 C.F.R. §402.02 implementing Section 7 require that reasonable and prudent alternatives must be "economically and technologically feasible." Even when there are no reasonable and prudent alternatives, Congress has provided an escape valve in Section 7 of the ESA, via the Cabinet-level Endangered Species Committee, which has the power to grant exemptions from the ESA when it determines that the benefits of a project outweigh the benefits of conserving a species. The fact that the Endangered Species Committee has only been called upon three times since its creation to resolve endangered species conflicts is eloquent testimony to the ESA's effectiveness in resolving conflicts short of an "either/or" decision.

To paraphrase Michael Bean, author of *The Evolution of National Wildlife Law*, the amazing thing about the Endangered Species Act is not how many conflicts there have been, but how few. Perhaps even more amazing is that, despite the heavy consideration given to economic and other concerns under the ESA, the ESA has been quite successful in its central mission, saving species from extinction. According to the Department of the Interior in its 1992 Report to Congress on the ESA, 270 species are either stable or improving under the ESA's care. As the National Research Council concluded in its recent study, Science and the Endangered Species Act, "[T]he ESA has successfully prevented some species from becoming extinct. Retention of the ESA would help to prevent species extinction."

PRINCIPLES FOR ASSESSING ESA REAUTHORIZATION LEGISLATION

While few would seriously propose abandoning the ESA completely, some of the so-called "reform" proposals for the ESA would, as a practical matter, have that effect. As this subcommittee proceeds to consider legislation introduced to reauthorize the ESA, or develops its own bill, some fundamental principles should be kept in mind, against which any ESA reauthorization legislation should be measured.

First, we should not profligately spend our children's inheritance. Conserving species benefits future generations as well as ourselves. These benefits may not always be quantifiable in monetary terms. Long-term benefits to future generations must not be sacrificed for short-term economic gains.

Second, an ounce of prevention is worth a pound of cure. Conserving species before they are on the brink of extinction offers more and better opportunities to balance species conservation against economic and other considerations, helping avoid conflicts.

Third, we must put our money where our mouths are. Sustained and adequate funding of historically underfunded endangered species conservation programs is essential. Similarly, greater incentives should be provided to private landowners to encourage endangered species conservation on their properties.

Fourth, we must keep our eyes on the ball. The purpose of the ESA is to conserve threatened and endangered species and the ecosystems upon which they depend. While it is important to make the ESA flexible, effective conservation of species and their habitats must remain the fundamental goal of the law.

WHAT IS WRONG WITH S. 768

At this time, only one bill addressing ESA reauthorization has been introduced in the Senate. Applying the principles outlined above, that bill, S. 768, the Endangered Species Act Reform Act of 1995, is found wanting on every count.

First, S. 768 sacrifices the long-term interests of future generations for short-term economic benefits. The bill abandons the central goal of the ESA, recovering species. In its place, the Interior Secretary may choose to virtually write off protection of listed species based on a determination made without public input that it costs too much to protect a particular species. Moreover, even though the National Research Council recently found that habitat destruction is the most serious threat to endangered species and, therefore, habitat protection is essential to endangered species conservation, S. 768 eliminates crucial protection for habitat, including reversing the U.S. Supreme Court's recent decision in *Babbitt* v. *Sweet Home Chapter of Communities for a Great Oregon* which upheld habitat protection regulations under the ESA.

Second, S. 768 does not head off endangered species "train wrecks," it creates them. The bill delays emergency protection of endangered species until it can be shown that failure to act will place a species on an irreversible course to extinction within 2 years. Furthermore, despite the National Research Council's conclusion that the ESA is scientifically sound, S. 768 imposes new bureaucratic requirements in the name of "good science." For instance, the bill requires peer review on demand, regardless of whether there is any legitimate issue about the science underlying a listing or critical habitat decision. The bill also requires captive breeding to be emphasized as a conservation measure, even though the National Research Council has concluded that captive breeding is no substitute for conserving species in the wild.

Third, S. 768 imposes numerous costly new bureaucratic requirements without providing adequate funding to pay for them. The bill requires extensive socioeconomic analyses, public hearings and comment, even where there is no controversy over conservation of a particular species. While requiring the Fish and Wildlife Service and the National Marine Fisheries Service to pay up to half the cost incurred by non-Federal persons in conserving endangered species, the bill does not authorize sufficient appropriations to pay these costs. Nor does S. 768 provide significant incentives to private landowners to conserve species on their property.

Fourth, S. 768 subordinates the conservation of endangered species and their habitats to easing the conservation responsibilities of Federal agencies and others. The bill undermines one of the central protections for listed species under the ESA, the requirement in Section 7 for interagency consultation on Federal actions which may harm endangered species. S. 768 provides that such consultation will be discretionary with the agency proposing the action. Similarly, the bill suspends the normal operation of the ESA in any area covered by a cooperative management agreement, an agreement subject only to a vague standard that it promote the conservation of the species to which it applies. The bill also exempts potentially millions of acres of habitat from the ESA by exempting 5-acre parcels. In addition, the bill eliminates the rights of citizens to enforce the ESA against non-Federal violators, no matter how egregious the violation.

In sum, Mr. Chairman, S. 768 is the legislative equivalent of a neutron bomb: it will leave the ESA standing, but only as an empty, useless shell. As such, S. 768 is neither a starting point nor an ending point for constructive improvements to the ESA. It is an unmitigated assault on the fundamental purposes and basic protections of the ESA.

IMPROVING THE ESA

Although the ESA has been remarkably successful since President Nixon signed it into law 22 years ago, it can be improved in several ways.

First, the ESA should do a better job of preventing species from becoming endangered in the first place. In making this suggestion, however, I want to emphasize that the ESA was never intended to solve all our wildlife conservation problems. Instead, the ESA was intended as a safety net, protecting species from extinction when other measures have failed. Thus, in addition to making the ESA itself more proactive, it is essential that all our wildlife conservation laws and policies, particularly those governing management of public resources such as Federal lands and marine resources, must be more proactive in conserving wildlife. The ESA can be improved by providing express authority in the law for a preventive program to identify imperiled ecological communities and ecosystems, key species within those communities, and measures which can be taken by Federal and non-Federal parties to conserve those species, communities, and ecosystems.

Second, the ESA should be improved to provide more effective recovery measures for threatened and endangered species. The best way to eliminate conflicts between development and species conservation is to recover species so that they can be removed from the endangered species list. To accomplish this, recovery planning should occur within 12 months of listing. During the planning phase, recovery targets based on the best available science should be established. These targets should provide objective benchmarks for assessing progress toward recovery and delisting. Recovery targets should be developed by the Secretary of the Interior with input from the public, scientists, States, and local governments.

Once recovery targets have been established, the Secretary should assemble a recovery team, consisting of representatives of Federal agencies, State, local, and tribal governments, and scientists to prepare a recovery plan within 18 months of listing. Plans should be developed with sufficient opportunities for public review and comment, including review and comment by the regulated community and other interested citizens. Recovery plans should emphasize the role of Federal agencies and public lands in achieving recovery. Plans should include enforceable deadlines for recovery activities. Recovery plans should give priority to actions that will provide the greatest recovery benefits and identify ways to reduce costs of recovery without sacrificing species conservation. Recovery plans should provide guidance to private landowners regarding what activities may result in an illegal taking of a listed species. Habitat conservation plans developed pursuant to Section 10 of the ESA should be required to be consistent with recovery plans. When possible, recovery plans should be developed for multiple species dependent on a common ecosystem. Adequate funding for recovery planning and implementation is essential.

Third, the ESA should provide greater incentives for private landowners to conserve species on their property. A revolving loan fund to assist State and local governments in the development and implementation of habitat conservation plans should be established. Tax incentives, including deferral of estate taxes on property subject to a cooperative agreement for the conservation of listed or candidate species, should be created. Existing land stewardship programs, such as the Conservation Reserve Program and the Forest Stewardship Program, should be amended to provide additional benefits for activities that conserve listed and candidate species while also serving the original goals of the programs. New incentive programs, authorizing the Secretary of the Interior to pay private landowners for undertaking additional endangered species conservation activities beyond those required by existing law, should be authorized. Regulatory incentives, such as the "safe harbor" habitat conservation plan in the Sandhills region of North Carolina discussed above, which provide landowners with assurances that their conservation obligations will not increase as a result of their voluntary conservation activities, should be considered.

Fourth, steps should be taken to reduce the frustration citizens sometimes feel in dealing with Federal agencies charged with ESA implementation. Each field office of the U.S. Fish and Wildlife Service should have a designated Property Owner and Community Assistance officer whose job is to provide timely advice and assistance to landowners in complying with the ESA and to answer questions and respond to complaints and suggestions from landowners. These officers will also be responsible for providing landowners with information about the alternative dispute resolution mechanisms already available in the U.S. Claims Court to those claiming that the Federal government has taken their property without compensation.

In conclusion, Mr. Chairman, the ESA is our Nation's promise to leave our children and grandchildren a world as rich in plants and wild animals as the one we enjoy.

That is a promise that must not be broken. I look forward to working with you and members of the committee to ensure that it is kept.

Thank you for allowing me to testify today. I will be happy to answer any questions that you or other members of the subcommittee may have.

STATEMENT OF DAVID F. MAZOUR, ON BEHALF OF NATIONAL ENDANGERED SPECIES ACT REFORM COALITION

Mr. Chairman and members of the subcommittee, my name is David F. Mazour. I am Assistant General Manager of the Central Nebraska Public Power and Irrigation District in Holdrege, NE. Today, I appear before you on behalf of the more than 200 member organizations, representing millions of individuals across the United States, which make up the National Endangered Species Act Reform Coalition.

In late 1991, representatives of rural counties in Arizona and New Mexico, the American Farm Bureau Federation and several rural electric power cooperatives

and water districts met to organize a coalition to participate in the congressional debate regarding reauthorization of the Endangered Species Act. Our coalition's sole purpose was then—and is today—to urge Congress to remake the Endangered Species Act (ESA) into a law that works better to conserve species while taking into consideration the needs of people and the other responsibilities of Federal, State and local government.

Our coalition represents a diverse group of members nationwide which ranges from rural irrigators in eastern Washington and throughout the West, to municipalities such as Williamson County, Texas and Apache County, Arizona, to trade and member organizations such as the American Public Power Association, the National Rural Electric Cooperative Association and the National Association of State Departments of Agriculture, to individuals and businesses that are directly affected by the ESA.

While some businesses have recently joined our efforts, we are not "Big Business." We are your rural constituents and communities, saying: "Please, listen to us. The ESA needs reform. The public is losing confidence in the way the Act is being implemented. This important law is destroying good will toward species conservation around the country. It must be remodeled in a way that promotes more efficient species conservation and becomes more people-friendly, or it will destroy itself."

THE NEED FOR ESA REFORM

What has caused the need for change to the ESA? While the ESA was a well-intentioned piece of environmental legislation when passed in 1973, it had some serious shortcomings that have become more apparent over time. Fundamental problems of checks and balances and the elevated status of this law above others have created an atmosphere conducive to abuse. The concentration of power in the hands of wildlife biologists who often lack the technical ability to interpret data or have their own agendas has become commonplace.

Former agency biologist W. Dean Carrier discussed the power created by the laws and the courts in an essay presented at the Wildlife Society's (Western Section) Annual Conference on Feb. 2–5, 1995, in Rohnert Park, CA. In the essay, entitled "The Killing of the Goose," Carrier wrote:

> Suddenly, we had the power. But with power comes responsibility. We gleefully latched on to the power, but I'm not sure we lived up to the responsibility. We began to misuse our newly acquired authority in a manner no less arrogant than those who used it against us a mere decade before. We focus more on the punishment of development—any development—than on the analyzing of the real effects to biological resources or the recovery of listed species.

Later in his essay, Carrier discusses the use of the Act to extort huge sums of money from landowners, corporations and public and private utilities. I have witnessed these abuses first-hand. In a negotiating session in the fall of 1989 regarding the renewal of a license for Central's hydroelectric plants, a lawyer from a national environmental organization cavalierly responded to a question about a $75 million mitigation package they were demanding by saying, no, he didn't want to bankrupt the District, just bring it to the brink of bankruptcy. Two months of intensive negotiations ended that day.

To pass the test of time, a reformed Act must correct the abuses currently in place without recreating the lack of environmental consideration prevalent in the 1960's and early 1970's. To gut the Act is not an acceptable solution, nor a long-term fix. The pendulum must stop in the middle.

A paradigm shift for the wildlife biologists is one of the most significant changes that is needed. A reformed Act must prompt the wildlife biologists to ask how they can work better with people on the land and the users of the water to better conserve endangered species. They must seek the most cost-effective methods for protecting species. Personal agendas must not be allowed to enter into the process. The arrogance that drove attempts to bring developers to their knees must be left behind.

A sharing of power will be required and can be incorporated through various legislative changes. Improved science through peer review, greater sharing of responsibilities through cooperative agreements with State and local governments and greater public involvement in the implementation of a conservation objective are good examples of ways to bring about more reasonable ESA implementation.

ESA reform should help create a new attitude for those living on the land and others who are subject to the Act's regulations. Reform of the Act will be successful if it encourages local landowners and communities to work with agencies responsible

for regulations in the protection of species. The American public believes in the need for effective environmental protection. The people on the land and in the communities want clean water and abundant wildlife. A properly reformed Act will bring them back into the process of cooperatively working toward enhancement of the environment which we all share.

An unbalanced ESA does not promote or foster those kinds of partnerships. In fact, the Act in its present form produces the opposite results. It encourages litigation rather than cooperation and places the power with the wildlife biologists and the courts, leaving little recourse to those that must live with the results.

I am not a scientist; however, in my capacity with the Central Nebraska Public Power and Irrigation District, I have dealt extensively with application of the Endangered Species Act. For the past 12 years, the Central District has been seeking a new license from the Federal Energy Regulatory Commission to operate its hydroelectric facilities associated with Kingsley Dam and Lake McConaughy. This relicensing proceeding has primarily concerned re-regulation of the project's hydro units to accommodate a number of endangered species along the Platte River—including whooping cranes, interior least terns, piping plovers, burying beetles and bald eagles.

Often the recommendations to fulfill the ESA obligations have little to do with whether the species will be helped ultimately and more to do with a particular biologist's view of what the river and its habitat should look like. One example of this was a recommendation that eight nesting islands be constructed of sand within the "Big Bend" reach of the Platte River to simulate the braided sandbars which have been presumed to be the preferred nesting sites for interior least terns and piping plovers.

This recommendation, however, failed to recognize the scientific studies and practical experience of the Central District and its partner, the Nebraska Public Power District, which show that enhancement and protection of sandpit and off-river nesting sites are a more effective means of helping increase the species' population. Previous attempts to construct island nesting sites on the Platte River have been a dismal failure. In fact, in 1994 only one fledgling was produced at the previously constructed nesting islands compared with 125 fledglings at non-river sites managed by the Districts. A majority of terns and plovers along the Platte River use non-river sites to nest and that is where the gains in their population have occurred. So, at great cost, the habitat desired by the biologists was created, but it did not do much for the birds. This has been repeatedly pointed out . . . to no avail.

We must acknowledge that our scientific information is not perfect at any given time. To effectively protect threatened and endangered species—a goal each of us can agree upon—we must ensure that species conservation judgments are based on the best available information, while maintaining enough flexibility to adapt to changing circumstances and scientific information.

Currently, Colorado, Nebraska and Wyoming and the Interior Department are engaged in negotiations to reach a basin-wide agreement on habitat enhancement to address endangered species concerns in the Platte River Basin. Each of the States have substantial existing development subject to Section 7 review. Colorado alone has as many as 200 permits subject to consultation.

Central's project is a key component and Central is closely involved in negotiations to produce a basin plan. Secretary Babbitt is to be commended for his initiative in seeking a basin solution and significant opportunities exist for the development of a comprehensive habitat plan rather than a piecemeal project-by-project solution. Unfortunately, the existing ESA may actually hinder the search for a comprehensive solution, rather than assist it.

Nebraska and Wyoming are calling for provisions that make the States equal partners; however, the current Act does not allow the States to have the status they deserve. The U.S. Fish and Wildlife Service insists on "final" control and asserts that the ESA precludes the delegation of decisionmaking authority to the States. Although a comprehensive solution with greater State and local community involvement will most certainly serve the species better and more efficiently, achievement of such a solution is hindered by the Act as it currently exists.

There are examples of ESA problems all across the country. In the Pacific Northwest, the Bonneville Power Administration (BPA) and National Marine Fisheries Service (NMFS) have estimated that the current conservation measures for four listed runs of salmon on the Columbia and Snake River systems are costing at least $350 million per year. These costs are the result of both active conservation measures and lost revenues from power generation. Implementing the recently announced draft recovery plan and biological opinion is expected to cost an additional $160 million per year. Already, BPA has spent over $2 billion on salmon recovery measures. A significant portion of these costs are borne by the rural communities

which receive electricity from BPA. These overwhelming costs threaten to collapse the Bonneville Power Administration and cast a looming shadow of economic distress on the rural communities of the Northwest that are already devastated by the loss of timber jobs due to limitations for the Northern Spotted Owl.

These cases are examples of ESA actions that all too often are marked by litigation, lack of certainty for communities affected by ESA-imposed restrictions on activities and incomplete science for listing the species and for determining proper conservation measures. Our environment is not static. We must acknowledge that fact by leaving behind the current command-and-control application of the Endangered Species Act and embracing a more adaptive management approach to effective species conservation.

Secretary of the Interior Bruce Babbitt has acknowledged many of the problems with the current application of the Act. Last year, the Department of the Interior and the Department of Commerce issued a number of joint policy guidelines designed to improve the functioning of the Endangered Species Act. In March of this year, Secretary Babbitt announced a series of "Guideposts for Reform" which he described as "guideposts for reauthorization should this Congress decide to move forward on endangered species issues."

Each of the Administration's guideposts for reform is incorporated into ESA reform legislation that was introduced in May by Senators Gorton, Johnston and others. We urge the Senate to codify into law each of the administration's proposals as well as the other important reforms contained in S. 768, the Endangered Species Act Reform Amendments of 1995.

CALL FOR CONGRESSIONAL ACTION

We urge this subcommittee to move forward with legislation which maintains the original purpose of the Endangered Species Act—to protect species most in need—while restoring sensibility to the law and providing incentives for species conservation. Specifically, some of the reforms we urge Congress to adopt include:

1. Bring the Public into the ESA Process and Increase the Role of State and Local Governments

The public ultimately holds the keys to a better working ESA. In areas where there has been a heavy regulatory approach to ESA decisionmaking—with decisions on recovery plans with little or no input from the public—support for the ESA fades rapidly upon imposition of the conservation measures. We urge you to move the law to local levels by increasing the use of cooperative agreements between the Federal Government and State and local governments, providing hearings on draft recovery plans and critical habitat designations, and opening the consultation to affected parties.

Further, we believe that the role of States in ESA decisionmaking should be significantly increased. States should have the opportunity to have primary roles in ESA actions subject to oversight. The States are developing promising ideas in this area. In particular, the Western Governors' Association is presently working on legislative proposals on State involvement in the ESA.

We urge you to seek out and incorporate the recommendations of the States in the congressional reform effort.

2. Place the ESA on Equal Footing with Other Federal Laws

How many Americans would agree with the idea that one law—the Endangered Species Act—should supersede every other Federal law and treaty? Based on the snail darter decision in *TVA* v. *Hill,* many believe that all other obligations of the government must give way to one single-purpose law, the Endangered Species Act. It is not rational to demand this priority of one law over all others. Under these other laws, we build homes and schools, provide water and power to our communities and provide jobs to our people.

Certainly, conserving species is an important goal for our country and the Federal Government must play a role in that process, but that role cannot be undertaken at the expense of all other governmental functions. The Federal Government's obligations under the ESA should be considered and acted upon, but only on equal footing with other laws and obligations which are just as important to our nation's health and security.

3. Provide Incentives for People to Actively Help Conserve Species

The ESA presently operates largely based on negatives. Don't modify habitat. Don't take an action that may affect a listed species. The law does not encourage individuals to find ways to help species. Instead, the ESA provides disincentives in

the form of endless red-tape and permits that stalemate independent initiatives to assist species.

The simple fact is that a species does not recover solely because you stop people from doing things. Species also can recover because positive steps are taken toward increasing species populations.

We need to replace the current ESA's disincentives with incentives to conserve species. Many in the environmental community agree on this point. One way is to provide active, concrete incentives for the millions of Americans beyond the regulatory reach of the ESA to preserve species and habitat. These incentives may include creating more habitat or establishing breeding programs to strengthen populations. We recognize the fiscal constraints facing Congress, but we believe the current program is draining revenues and costing jobs. It makes sense to increase the use of incentives which encourage the development of new, innovative ways to conserve species yet allow job producing activities to move forward.

4. Reinstate the Distinction Between Endangered Species and Threatened Species

The ESA, statutorily, distinguishes between Federal efforts to protect and conserve endangered species and those intended to assist threatened species. This distinction, while existing within the statute, has been eliminated by administrative regulations. This distinction serves to prioritize Federal efforts for listed species. We need to return ESA implementation to the original intentions of Congress and reinstitute this distinction.

5. Provide Regulatory Certainty

For many, the best incentive to conserve species is regulatory certainty. Right now, many affected communities which want to work within the law are stymied by a decisionmaking process in which biologists have unfettered ability to reopen recovery plans and biological opinions. By providing real regulatory certainty to permits and new forms of cooperative agreements, Congress would lay the groundwork for more cooperation with affected communities. Nobody wants to come to the table when they know that as soon as they leave, all bets are off as to what will be required of them. If Congress enacts reforms in this area, many communities would move forward with active conservation plans which now fail to get off the drawing boards because the government will not commit certainty to its side of the bargain.

6. Streamline and Strengthen the Federal ESA Decision Making Process

The ESA will collapse if the current system which is adversely affecting the livelihood of thousands of people is not fixed. A system which places the key decisions in the hands of a few biologists, ultimately, will fail. We support retaining a listing process based solely on good science. We urge Congress to strengthen the listing process by increasing scientific information requirements and considerations and by providing a fundamental basis for consideration of the impacts of a proposed activity on the species.

The decision of what to do about species conservation should be based on a strengthened scientific process, the inclusion of economic considerations, open to the public and made as close to the local level as possible. We should bring endangered species decisions out from the court rooms and negotiating rooms to the public.

At its most basic level, the ESA must be infused with a healthy dose of common sense. There are now more than 950 species listed as endangered or threatened under the ESA. On average, more than 100 species are being listed each year and an additional 4,000 species have been identified as candidate species. Because of the pragmatic realities of nature as well as our own nation's resources, the ESA needs to allow for species conservation goals other than full recovery. It is legitimate to save a species by maintaining a species population. It is irresponsible to say that all species can be "recovered."

Additionally, the Section 7 consultation process must be streamlined. Consultations are taking too long, are being administered in an arbitrary manner and are being tied up in court by endless challenges. We urge you to reform that process by statutorily setting binding deadlines, focusing consultations on those agency actions which truly jeopardize listed species and ensuring that the alternatives proposed under consultation reflect the biologic and economic realities of real-world application.

7. Share the Burdens of Species Conservation

We are continually told that it is in the national interest to conserve endangered species. Yet the burdens for that conservation fall almost solely on the geographic areas which historically have had the least impact on the species. Where a national interest is being carried out, its burden should fall on this nation as a whole, not solely on the landowner. We urge you to consider instituting a cost-share program

for conservation measures which would allow a better balance between economic, environmental and governmental interests.

8. Recognize the Rights of Private Property Owners, Including Holders of Water Rights

In many cases, small landowners, farmers and irrigators have little, if any, impact on the species. Yet, they are brought into enforcement of the Act on the same terms as large landowners and industries. The Act should be amended to recognize the low impact of small landowners.

We urge Congress to reduce direct regulation of private property, increase incentives for such landowners and live up to the responsibility of compensating property owners for lost use and value of property.

9. Recognize the Species Status as a Whole.

The public is continually misled by the practice of calling any animal, fish or plant species listed under the Act an endangered species. This practice blurs the biological distinction between species, subspecies or distinct population segments. To suggest that a population segment or subspecies should be given the same priority and treatment as a whole species is improper on a policy level and biologically questionable.

This misleading practice is especially true in the treatment of distinct population segments. It may be fair to look at the health of a whole species by looking, in part, at the fringe areas of the species, but it is irrational to treat an isolated population segment under the ESA as if it were a whole species. Yet, that is what the Act does now. The ESA protects the single, isolated population of a species, no matter how vibrant that species may be in other portions of this Nation, at the same level that it would protect a whole species that is threatened or endangered. As one newspaper, the Sacramento Bee, recently pointed out, under the logic used by the Fish and Wildlife Service, people living in Seattle and Austin would qualify as different subspecies.

By their own biological characteristics and definitions, subspecies and distinct population segments represent a much narrower range of species within the environment. The ESA needs to reflect that basic truth.

CONCLUSION

The National Endangered Species Act Reform Coalition has worked on ideas for ESA reform for more than 3 years. We believe that this Congress has an opportunity to reauthorize and improve the ESA and bring this law—which has direct impacts on so many communities—closer to the people. If the politics of the past are allowed to continue to stalemate progress on this important matter, the Endangered Species Act is doomed and with it are many of our smaller communities and the species which could be saved if the law received needed improvements.

National Endangered Species Act Reform Coalition

MEMBERSHIP

July 10, 1995

Alabama Electric Cooperative, Inc.
Andalusia, Alabama

American Electric Power Service Corporation
Columbus, Ohio

American Farm Bureau Federation
Washington, D.C.

American Petroleum Institute
Washington, D.C.

American Public Power Association
Washington, D.C.

Animas-La Plata Water Conservancy District
La Plata, New Mexico

Anza Electric Cooperative, Inc.
Anza, California

Apache County
St. Johns, Arizona

Arizona Electric Power Cooperative, Inc.
Benson, Arizona

Arizona Municipal Power Users' Association
Phoenix, Arizona

Arizona Power Pooling Association
Benson, Arizona

Art Holmes, Inc.
San Antonio, Texas

Bar Eight Cattle Co., Inc.
Lyman, Nebraska

Barrick Goldstrike Mines, Inc.
Elko, Nevada

Basic American Foods
San Francisco, California

Basin Electric Power Cooperative
Bismarck, North Dakota

Beadle Electric Cooperative, Inc.
Huron, South Dakota

Biggs Ranch
Madera, California

Bob Ferguson - Independent
El Toro, California

Boise Cascade Corporation
Boise, Idaho

Boise-Kuna Irrigation
Kuna, Idaho

Bon Homme Yankton
Electric Association, Inc.
Tabor, South Dakota

Bridger Valley Electric Association
Mountain View, Wyoming

Broadview Water District
Firebaugh, California

C.T. Kaljian Ranches
Los Banos, California

California Association of
Winegrape Growers
Sacramento, California

California Farm Bureau Federation
Sacramento, California

California Grain and Feed Association
Sacramento, California

California Rice Industry Association
Sacramento, California

Central Arizona
Irrigation and Drainage District
Eloy, Arizona

Central Arizona Water Conservation District
Phoenix, Arizona

Central Montana Electric Power Cooperative, Inc.
Billings, Montana

Central Nebraska Public Power and Irrigation District
Holdrege, Nebraska

Chelan PUD No. 1
Wenatachee, Washington

Chevron, U.S.A. Inc.
Concord, California

City of Farmington
Farmington, New Mexico

Clay-Union Electric Cooperative, Inc.
Watertown, South Dakota

Clyde Davis Real Estate
Liberty Hill, Texas

Coalition of Counties for Stable Economic Growth
Glenwood, New Mexico

Coalition of Oil & Gas Industry Associations
Denver, Colorado

Coalition to Protect & Preserve Private Property Rights
Bakersfield, California

Codington-Clark Electric Cooperative, Inc.
Watertown, South Dakota

Coeur d'Alene Mines Corporation
Coeur d'Alene, Idaho

Colorado River Energy Distributors Association
Salt Lake City, Utah

Colorado River Municipal Water District
Big Spring, Texas

Colorado River Water Conservation District
Glenwood Springs, Colorado

Colorado Rural Electric Association
Denver, Colorado

Columbia Rural Electric Association
Dayton, Washington

Columbia Snake River Irrigators Association
Prosser, Washington

County of Catron
Reserve, New Mexico

County of Eddy
Carlsbad, New Mexico

County of Elko
Elko, Nevada

County of Sierra
Truth or Consequences, New Mexico

Deseret Generation and Transmission
Sandy, Utah

Direct Services Industries
Portland, Oregon

Dixie Escalante Rural Electric Association
Beryl, Utah

Douglas County PUD No. 1
East Wenatachee, Washington

Douglas Electric Cooperative, Inc.
Armour, South Dakota

Duck River Agency
Shelbyville, Tennessee

D. M. Camp & Sons
Bakersfield, California

Dugan Production Corporation
Farmington, New Mexico

East River Electric Power Cooperative
Madison, South Dakota

Empire Electric Association, Inc.
Cortez, Colorado

Exeter Irrigation District
Exeter, California

Farm Credit Bank of Texas
Austin, Texas

FEM Electric Association, Inc.
Ipswich, South Dakota

Ferreira Farms
Los Banos, California

Flathead Electric Cooperative
Kalispell, Montana

FMC Corporation
Washington, D.C.

Fordel, Inc.
Mendota, California

Garkane Power Association, Inc.
Richfield, Utah

Glenn-Colusa Irrigation District
Willows, California

Golden Spread Electric Cooperative, Inc.
Amarillo, Texas

Graham County Electric Cooperative, Inc.
Pima, Arizona

Greater Westside California
Women for Agriculture
Dos Palos, California

HD Electric Cooperative, Inc.
Clear Lake, South Dakota

Helix Water District
La Mesa, California

Holy Cross Electric Association, Inc.
Glenwood Springs, Colorado

Hot Springs Rural Electric Cooperative
Thermopolis, Wyoming

Idaho County Light and Power
Grangeville, Idaho

Idaho Mining Association
Boise, Idaho

Idaho Power Company
Boise, Idaho

Intercounty Electric Association, Inc.
Mitchell, South Dakota

Intermountain Consumer Power Association
Sandy, Utah

International Council of Shopping Centers
Alexandria, Virginia

International Water District
Clovis, California

Interstate Natural Gas
Association of America
Washington, D.C.

Kaiser Aluminum and
Chemical Corporation
Oakland, California

Kaufman Board
Modesto, California

Kern County Water Agency
Bakersfield, California

Kingsbury Electric Cooperative, Inc.
De Smet, South Dakota

Lake Region Electric
Webster, South Dakota

Lincoln-Union Electric Company
Alcester, South Dakota

Lyon-Lincoln Electric Cooperative, Inc.
Tyler, Minnesota

Mancos Water Conservancy District
Mancos, Colorado

Melody Hereford Ranch
Jackson Hole, Wyoming

Melvin Morris -- Developer
Hawthorne, California

Merced Irrigation District
Merced, California

Merrill Real Estate
Madera, California

Mid Cal Auto Truck Plaza, Inc.
Santa Nella, California

Mid-West Electric Consumer Association
Denver, Colorado

Morgan County Rural Electric Association
Ft. Mogran, Colorado

Morton Buildings, Inc.
Morton, Illinois

Mt. Wheeler Power, Inc.
Ely, Nevada

National Association of Home Builders
Washington, D.C.

National Association of Industrial and Office Properties
Herndon, Virginia

National Association of Real Estate Investment Trusts, Inc.
Washington, D.C.

National Association of Realtors
Washington, D.C.

National Association of State Departments of Agriculture
Washington, D.C.

National Rural Electric Cooperative Association
Washington, D.C.

National Stone Association
Washington, D.C.

National Water Resources Association
Arlington, Virginia

Natural Resources United, Inc.
Mobile, Alabama

Nebraska Electric G & T Cooperative, Inc.
Columbus, Nebraska

Nebraska Farm Bureau Federation
Lincoln, Nebraska

Newmont Mining Corporation
Denver, Colorado

Niobrara Electric Association, Inc.
Lusk, Wyoming

North Fork Water Conservancy District
Hotchkiss, Colorado

Northern Electric Cooperative, Inc.
Bath, South Dakota

N.W. Electric Power Cooperative
Cameron, Missouri

Oahe Electric Cooperative, Inc.
Blunt, South Dakota

Oglethorpe Power Corporation
Tucker, Georgia

Olivenhain Municipal Water District
Encinitas, California

Oregon PUD Association
Salem, Oregon

Oski Construction
Modesto, California

Pacific Northwest Generating Cooperative
Portland, Oregon

Palo Verde Irrigation District
Blythe, California

Panoche Water District
Firebaugh, California

Phelps Dodge
Washington, D.C.

Pixley Irrigation District
Pixley, California

Placer County Water Agency
Foresthill, California

Plains Electric Generation and Transmission Cooperative, Inc.
Albuquerque, New Mexico

Puget Sound Power and Light
Bellevue, Washington

Rainbow Municipal Water District
Fallbrook, California

Rancho California Water District
Temecula, California

Raspo Farms
Banta, California

Ree Electric Cooperative, Inc.
Miller, South Dakota

Renville-Sibley Cooperative Power Association
Danube, Minnesota

Ringling Brothers and Barnum & Bailey
Vienna, Virginia

Riverside County Farm Bureau
Moreno Valley, California

Rushmore Electric Power Cooperative, Inc.
Rapid City, South Dakota

San Luis Valley
Rural Electric Cooperative, Inc.
Monte Vista, California

San Isabel Rural Electric Cooperative
Pueblo, Colorado

San Joaquin County Citizens Land Alliance
Tracy, California

San Joaquin River Exchange
Contractors Water Authority
Los Banos, California

San Luis Water District
Los Banos, California

Santa Nella Development Association
Modesto, California

Shafter-Wasco Irrigation District
Wasco, California

Sangre De Cristo Electric Association, Inc.
Buena Vista, Colorado

S.H. Smith Farms, Inc.
Turlock, California

Sioux Valley Electric
Colman, South Dakota

South Central Nebraska Bankers Association
Holdrege, Nebraska

Southern San Joaquin
Municipal Utility District
Delano, California

Southwest Water Conservation
District of Colorado
Durango, Colorado

Southwestern Power Resources Association
Edmond, Oklahoma

Spink Electric Cooperative
Redfield, South Dakota

St. John Farms
Orland, California

Sulphur Springs Valley
Electric Cooperative, Inc.
Willcox, Arizona

Texas Aggregates and Concrete Association
Austin, Texas

Texas Farm Bureau
Waco, Texas

The Montana Power Company
Butte, Montana

Toll Brothers, Inc.
Huntingdon Valley, Pennsylvania

Traverse Electric Cooperative, Inc.
Wheaton, Minnesota

Trico Electric Cooperative, Inc.
Tucson, Arizona

Tri-County Electric Association, Inc.
Plankinton, South Dakota

Tri-State Generation and
Transmission Association, Inc.
Denver, Colorado

Tulelake Irrigation District
Tulelake, California

Turlock Irrigation District
Turlock, California

Union County Electric Cooperative, Inc.
Elk Point, South Dakota

Union Pacific
Fort Worth, Texas

Upper Yampa Water Conservancy District
Steamboat Springs, Colorado

Valley Center Municipal Water District
Valley Center, California

Vigilante Electric Cooperative, Inc.
Dillon, Montana

Wabash Valley Power Association, Inc.
Indianapolis, Indiana

Washington County
Water Conservancy District
St. George, Utah

Washington Public Utility
Districts Association
Seattle, Washington

Washington State
Water Resources Association
Yakima, Washington

Washington Water Power
Spokane, Washington

Weber City Canal
River Water Users Association
Ogden, Utah

Weber River Water Users Association
Sunset, Utah

Wells Rural Electric Company
Wells, Nevada

Wellton-Mohawk
Irrigation & Drainage District
Wellton, Arizona

Western Montana Electric Generation and
Transmission Cooperative, Inc.
Missoula, Montana

West Star-5, Inc.
Firebaugh, California

Westlands Water District
Fresno, California

Westside 5-D Farms, Inc.
San Juaquin, California

Wheat Belt Public Power District
Sidney, Nebraska

Whetstone Valley Electric Cooperative, Inc.
Milbank, South Dakota

Wilder Construction Company
Bellingham, Washington

Wilder Irrigation District
Caldwell, Idaho

Williamson County
Georgetown, Texas

Wyoming Water
Development Association, Inc.
Cheyenne, Wyoming

Wyrulec Company
Lingle, Wyoming

Y-W Electric Association, Inc.
Akron, Colorado

In addition, the National Endangered Species Act Reform Coalition has received contributions from numerous individuals who support the goals and objectives of the Coalition.

Saving America's Wildlife

Renewing the Endangered Species Act

JULY 1995

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ABOUT DEFENDERS

Defenders of Wildlife is a nonprofit organization of more than 100,000 members nationwide. Defenders is noted for more than two decades of leadership in passage and enforcement of the Endangered Species Act of 1973 (ESA). The organization has been a successful plaintiff for endangered species, winning victories to enforce the ESA and expedite listings of species and adoption of recovery plans. Defenders is a founding member and steering committee member of the Endangered Species Coalition. We are dedicated to saving species from extinction and protecting biological diversity for future generations.

COVER PHOTO BARBARA VON HOFFMANN/TOM STACK AND ASSOCIATES

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Foreword

Albert Einstein once said, "When we survey our lives and endeavors we soon observe that almost the whole of our actions and desires are bound up with the existence of other human beings." Today, five years from the next millennium, the time has come to expand Einstein's point to include all living things. For the truth is that humans are inextricably linked to the natural world.

In a sense, the Endangered Species Act is our country's last defense against the destruction of the living natural world. The Act's primary purpose is to conserve the ecosystems upon which threatened and endangered species depend. This means we must protect the habitat that provides food and livelihood for all species of life, including our own. Yet, tragically, the very notion of wildlife protection is under unprecedented political attack in Congress.

It has not always been this way. Wildlife and natural resource conservation possess a century-old bipartisan history, initiated by President Theodore Roosevelt. On signing the Endangered Species Act in 1973, President Nixon stated, "Nothing is more priceless and worthy of preservation than the rich array of animal life with which our country has been blessed. It is a many-faceted treasure, of value to scholars, scientists, and nature lovers alike, and it forms a vital part of the heritage we all share as Americans." In subsequent reauthorizations, signed by Presidents Jimmy Carter and Ronald Reagan, the Act continued to enjoy strong bipartisan support. The Act has even been responsible for the recovery of our nation's symbol, the bald eagle.

This is Defenders of Wildlife's fourth report on the Endangered Species Act. It is designed to operate as a comprehensive guide for policy makers tasked with reauthorization of the Act during the 104th Congress. Our recommendations are based on several decades of leadership on the Endangered Species Act including supporting the Act and implementation of its safeguards in the Congress, in the courts and in the field. As reflected in our three previous reports, certain themes are as pressing today as they were more than 20 years ago. For example, recovery of species is still

too elusive, partly because the Act does not possess binding recovery standards. And funding for endangered species protection remains dangerously sparse. Astonishingly, each American currently spends only 50 cents per year to save wildlife under the Endangered Species Act.

A relatively new conservation theme discussed in this report is prevention of endangerment. As with humans, the most economically and biologically sound way to assure wildlife species health is to prevent activities that imperil species in the first place. The science of conservation biology is making strides toward a better understanding of natural laws. Novel free-market economic models are now being used to help resolve development conflicts. These recent advances should be reflected in reauthorizing legislation so that the Act can be more effective for humans and wildlife alike.

One of the most compelling justifications for the Endangered Species Act is to protect human welfare itself. Wildlife species possess benefits of enormous although often unquantifiable value. They provide food, medicine and shelter. Interacting in their natural ecosystems, they manufacture the air we breathe, cleanse our water, fertilize the soil, cycle nutrients, decompose waste and control floods and insect pests. And they provide important psychological benefits ranging from relief from the stresses of modern urban society to satisfaction from expressing our ethical duty to safeguard creation.

As Congress prepares to reauthorize the Endangered Species Act, we must find better ways to encourage and reward good human stewardship of nature's gifts. Among our most compelling moral obligations must be protecting the natural estate so that we can pass it on to our descendants in no worse condition than we received it. Clearly we are now failing in that obligation. And we cannot hope to do better without a strong Endangered Species Act and companion legislation that will conserve habitats, ecosystems and the biodiversity on which all life ultimately depends.

Rodger Schlickeisen, President
James K. Wyerman, Vice President for Program

Executive Summary

Since its enactment little more than two decades ago, the Endangered Species Act has yielded a long list of success stories. The proposed downlisting of America's national symbol, the bald eagle, and the recovery of populations of species ranging from gray whales and sea otters to peregrine falcons and brown pelicans testify to the Act's effectiveness. Recent efforts by the Department of the Interior and the Department of Commerce to make the Act's administration more flexible and more responsive to landowner concerns also have achieved marked success.

Despite these positive developments, the Endangered Species Act faces unprecedented political assault. States-rights proponents, business factions, private-property organizations and lobbyists from natural-resource-user groups are bombarding lawmakers and the media with horror stories describing how the rigidity of the Act is robbing people of their right to develop private property. Though many of these anecdotes have achieved mythic proportions, little evidence exists to support them. On the contrary, the growing flexibility of the Act shows that it can be implemented effectively and efficiently.

RECOMMENDATIONS

Defenders of Wildlife recommends that Congress:

• Improve the role of science in every facet of the Act.

The Act was born of science, and yet science has all but disappeared from the debate over the future of the Endangered Species Act. Recommendations include convening a *National Commission on Species Extinction*, initiating a scientifically sound system for ranking the urgency of species-protection goals, integrating scientific peer review more thoroughly into the listing process and encouraging the work of the National Biological Service.

• Expand measures that prevent the need for listings.

Adopting strategies that prevent species declines is the most ecologically efficient and economical means for protecting wild plants and animals and conserving biodiversity. Therefore, Defenders recommends encouraging better management plans for declining species and implementing more preventive management strategies on public lands.

Four ESA Realities

- The Endangered Species Act benefits both people and wildlife.
- The ESA is under unprecedented political assault.
- Problems with the ESA are vastly overstated.
- The ESA can be simultaneously improved and strengthened.

• Provide incentives for private landowners who practice wildlife stewardship.

Because private lands are critical to biodiversity conservation, the report calls for programs and administrative policies that encourage responsible private-lands stewardship. These recommendations include designing incentives that encourage voluntary stewardship, streamlining the habitat conservation planning process, changing the criteria for Conservation Reserve Program (CRP) funding under the farm bill and altering the tax code to reward private landowners for responsible stewardship actions.

• Expand the role of state governments.

State governments and agencies have the knowledge and relationships needed to achieve local conservation successes. To facilitate these successes, more responsibility for candidate-species management and recovery planning and more take-permitting authority should be transferred to the states. Regional ecosystem management planning and opportunities for federal-state partnerships also should be fostered.

• Develop secure, long-term funding.

Effective conservation cannot occur without adequate funding. To pay for these vital efforts, the report recommends reallocating funds from fiscally obsolete programs, exploiting underutilized programs and creating user-fee funding sources.

Organization of the Report

This report was prepared by Defenders of Wildlife's lawyers, conservation biologists and other environmental professionals dedicated to finding sound approaches to conserving America's wildlife. Defenders of Wildlife is publishing this report to demonstrate that the Endangered Species Act has been successful, that improvements can be made in implementation of the law and that Congress, in reauthorizing the law, must act responsibly. The authors hope that this document will serve as an effective policy resource and as a framework for all parties seeking productive common ground in the debate over reauthorization of the Endangered Species Act.

This report attempts to:

- Acquaint the reader with the issues surrounding the single most significant piece of environmental legislation of this century.
- Add facts and substance to a debate now dominated by hyperbole.
- Introduce concrete and sensible recommendations for improving the Act.
- Provide a vision for future land-management policy that will take us beyond excessive dependence on this single law.

The Introduction of the report reviews the controversy surrounding the Act, discusses its history and makes general recommendations. Section One demonstrates that extinction affects us all, despite assertions to the contrary. It reviews the scientific arguments for endangered species protection, examines how endangered species enrich human lives and shows how loss of species, leading to a reduction in overall biodiversity, jeopardizes humanity's future.

Section Two is designed as a lay person's review of the Act and how it works.

Section Three focuses on what can be done to improve species conservation under the Act and provides specific recommendations for its reauthorization.

Section Four looks at where conservation and biodiversity protection should go in the future. It also examines proposed ecosystem management and international conservation efforts.

The Appendix answers ten of the most commonly asked questions about the Endangered Species Act.

Species case studies provided throughout the report highlight key aspects of the Act's implementation.

Introduction

"There is no life to be recreated in this form again. We are looking upon the uttermost finality which can be written, glimpsing the darkness which will not know another ray of light. We are in touch with the reality of extinction."

— Arthur Beetle Hough [1]

The Endangered Species Act (ESA) should help to save all species, including our own, from irreparable injury. We protect wildlife species not only because all life deserves our respect and appreciation, but also because species serve as indicators of the health or condition of the ecosystems upon which all life depends. As the integrity of the natural world degrades, so does the quality of human life. Yet humans increasingly threaten a large percentage of the Earth's species with extinction. The ESA is a critically important law because it requires developers, politicians, biologists, industrialists — all citizens — to consider how their actions affect species and associated ecosystems.

If ever the ESA was needed, it is needed now, when development and consumption trends point to the accelerated degradation of natural habitat. Yet, despite a burgeoning public interest in and respect for wildlife and the natural world, the ESA has never been in such grave danger as it is today. A well-funded campaign of misinformation is eroding support for the Act all across the country. A congressional majority critical of federal regulations is considering proposals that, if enacted, will eviscerate the Act's protections.

The Endangered Species Act's Vital Role

Enormous opportunities exist for effective and efficient species conservation under the ESA. From California and the Pacific Northwest to Florida and Louisiana, the ESA is making a positive difference in the quality of human life. In many places, the law is being implemented in innovative ways that reflect a broader shift in environmental law: state governments are eager to assume a greater share of conservation responsibilities, and statutes and regulations are being revised to encourage market mechanisms that promote conservation aims. But conserving species under the ESA continues to be a tremendous challenge as funding becomes increasingly tight and burgeoning human populations put redoubled pressure on already troubled ecosystems.

The ESA is the culmination of almost a century of federal legislation to protect wildlife in the United States and abroad. Since the law's enactment, implementation of the ESA has become increasingly sophisticated, primarily in response to advances in conservation biology and environmental economics. But the fundamental tenet of the ESA has remained unchanged: unique life forms should not be driven to extinction merely for the sake of short-term economic gain.

From the birth of the nation to the dawn of the present century, wildlife-conservation laws in the United States were developed and administered by individual state governments. These laws focused primarily on protecting game species from excessive hunting.[2] North America's first such wildlife-conservation law actually predates the nation. This was a closed season on deer hunting enacted by colonial Rhode Island in 1639. After the American Revolution, wildlife protection was left in state hands. The federal government did not formally enter the wildlife-conservation arena until passage of the Lacey Act in 1900. Using the federal government's power to regulate interstate commerce, the Lacey Act banned interstate sale of wildlife products that had been outlawed by individual states.

The earliest wildlife laws were limited to protecting animals thought to have economic significance, such as waterfowl, deer and songbirds. Protection did not extend to nongame species, predators or — except in the form of trees needed for lumber — plants. Many of these unprotected species continued to decline or were destroyed outright. Wolves, grizzly bears and mountain lions, for example, were subjected to extermination campaigns.[3] In addition, many species that had been subject to market hunting failed to recover from the depleted numbers that remained at the end of the 19th century. As a result, animals once plentiful began to disappear. By 1941, the once widespread whooping crane had been reduced to fewer than 25 individuals. The American alligator was hit hard by demand for shoes and purses made from their hides, and the bald eagle, originally found throughout the contiguous United States, was reduced to fewer than 500 nesting pairs south of Canada.

With these declines came the realization that wildlife is more than just a game resource. In 1949, Aldo Leopold's popular book *A Sand County Almanac* argued that humans have a responsibility to act as stewards of the natural community. Meanwhile, the nascent science of ecology revealed that all elements in a biological system are interdependent and that as individual species decline, entire ecosystems grow weaker.

In 1966, Congress passed the Endangered Species Preservation Act, the first broad federal legislation intended to help protect species from extinction. Based on the sound concept that a species cannot survive unless its habitat is conserved, the Act authorized the Secretary of the Interior to use federal funds to purchase lands inhabited by declining species. But the law was weak. It

did not even prohibit the killing or injuring of protected species. Only species found in the United States were eligible for protection, which was restricted to vertebrate animals (mammals, birds, fish, reptiles and amphibians).

Amendments in 1969 broadened the Act to cover species found throughout the world and expanded the definition of protected "wildlife" to include invertebrates. Nevertheless, the law still lacked effective enforcement mechanisms.[4] In 1972, an environmentally awakening American public asked for a stronger approach, and President Richard M. Nixon agreed, saying the 1969 Act "simply does not provide the kind of management tools needed to act early enough to save a vanishing species."[5]

Congress responded a year later with a much more effective law. The Endangered Species Act of 1973 specifically prohibited both the killing and harassment of protected species and the destruction of habitat deemed critical for the survival of listed species. In addition, protection of endangered species and their habitats became a responsibility of all federal agencies. Because of its new strength and flexibility, the ESA has been described as "the most comprehensive legislation for the preservation of endangered species ever enacted by any nation."[6]

The burgeoning role of the ESA in conserving species shows that other wildlife protection laws are failing or are not as effective as they should be. Such laws as the 1976 National Forest Management Act (NFMA), the 1976 Federal Land Policy and Management Act (FLPMA) and the wetlands provisions of the 1972 Clean Water Act (CWA), as well as state and local land-use regulations and programs, are all intended to assist in protecting wildlife habitat. But because habitat protection has been too little and too late, crisis management for individual species has become common, the ESA has been overtaxed, and species continue to become imperiled at a rapid rate.

The law now recognizes more than 900 domestic threatened and endangered species, while 4,000 candidate species await a listing decision. The number of species listed under the ESA and the regulatory effects of the law both grow in direct correlation to the nation's failure to prevent species from becoming threatened and endangered. The ESA would play a much smaller role in human affairs if developers attempted to achieve their goals with careful planning designed to avoid jeopardizing greater numbers of species.

Problems of the Act Are Overstated

The primary problems with the ESA are twofold. First, the environmental community is concerned that in many cases species listings and recovery plans are not timely enough or scientifically adequate. These concerns have been addressed through various court victories and, for the most part, can be resolved through more refined interpretation and implementation of the present law.

At the same time, resource user and private-property-rights groups complain that the ESA

inhibits their activities and does not adequately consider individual rights and economic objectives. This second set of problems has precipitated the current concerted attack on the ESA.

Driving the bulk of the controversy over the ESA is the law's perceived threat to private property rights. A coalition of opponents of the Act asserts vociferously that the ESA, particularly Section 9's prohibition against harming the habitat of listed species, violates the Fifth Amendment to the Constitution, which states that "private property" shall not be "taken for public use without just compensation." However, these concerns are overstated and legally groundless. The federal courts have never found the ESA's regulatory reach to constitute a taking, and in any event the ESA need not be implemented in a way that denies reasonable activities on private property.

Economic complaints about the ESA also are overstated. In fact, the Act allows economic considerations at all stages of implementation save one — the listing of species as threatened or endangered under Section 4. For this fundamental finding, scientific considerations are necessarily paramount. The rationale behind using only scientific criteria in the listing decision is that the public needs an objective accounting of the country's biological resources.

At all other stages in the ESA regulatory process — such as critical habitat designation, recovery plan development, federal agency consultation and take permitting — economic factors are considered explicitly. Thus, although Congress has consistently required a scientifically credible accounting of the status of wildlife in the listing process, it has simultaneously provided the agencies responsible for implementing the ESA with ample opportunity to balance species protection against economic considerations.

The ESA's Ultimate Goal

The ultimate goal of the ESA, stated in Section 2 of the law, is to maintain healthy ecosystems. Healthy ecosystems support healthy humans and wildlife, yielding a prosperous and secure United States. We need only look at Russia to discover the fate of nations that ignore environmental health in favor of uncontrolled development, as the Soviet Union did during Communist rule.

Ecosystem management is a recent concept that seeks to combine the scientific and social tenets of successful ESA implementation into a new call for protecting ecosystems as a whole. By protecting both species and ecosystems, the ESA helps to protect biodiversity — the variety of life forms and their interrelationships. This diversity, as later sections of this report explain, functions as the foundation for human survival and well-being. Loss of biodiversity threatens to impoverish human society.

Scientists such as Harvard University biologist Edward O. Wilson have pointed out that species extinctions are occurring today at unprecedented speed. The solution to this crisis lies in the genius of human adaptability. Although humans have the

capacity to destroy, they also have the ability to monitor and control their own actions, to use foresight in warding off danger, to use science to recognize hidden biological dangers and to choose not to destroy, but to preserve and protect habitat and species. The human challenge is to understand the natural world and to build a harmonious relationship with it for the benefit of both nature and humankind.

The Republican ascendancy in Congress, marked by open hostility to conservation and environmental laws, comes at a time when the ESA needs reform and improvement. But the need for a healthy natural world is not a partisan concern and should not be twisted into a divisive demagogic issue. By acting in the visionary spirit of President Theodore Roosevelt, rather than in the constricted spirit of special interests that place the profit of the few before the welfare of the many, the new majority has an opportunity to restore to biodiversity conservation the nonpartisan base it deserves.

Notes

1. Peter Verney, *Animals in Peril: Man's War Against Wildlife* (London: Mills and Boone Ltd., 1979), p. 164.
2. Roderick Frazier Nash, *American Environmentalism: Readings in Conservation History*, (New York: McGraw-Hill Publishing Co., 1990).
3. Daniel J. Rohlf, *The Endangered Species Act: A Guide to Its Protections and Implementation*, (Stanford: Stanford Environmental Law Society, 1989), p. 19.
4. Rohlf, p. 22.
5. *The President's 1972 Environmental Program*, 8 Weekly Comp. Pres. Doc. 218, 223-224 (Feb. 8, 1972).
6. *Tennessee Valley Authority v. Hill*, 437 U.S. 153, 180 (1978).

SECTION ONE

Purposes of the ESA

The Endangered Species Act (ESA) is the nation's primary tool for preventing species extinctions. Congress intended the Act to function as a safety net, catching imperiled species before they are lost forever. In addition to preserving threatened and endangered species, one of the ESA's explicit purposes is to extend protection to at least a portion of the ecosystems upon which listed species depend. But the law was not designed to shouldet the entire burden of biodiversity conservation in the United States. Various other conservation laws, among them the 1969 National Environmental Policy Act, the 1972 Clean Water Act, the 1972 Coastal Zone Management Act, the 1972 Marine Mammal Protection Act, the 1976 National Forest Management Act, the 1976 Fedetal Land Policy and Management Act and the 1976 Fishery Conservation and Management Act, include provisions that protect species and habitats. If these laws were fully implemented, there would be less need for an ESA because there would be fewer endangered species. Instead, the ESA increasingly has been pressed into service for crisis management.

Saving Living Systems

Extinction is often the gradual and cumulative result of a number of common, daily activities. Taken alone, the construction of an additional suburb, the clearing of another acre of forest or the catching of an additional net full of fish might have little impact on total species populations. But the accumulated pressures of habitat loss, overexploitation, pollution and other small, daily tinkering with the natural environment result in the slow, steady dwindling of even common species. As a result, the planet is losing species faster than at any other time in human history. The ESA helps to mitigate this trend by seeking to assure the survival of the life forms with which we share the planet, from great whales and majestic eagles to often-overlooked plants scattered across the forest floor. The ESA protects all these for the benefit of all the inhabitants of

this world, including humans. Aldo Leopold, the father of wildlife management, warned five decades ago that the first rule of intelligent tinkering is to save all the pieces.[1]

Benefits of Biodiversity

On a rainy September day in 1914, the world's last passenger pigeon died at the Cincinnati Zoological Gardens. A remarkably popular game species, the passenger pigeon was once the most numerous bird in North America, if not the world, the size of its population almost beyond comprehension. Eyewitnesses reported vast flocks of the birds darkening the sky for hours, and the distinguished artist and ornithologist John James Audubon likened the cumulative roar of their wings to "a hard gale at sea, passing through the rigging of a close-reefed vessel."[2] Early in the 19th century, the species may have numbered some 4 billion birds, but unrestrained market hunting, combined with habitat loss, decimated the pigeon population until only a single, captive specimen remained, a fragile reminder of the vast flocks that had been one of the world's greatest natural spectacles. Only a few months after the last passenger pigeon died, the species was joined in extinction by the Carolina parakeet, a denizen of the Southeast that was one of only two parrot species native to the United States. The parakeet was another victim of habitat loss and uncontrolled hunting.

In the 19th century, commercial hunting played a major role in the extirpation or near extirpation of many species killed for meat or hides, including the bison, pronghorn, elk and bighorn sheep. Since then, habitat destruction has replaced hunting as the leading cause of extinction. But unlike commercial hunting, which usually targets individual species, habitat destruction affects virtually all the species that share a common area. As development across the world has accelerated, so has the rate of habitat loss and the rate of extinction. Biological diversity, the sum total of all the different and unique forms of life on the planet and their interrelationships is now threatened by a wave of extinction unparalleled since the end of the age of the dinosaurs 65 million years ago.

The recent surge in the global extinction rate coincides directly with the rise of industrial society. Although extinctions occur naturally as a consequence of evolution. The natural extinction rate is a tiny fraction of the current extinction rate. Humans have accelerated the natural extinction rate by hundreds if not thousands of times, threatening the very fabric of ecological systems. Scientists estimate that the planet may be losing up to 50,000 species per year.[3] Although data suggest that losses are occurring most rapidly in tropical rainforests, habitat in the United States is also seriously affected. During the last 200 years, more than 500 species of plants and animals native to the United States have vanished — 250 of them since 1980, according to the U.S. Fish and Wildlife Service (FWS). The span of just three human lifetimes has witnessed the permanent loss of

Endangered Species Case Study

Grizzly Bear

(Ursus arctos horribilis)

NEAL AND MARY JANE MISHLER

The grizzly bear, a subspecies of the brown bear, is to many people the prime symbol of wilderness. Grizzlies are generally brown in color, but the fur on their heads sometimes gives a grizzled appearance, hence the name. Although smaller than some other brown bears, such as the Kodiak bear of Alaska, grizzlies still can weigh up to 1,200 pounds. True omnivores, grizzlies consume a wide variety of food substances to survive. Plants make up the majority of their diet, but they also eat insects, fish, rodents and hoofed animals. Grizzlies are often seen foraging for food items in meadows and shrub fields.

Grizzlies once roamed most of the western and southwestern United States, but by the turn of the century, populations south of Canada were dramatically shrinking. Grizzlies already were extinct in a number of states as a result of eradication programs that included hunting, trapping and poisoning. Though grizzlies probably numbered fewer than 1,000 animals south of the U.S./Canada border — qualifying them as an endangered species — political pressure and lack of data instead led in 1975 to the grizzly's listing as threatened in the lower 48 states.

The current U.S. Fish and Wildlife Service grizzly recovery plan proposes seven recovery areas scattered across Colorado, Idaho, Montana, Washington and Wyoming. All are areas where grizzlies were known to have existed historically. The recovery goals for these areas focus on enhancing and/or stabilizing grizzly populations and maintaining necessary habitat.

One of these areas, the Bitterroot ecosystem of north-central Idaho and western Montana, might be the most important recovery site, as it could link bear populations in Yellowstone and northwestern Montana. This 6-million-acre wilderness includes the largest roadless area in the lower 48 states. A minimum grizzly population for the Bitterroot system is targeted at around 300 animals. Returning the grizzly to this ecosystem would increase significantly the number of grizzlies in the lower 48 and help to reduce the threat of their extinction. As with most predator reintroduction programs, this initiative faces strong resistance from local peo-

Grizzly Bear (Continued)

ple and commodity interests, who fear that reintroduced grizzlies will impinge on human use of the Bitterroot ecosystem. However, unlike other species recovery programs, this proposed reintroduction benefits from the fact that more than half of the Bitterroot ecosystem — including the Selway-Bitterroot Wilderness area and Frank Church-River of No Return Wilderness area — is already protected wilderness, and additional land is proposed for wilderness designation. This reduces the likelihood that the reintroduction of grizzlies will conflict with land uses such as recreation, timber harvest and livestock grazing.

In 1993, Defenders joined the effort to reintroduce grizzlies in the Bitterroot ecosystem. Defenders is raising the visibility of the project through educational campaigns and media work in order to build broad public support and to counter fears and misunderstanding that may stand in the way of the recovery effort. In addition, Defenders is working to obtain funding for an environmental impact statement, a necessary first step in the recovery process.

more than one percent of U.S. flowering plants, two percent of U.S. birds and amphibians and 13 percent of U.S. freshwater mussels. According to The Nature Conservancy's Natural Heritage Data Center, more than 30 percent of the nation's 16,300 species of native vascular plants are now of conservation concern, along with 22 percent of America's 2,500 native vertebrates.[4]

The United States and the world as a whole are poised on the brink of a biological tragedy that could fundamentally alter human society and the basis of all remaining life on the planet. Noted biologist Edward O. Wilson has estimated that if current trends continue, we will lose or doom to extinction within the next 30 years a fifth of the world's species.[5] The loss of literally millions of distinct kinds of plants and animals, a massive pauperization of the planet's biological resources, would rival the greatest extinctions of the past 500 million years — extinctions from which the planet required over 10 million years to recover. As Wilson has said, "This is the folly our descendants are least likely to forgive us."[6]

Despite technological advances, people are still tightly bound to natural systems. The relationship between humans and the rest of the biological world is complex and multifaceted, and the current extinction crisis can harm humans in numerous ways. The ESA is now the nation's chief vehicle for conserving biodiversity and for safeguarding society from the effects of its loss — effects that would be profound, as the following discussion suggests.

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Agriculture

We rely on the natural world for our food supply. All agricultural crops must be bred periodically with wild varieties to increase yields and even to maintain current levels of production. Although today's modern high-yield hybrid plant crops are bred

for disease-resistance, after five to 15 years genetic resistance fades as new strains of disease adapt to plant defenses, leaving entire crops vulnerable.[7] In the 1970s, for example, a corn blight struck the southeastern United States and wiped out more than a seventh of the nation's corn crop, costing farmers and consumers in excess of $2 billion.[8]

Wild relatives of commercial plant varieties, found primarily in natural areas, often are resistant to the diseases that trouble domestic crops. This makes wild species key to maintaining crop health and divetsity. In 1977, researchers discovered in Mexico a wild variety of corn that was resistant to the seven major types of viral disease that usually infect commercial corn. The potential economic benefits of this discovery are staggering: a mere one percent increase in corn production as a result of increased disease resistance would add $150 million to $200 million to the annual value of the U.S. corn crop.[9] Overall, this single discovery may be worth billions of dollars to American agriculture.

Crossbreeding crop plants with wild relatives also can provide other benefits to food production, from more nutritious soybeans to strains of barley and tomatoes that can be irrigated with seawater. The worldwide destruction of natural areas threatens many vital wild varieties of plant with imminent extinction. The wild Mexican corn plant that so benefited the agricultural industry grows in only three small patches. A single bulldozer could easily wipe out the entire species in less than an hour. Without these wild varieties, the agricultural industry may be unable to produce sufficient food to provide for exploding human populations in the next century.

Medicine

Wild species are also a major source of new curative drugs. More than 40 percent of the prescriptions filled in the United States each year are derived from plants, animals and microbes. These drugs form the backbone of the American pharmaceutical industry, which contributes more than $60 billion to the nation's economy annually.[10] Yet only a small fraction of the world's species have been screened for potential use as curative drugs. Overall, flowering plants have been the most closely examined group, yet fewer than three percent of such plants — 5,000 species out of 220,000 worldwide — have been examined for medicinal compounds.[11]

The rosy periwinkle of Madagascar provides a good example of the potential that wild plants hold for curing humanity's worst diseases. Two compounds derived from this innocuous little plant have proved successful in treating Hodgkin's disease and childhood leukemia.

Although the species-rich tropics are often described as "nature's pharmacy," many species found in the United States also hold great potential for drugs. Digitalis, a drug derived from the common purple foxglove, is used by 3 million Americans annually to treat heart disease, and aspirin, the most widely used medicine in the

world, was originally taken from the bark of the willow tree. Birch bark holds promise as a source for a drug that reduces tumors.

Many American species with medicinal potential are in danger of extinction.. Pupfishes, imperiled desert vertebrates found only in isolated hot springs in our Southwest and adjoining areas in Mexico, can survive in very hot water with very high salt concentrations. Researchers are studying these abilities in hopes of developing new treatments for human kidney disease.[12] The Houston toad, found only in rapidly urbanizing southeast Texas, contains alkaloids in its skin that are more powerful than morphine,[13] and the American bison, hunted nearly to extinction a century ago, may provide important treatments for some forms of cancer.[14] The black bear, threatened in parts of the United States, may reveal clues to the prevention of osteoporosis, since the bear loses no bone mass during its yearly five-month hibernation.[15]

Put simply, extinction deprives the world of both the potential medical advances and the related economic benefits that may be derived from wild species. According to some estimates, plant extinctions alone will cause a potential loss to the United States of more than $3 billion in lost medicines by the year 2000.[16]

Recreation

In addition to agricultural and pharmaceutical benefits, biodiversity also holds important recreational value. Americans are fascinated by wildlife and derive great pleasure from seeing animals and plants in their natural state. Between 1980 and 1985, the number of people who participated in wildlife-oriented recreation skyrocketed from 93 million to 135 million — a 43 percent increase. In the process, wildlife enthusiasts spent an estimated $14.3 billion yearly on travel and accommodations as well as on cameras, binoculars, hiking boots and other outdoor gear. Florida receives more than $1.3 billion in annual income from wildlife tourism. Visitors to Wyoming's natural areas spend more than $650 million each year.[17]

Small communities and local economies benefit most from America's passion for wildlife. The annual migration of the sandhill crane and whooping crane brings 80,000 tourists and $15 million to Nebraska's Platte River region each year. At Tennessee's Reelfoot Lake, bald eagle tours alone earn more than $2 million annually. Roosting bald eagles draw 50,000 visitors to tiny Sauk City, Wisconsin, pumping more than $1 million into the county.[18] For the residents of these areas, wildlife provides more than just attractive scenery. It is a vital economic resource that must be protected.

Ecosystem Services

A fundamental tenet of the science of ecology is that all elements in an ecosystem are interconnected and interdependent. Aldo Leopold, an intellectual patriarch of the modern conservation movement, called this single revelation "the outstanding scientific discovery of the 20th Century."[19] As more and more

Endangered Species Case Study

Western Boreal Toad

(Bufo boreas boreas)

TERRY IRELAND/U.S. FISH AND WILDLIFE SERVICE

The western boreal toad, also known as the western toad, boreal toad and northwestern toad, is an amphibian two to five inches long that lives in small ponds, marshes and streams. It is nocturnal, coming out at night to hunt for insects and find mates. In winter, it hibernates in moving currents below the water's surface. This cold-adapted toad, once common over much of the western United States and up into Alaska, is greatly depleted in much of its range.

The southern Rockies boreal toad, a genetically distinct population once prevalent in Colorado, Wyoming and New Mexico, has disappeared from more than 80 percent of its known habitat in Colorado, has become rare in Wyoming and is considered extinct in New Mexico. Declines in western boreal toad numbers have been occurring for at least a decade and have accelerated in the last three to five years. Scientists and environmentalists are particularly concerned because the reasons for recent rapid declines of this and other amphibians remain unknown. Defenders believes the southern Rocky Mountain population of the western boreal toad should be listed under the Endangered Species Act. The U.S. Fish and Wildlife Service has designated it a Category 2 listing candidate.

Habitat loss and fragmentation play critical roles in the decline of the western boreal toad. As western lands are developed, many wetlands that once served as home to the animal have been destroyed. Recreational activities such as hiking, camping, fishing and boating disturb the toad's breeding grounds. Overgrazing, mining, logging and certain water management projects are also critical factors in habitat destruction and in loss of indispensable breeding sites. In addition, as habitat becomes increasingly fragmented, the toads have great difficulty dispersing to other areas.

Other factors are contributing to the toad's decline. For example, fish or bullfrogs may either feed on the toads or compete with them for food. Poisons added to bodies of water to kill these species may affect nontarget species such as the boreal toad. And, perhaps most

Western Boreal Toad (Continued)

importantly, environmental factors such as acid rain, increased ultraviolet radiation from ozone depletion and pollution from pesticides may steepen the decline. Much more information is needed to determine how urgent the situation is and to identify underlying factors.

Humans have reason to be alarmed by all of these trends and the subsequent loss of boreal toads. Amphibians serve as integral components of many ecosystems. When young, they provide part of the food base for fish and other animals. As adults, they consume pesky and sometimes harmful nocturnal insects. In addition, amphibians are "indicator" species, since they serve as biological indicators of global change and the health of the environment. Their decline may serve as a warning of more pervasive environmental problems. It may be just a matter of time before the environmental degradation responsible for the boreal toad's decline will affect larger species, even humans. In the meantime, we need to take steps to identify and mediate these problems before irreversible changes take place.

species are pushed to the brink of extinction and beyond, the point at which ecosystems become permanently impaired draws nearer and nearer. Although all ecosystems have some degree of resiliency, the danger of reaching a cataclysmic threshold of species extinction is real.

Although biologists do not yet know enough about the ecological roles of individual species to predict all the ecological consequences of specific extinctions,[20] they do know that the effect of losing even seemingly inconsequential species adds up over time. For example, tiny organisms in forest soils, many of them still unnamed and unknown to science, may play a more important role in the integrity of some ecosystems than do bears and wolves. Without these microorganisms, the soil could lose its ability to sustain other forms of life, and without fertile soil, the forest and the animals and plants within could not survive.

In any ecosystem, a threshold may be crossed at which so many species are missing that normal ecosystem functions cannot be maintained.[21] Healthy ecosystems regulate the cycles of weather and temperature, preserve natural soil fertility, decompose wastes and control flooding and insect pests. When these functions are damaged, species suffer, including humans, who also depend on properly functioning ecosystems. In Florida, for example, thousands of workers and their families depend on the annual harvest of pink shrimp, which use Everglades wetlands as a nursery. As agriculture drains the Everglades and pollutes it with phosphates and toxic chemicals, the ability of the great marsh to support shrimp runs out, ruining the livelihoods of the shrimpers. Similarly, salmon fishermen in the Pacific Northwest are watching catches plummet as the clear, free-flowing streams essential to salmon spawning are dammed and are clouded by siltation

caused by clearcutting and livestock grazing.

In each case, the decline of species acts as an early warning sign, a distress signal from a floundering ecosystem. The decline of the bald eagle awakened us to the potential health hazards of DDT. By banning DDT to protect eagles, we have protected the health of our children as well. A similar situation may now be warning of the dangers posed by a number of industrial byproducts which, in minuscule doses, may mimic the hormone estrogen. Alligators in Florida, sea gulls in California and shorebirds in Wisconsin that have been exposed to these pollutants have all shown sexual deformities consistent with accelerated estrogen levels. Scientists are trying to determine whether a link exists between reproductive declines in these animals and evidence that sperm counts for human males in industrial countries have decreased by half since 1940.[22]

Emotional Rewards

To the tangible material benefits that humans receive from living nature must be added the important emotional benefits. Most people feel a strong emotional attachment to wildlife and nature and enjoy experiencing them, even in an urban setting. Each year more Americans visit zoos and aquariums than attend all major sporting events combined.[23]

Some evolutionary biologists suggest that humans may have an innate psychological need for the beauty and inspiration of unspoiled nature. This hypothesis is based on the idea that humanity has been an integral part of the natural world since time immemorial and retains a powerful generic affinity for that world.

In addition, many Americans benefit from the satisfaction that comes from being good stewards of nature. In a recent nationwide survey conducted by researchers at Oregon State University, 90 percent of respondents agreed that humans have an ethical obligation to protect other species.[24]

By accepting this obligation, people express not only their need for nature but also their concern about something other than themselves. This concern enriches not only nature, but also the people who experience it.

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SECTION TWO

How the ESA Works

Because different species require different levels of protection, the Endangered Species Act (ESA) establishes two management tiers. An endangered species is one that is in danger of extinction throughout all or a significant part of its range. A threatened species is one that is likely to become endangered in the foreseeable future. These choices of listing status give the Act important flexibility. Species can be protected before they reach the brink of extinction, and they can be safeguarded while they rebuild to healthy levels.

Subspecies and distinct populations also receive protection under the Act because the jeopardy that a species faces may vary in different parts of its range, requiring different degrees of protection in different areas. The gray wolf is an example of a species that has been "split listed." Gray wolves in Minnesota are listed as threatened, while gray wolves in Alaska, where wolf populations are too large to warrant federal listing, receive no ESA protection. In fact, the Alaska state government has sought persistently to conduct wolf-control programs, killing the animals to pacify hunters who believe the predators are reducing caribou numbers. Other examples of split listings include the bald eagle, grizzly bear and green sea turtle.

A species receives protection under the ESA once it has been listed as either threatened or endangered. Any concerned party, including a private citizen or organization, can petition to have a species listed.

The Listing Process

Once a species has been proposed for listing, the Secretary of the Interior (or, in the case of most marine species, the Secretary of Commerce) has 90 days to determine whether the petition includes enough information to warrant a formal review of the species' status. If the answer is yes, the Secretary conducts a thorough study of the status of the species to determine what level of protection, if any, is appropriate. The Secretary must make the listing determination

within one year of the start of the formal review, though an extension of six months is permitted for complicated or controversial proposals. If the formal review concludes that listing is justified, the Secretary must take a number of steps to notify the public. The Secretary must publish a notice of the decision in the *Federal Register*, inform affected state and local governments and any applicable scientific organizations, print a summary of the proposal in a local newspaper and hold a public hearing if requested to do so.

When a species is at immediate risk, the Act allows an emergency listing that bypasses the more detailed and time-consuming formal review process. To justify an emergency listing, the Secretary must publish a detailed explanation of why the emergency measures are needed and must notify the conservation agencies of all states affected by the emergency regulation. The Secretary also may publish appropriate emergency regulations in the *Federal Register*. Emergency listings expire after 240 days unless the Secretary determines by that time that formal listing is warranted.

The ESA requires that the Secretary's listing decisions be made "solely on the basis of the best scientific and commercial data available." In each reauthorization since 1973, Congress repeatedly has affirmed that economic considerations are to play no part in the listing decision. Determining the status of a species proposed for listing is strictly a scientific question that must be answered solely on the basis of biological and commercial trade data. However, economic impacts may be considered at every other step in the Act's protection process.

A total of 1,524 species are listed under the ESA at present. Roughly 700 of the endangered species and 200 of the threatened species are found in the United States. The rest are in foreign countries.[1] The Act also allows the Secretary to designate candidate species that will be formally considered for listing once agency resources become available. Currently, more than 4,000 species are awaiting final evaluation. The ability to designate candidate species is another example of the legal flexibility granted to the Secretaries of the Interior and Commerce under the ESA. Some presidential administrations, more interested in promoting short-term economic gains than in protecting America's natural heritage, have used this flexibility to delay the listing process. Many species have become extinct while awaiting action under the ESA.[2]

In 1992, responding to a lawsuit brought by a number of conservation organizations, including Defenders of Wildlife, FWS agreed to accelerate the processing of its backlog of species. In the settlement, FWS agreed to propose listing by September 30, 1996, for more than 400 species categorized as "C-1" candidates (species with sufficient biological data to warrant listing). FWS also promised to expedite the review of 923 species that had been improperly categorized as "C-2" candidates or not given a priority ranking despite the fact that their listing had been determined to be

Endangered Species Case Study

Florida Black Bear

(Ursus americanus floridanus)

DAVID S. MAINE

At one time, Florida and parts of southern Georgia and Alabama were home to more than 12,000 black bears. Bears ranged over all of Florida, including the Keys. However, as a result of the rapid destruction and fragmentation of Florida's wildlife habitat by development (approximately 20 acres are being lost every hour), fewer than 1,500 bears remain, scattered across less than 20 percent of their historic range. The Florida black bear, a unique subspecies, has been listed as threatened under the state's endangered species law and is a Category 1 candidate for federal listing. Thanks to a lawsuit brought by Defenders and other organizations, a listing decision has been promised by the U.S. Fish and Wildlife Service by September 30, 1996.

Current conservation areas in Florida cannot protect enough habitat to ensure the long-term survival of the state's bear populations. Most of Florida's remaining bears occur in five major populations located in the Ocala National Forest/Wekiva River Basin, Big Cypress National Preserve, Apalachicola National Forest, Osceola National Forest and Eglin Air Force Base. The Florida Game and Fresh Water Fish Commission estimates that each of these isolated bear populations requires a minimum of 500,000 to 1 million acres. Only in the Apalachicola region is this much bear habitat in public ownership. Even there, the protected areas are fragmented by private lands and roads.

Statistics indicate that collisions with motor vehicles are the leading cause of Florida bear mortality. According to the Florida Department of Transportation, during the last 50 years the state's network of high-speed paved roads has expanded at the rate of 4.5 miles per day. At least 357 bears have been killed by vehicles since 1976. In 1993, 21 bears were killed in the Wekiva River Basin, home to one of the state's most threatened bear populations. Proposed road-widening projects risk increasing the danger of extinction by bringing about more vehicle-caused mortality and habitat fragmentation.

To help save the Florida black bear, the Florida panther and hundreds of other species that depend on the same habitat, Defenders of

Florida Black Bear (Continued)

Wildlife and the Florida Chapter of the Sierra Club in October, 1993, launched the Habitat for Bears Campaign. The campaign is building public awareness and encouraging citizen participation in government decisions affecting the Florida black bear.

To help educate people about the plight of Florida's bears, campaign participants prepared a slide show, exhibit and video presentation that have been seen by tens of thousands of visitors to the Fort Lauderdale Museum of Discovery and Science. Campaign activists have testified at transportation hearings, written letters in support of acquisition of additional bear habitat, pressed state officials to complete what may be the nation's first bear underpass and urged the U.S. Fish and Wildlife Service to expedite listing of the black bear as threatened under the Endangered Species Act. Campaign staff also have been invited to serve on a committee of local landowners, agency staff and citizens to help develop habitat management strategies for the bear populations. The success of the Habitat for Bears Campaign illustrates that caring, well-informed citizens can make a difference.

warranted. In addition, FWS agreed that a multi-species approach to listing would be more cost-effective than a single-species approach when dealing with a number of species in the same ecosystem and would enhance understanding of the common nature and magnitude of threats facing these ecosystems.

Section 9 Takings

Once a species has been formally listed as threatened or endangered, it is entitled to certain regulatory protections under the Act. First and foremost, Section 9 of the Act specifically prohibits the taking of any endangered species of fish or wildlife. The term "take" is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." In addition, endangered species, their parts or any products made from them may not be imported, exported, possessed or sold. Section 4(d) of the Act gives the Secretaries regulatory discretion to extend the protections of Section 9 to threatened species.[3]

While clearly prohibiting direct injury to individuals of a listed species, the restrictions on takings also apply to actions that destroy or alter habitat of a listed species.[4] In the 1981 case *Palila v. Hawaii Department of Land and Natural Resources*,[5] a federal court upheld this interpretation, ruling that habitat modification may result in harm to a species and thus meets the definition of a proscribed "taking." This interpretation, which has formed the basis of habitat protection efforts under the ESA for more than ten years, recently was challenged in *Sweet Home Chapter of Communities for a Great Oregon v. Babbitt*.[6] A three-judge panel ruled that the ESA's takings provisions apply only to specific harm to individual species and not to their habitats. The U.S. Supreme Court recently heard this case, and a decision is

expected very soon. If federal authority to conserve the habitat of listed species under the ESA is lost, much of the law's protective power will vanish with the species the Act is designed to protect.

Critical Habitat

Section 4 of the ESA directs the Secretary of the Interior formally to designate areas of critical habitat essential to the conservation of a listed species. Congress has emphasized in the law that critical habitat should not be limited to the current range of the species at the time of listing or to the minimum amount of habitat necessary for the species' survival. Rather, the designation should include enough area for the species to expand its range and recover to healthy population levels.

In practice, designation of critical habitat has proved highly subjective and frequently controversial. The original language of the 1973 Act did not include a formal process for designating critical habitat. This lack of process gave the Secretary broad discretion in basing the designation purely on the biological needs of the species. In the 1978 amendments to the Act, Congress limited this discretion by requiring the Secretary to weigh the biological merits of proposed critical habitat designations against economic impacts on surrounding areas. Although this analysis was restricted to critical habitat designation and did not extend to the impact of actually listing species, Congress required that such an analysis be completed before any species could be listed officially.

The listing process immediately ground to a halt, even though Congress doubled the time allowed for the listing process from one to two years. Meeting the deadline proved impossible for the underfunded and understaffed FWS, which was forced to withdraw listing proposals for more than 2,000 species.[7]

Realizing that the system had become unworkable, in 1982 Congress further amended the process of critical habitat designation, resulting in the procedures still in use today. Currently, the listing of a species is no longer dependent on the determination of its critical habitat. Once a species has been listed, the Secretary has an additional year to designate critical habitat for the species if it is "prudent and determinable" based upon both biological and economic criteria. Although this change was intended to make critical habitat designation more flexible, the primary result has been to deny or delay critical-habitat designations for many species.

Fewer than 25 percent of all listed species have had critical habitat designated for their survival and recovery. Contrary to many critics' claims, critical habitat designation has no direct impact on private property because it is not an element of a Section 9 take and primarily seeks to address the actions of federal agencies.

Interagency Consultations

One of the most important protection mechanisms in the ESA lies in Section 7, which requires all federal agencies to

ensure that any actions they authorize, fund or carry out are not likely to jeopardize the continued existence of any listed species or to modify adversely its designated critical habitat. While this obligation clearly applies to direct actions taken by a government agency, such as construction of roads and dams, it also includes indirect actions such as granting of permits, leases and licenses and establishing contracts and regulations.

To assist agencies in fulfilling their Section 7 obligations, the ESA establishes a consultation process in which an agency proposing an activity (known as the "action agency") can work with FWS or with the National Marine Fisheries Service (NMFS) in the case of marine species to ensure that the activity produces no more than minimal harm to protected species. Ideally, the potential impacts of a proposed action upon listed species should be considered early in the planning process while alternatives to the action still exist and before excessive amounts of money and resources have been irretrievably committed to the activity.

In practice, the consultation process has both formal and informal aspects. In the early stages of project development, the action agency consults informally with FWS to determine whether any endangered or threatened species are found in the area to be affected by the project. If the informal consultation reveals that the project area is home to a listed species, the action agency must prepare a biological assessment to determine whether the project is likely to affect the species or its critical habitat adversely. The agency cannot enter contracts or begin construction until the consultation has been completed. This prevents significant investment in a project before its potential impacts on protected species have been assessed. Otherwise, a major financial investment might be used to justify an otherwise damaging or illegal project.

If the action agency and FWS determine that an action may adversely affect a listed species, FWS must issue a biological opinion that officially declares whether the action is likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of its critical habitat. If FWS concludes that the action will not jeopardize the species in question, a no-jeopardy opinion is given, and the action is allowed to proceed. In conjunction with the biological opinion, FWS also may issue an incidental-take statement for the action agency. This statement recognizes officially that although the action will not jeopardize the species as a whole, a few individuals of the species may be accidentally "taken" (harassed, harmed, injured or killed) during the course of the action. Although the incidental-take statement exempts the action agency from liability for such accidents, the agency nevertheless must reinitiate consultation and reconsider its conservation measures if more than the expected number of animals or plants are taken or if the nature of the impacts changes. The incidental-take allowances, authorized under Section 7(b), act as a compro-

Endangered Species Case Study

Golden-Cheeked Warbler

(Dendroica chrysoparia)

STEVE MASLOWSKI/U.S. FISH AND WILDLIFE SERVICE

A federal proposal to designate parts of 33 Texas counties as critical habitat for the golden-cheeked warbler could not have come at a worse time. Initiated in 1994, the proposal quickly became one of the most heavily debated issues in the Texas gubernatorial race between then Governor Ann Richards and successful GOP challenger George Bush, Jr., eventually undercutting protection for this endangered songbird.

The golden-cheeked warbler was listed as endangered in 1990. During the last several decades, suburban development and destructive land-use practices have led to a dramatic decline in suitable warbler habitat, adversely affecting the species. The warblers require a mixture of mature oak and juniper trees for nesting sites because they build their nests in the oaks but construct them out of juniper bark. Suitable breeding range, which historically extended from Mexico to Oklahoma, is now limited to portions of central Texas. Since the warblers usually return to the same nesting area each breeding season, the U.S. Fish and Wildlife Service proposed to designate the few remaining sites as critical habitat for the species.

Unfortunately for the warbler, the proposal created considerable controversy, particularly among affected landowners who feared that the economic value of their land would decline as a result of the critical habitat designation. Ineffective communication between FWS and the landowners escalated fears and concerns. Many landowners felt paralyzed by a lack of information regarding what they could do on their land. For example, some believed that if their land were designated as critical habitat, they would face severe consequences if they removed even a single juniper. They failed to recognize that the designation of critical habitat directly affects only actions that are federally funded or authorized. As a result of the political controversy, FWS withdrew the request for critical habitat designation.

Defenders of Wildlife recommends that working groups be established in cases like this to investigate incentives that could be offered to landowners for conserving wildlife habitat.

Golden-Cheeked Warbler (Continued)

Composed of local citizens and concerned conservationists, these groups would identify mechanisms to reduce polarization and facilitate public acceptance and understanding of species conservation initiatives. Defenders recently has been experimenting with strategies that can be employed to help address the limitations of the regulatory approach. Our participation in the Louisiana Black Bear Conservation Committee and our Wolf Compensation Fund (which compensates livestock producers for verified livestock losses to wolves) exemplify the effectiveness of working with local landowners to preserve species. Only through reasoned dialogue among private landowners, the environmental community and federal, state and local governments can the nation begin to find tangible and realistic solutions to these problems and, in the end, make the existence of an endangered or threatened species on one's property an asset rather than a liability. Had a cooperative program been in place in Texas, suitable protection for the golden-cheeked warblers might have been ensured, even during an election year.

mise, allowing carefully planned federal projects to go forward with appropriate conservation measures.

If the biological opinion concludes that the planned action will jeopardize the existence or recovery of a listed species, the action is not allowed to proceed without some modifications. In such a jeopardy opinion, FWS must work with the action agency to provide reasonable and prudent alternatives so that adverse impacts on the protected species can be avoided. The action agency must then adopt an acceptable alternative before the proposed action can proceed. The development of alternatives to the planned action enables FWS to explore compromises instead of prohibiting the activity outright. In most cases, the alternatives are simply adopted by the action agency, and the project continues.

The vast majority of interagency consultations result in either no change in the proposed action or in the adoption of a reasonable alternative. According to a recent study,[8] FWS listed 94,113 informal and 2,719 formal consultations between 1987 and 1992. Of these consultations, only 352 resulted in jeopardy biological opinions, and almost half of these were related to a single Environmental Protection Agency program for the registration of pesticides. Only 54 of these jeopardy opinions resulted in the termination of the proposed activity. The remaining projects continued after the inclusion of alternatives to prevent harm to listed species. Of 2,719 projects proposed for areas known to be inhabited by threatened or endangered species, more than 98 percent were allowed to proceed. Clearly, the Section 7 consultation process very rarely results in irreconcilable conflicts between development and listed species.

In the rare cases where no reasonable and prudent alternative to a proposed action can be

Endangered Species Case Study

Yangtze River Dolphin

(Lipotes vexillifer)

CRAIG VAN HOTE

The "baiji" or Yangtze River dolphin, one of five remaining freshwater dolphin species in the world, has been on the U.S. endangered species list since 1989 and was named a Protected Animal of the First Order by the Chinese government in 1975. The highly endangered baiji population is believed to number only around 150. This has not, however, stopped the Chinese from constructing Three Gorges Dam, to be the world's largest. The dam will flood 367 miles of valley known to harbor other endangered species besides the baiji. The project also will disrupt the lives of millions of people.

The U.S. government for many years provided technical assistance for Three Gorges Dam. In 1992, however, Defenders of Wildlife sued the U. S. Army Corps of Engineers and Bureau of Reclamation for failure to consult with the U.S. Fish and Wildlife Service under Section 7 of the Endangered Species Act before aiding the project. Section 7 states that all federal agencies must consult with FWS on any action that may affect a listed species. To establish evidence for the lawsuit, Defenders worked with scientists and researchers in China who evaluated the probable effects of the dam on Yangtze River habitat. The researchers discovered that endangered tigers, pandas and cranes and rare paddlefish depend on the Yangtze and the surrounding valley. As a result of the suit, all U.S. agencies ceased involvement with the dam. However, construction continues.

The Chinese government has adopted some measures to protect the dolphin. An educational program seeks to teach people not to kill dolphins, which in the past were hunted for meat, killed as an enemy to fishermen and trapped with nets and rolling hooks. The government also has set aside a "semi-nature reserve" for the baiji. However, the relatively small reserve is of questionable value to a species thought to have ranged historically from the Three Gorges to Shanghai. Moreover, the dolphins are difficult to find and capture for transport to the reserve.

While Defenders applauds the Chinese government's public education campaign, the organization also continues to warn the international public about the devastating effects that Three Gorges Dam will have on the baiji and other species. Defenders also continues to fight for the application of Section 7 of the Endangered Species Act to any U.S. agency that helps other nations to develop projects like Three Gorges Dam. Any U.S. agency action, wherever it occurs, should be bound by U.S. law. This is necessary nor only for ecological reasons, but also for budgetary and accountability reasons. The world's biodiversity may depend upon such American leadership.

agreed upon, the action agency can petition for exemption from the constraints of the ESA. In the wake of the famous Tellico Dam controversy, Congress amended the ESA in 1978 to create an Endangered Species Committee to resolve conflicts that arise when the consultation process fails to result in agreement. Nicknamed the "God Committee" for its power to determine the survival of a species, the Endangered Species Committee has been called upon only three times since its creation. Its infrequent rulings are a credit to the ability of the ESA to resolve conflicts and reach compromises acceptable to all.

A recent success story is the ESA's role in establishing water quality standards for the Sacramento River, the San Joaquin River and the San Francisco Bay ecosystems in California. A historic agreement between the federal government, the State of California and the myriad water users in the region established sensible limits on freshwater diversion to protect habitat used by the delta smelt, a listed species. The agreement also protected wetlands and safeguarded the quality of water used for various purposes by people throughout much of northern California, demonstrating how the ESA can work for the benefit of everyone.[9]

Habitat Conservation Plans

As mentioned above, the Section 7 consultation requirements apply only to projects that involve the federal government. But state and private actions also can have a detrimental impact upon threatened and endangered species. In the 1982 amendments, Congress provided for the development of habitat conservation plans (HCPs) under Section 10 of the Act to reduce conflict between economic development and species protection. HCPs serve as a release valve, allowing development of and incidental take in portions of habitat used by listed species in exchange for the creation and implementation of a plan designed to conserve the same species in the remainder of the habitat. To ensure a balance between species protection and economic development, FWS or NMFS must review and approve all HCPs prior to implementation.

To be effective, the HCP planning process must involve all interested parties. In addition to landowners, developers and FWS or NMFS, HCP negotiations often include representatives from state and local governments, natural-resource agencies, environmental organizations and community groups. The HCP should list all threatened and endangered species in the planning area, as well as species likely to be affected by the plan. To be approved, an HCP must result in no net reduction in the prospects for survival and recovery of affected species. In addition to any economic benefits for local communities, HCPs should produce a net benefit to the species involved. To limit habitat fragmentation, HCPs should include as much as possible of the known ranges of affected species.

Most large HCPs seek to protect natural areas away from associated development sites. The selection, design and manage-

ment of these habitat reserves are perhaps the most critical parts of the entire HCP process, since insufficient or inappropriate habitat mitigation could lead to the decline and possible extinction of listed species. Because mitigation is an inexact science, HCPs should favor species protection when management uncertainties arise. The plans must provide for long-term monitoring of the affected species and must outline measures to be taken should one or more affected species decline.

The creation and implementation of an HCP requires substantial time and money. A chief concern of developers is that new species listings in areas already covered by HCPs could require habitat and conservation commitments beyond those already agreed upon, boosting costs unexpectedly. To reduce the risk of such unforeseen circumstances, the Departments of the Interior and Commerce announced late in 1994 a "no-surprises" policy which promises that the federal government will not require additional land or financial commitments in HCP areas. While the no-surprises policy reduces long-term financial risks for HCP permittees, it also creates long-term risks for listed species, heightening the need for carefully documented, scientifically sound HCPs.

Some critics of the HCP process have pointed out that the current length and expense of negotiating a Section 10 conservation plan actually promotes larger developments by limiting the HCP process to big, wealthy companies. To remedy this, the Department of the Interior is drafting guidelines to ease the HCP process for small landowners. At the same time, FWS must not compromise the survival of the species it is obliged by law to protect. Without close scrutiny, careful management and objective science, HCPs can be abused, exacerbating the decline of endangered species and the loss of biodiversity.

Recovery Plans

The ultimate goal of the ESA is not simply to prevent extinctions but also to return species to healthy population levels. The benefits that people receive from biodiversity — whether medicinal, agricultural, recreational, aesthetic or emotional — depend on maintaining healthy, functional populations of all species, however ecologically or economically insignificant some species may superficially appear. To help guide the recovery process, Section 4(f) of the Act requires FWS and NMFS to create recovery plans for all threatened and endangered species.

Usually developed by federal and state agency biologists and outside contractors or by teams of other experts, recovery plans are general prescriptions for bringing a listed species out of peril. Although each plan usually recommends a range of actions to benefit a species — such as additional biological research, protection of critical habitat, captive-breeding programs or reintroduction efforts — the plan generally does not mandate specific programs or activities. However, under Section 7(a)(1) of the ESA, federal agencies conducting activities that may affect recovery have

an affirmative duty to implement the conservation goals of each recovery plan in their own programs. Actions recommended by individual recovery plans are therefore enacted through mandates in more specific plans, such as forest plans, national park management plans and range management plans.

To ensure that all relevant new biological information, such as change in the status of a species, is taken into consideration, FWS or NMFS is supposed to review and revise recovery plans every five years. Unfortunately, limited staff, tight financial resources and overt political pressure have prevented the services from completing recovery plans for many listed species. For example, as of January, 1995, FWS had published 395 recovery plans covering 502 listed species.[10] However, hundreds of listed species still await the protection of formal recovery plans. Biologists estimate that close to half the species awaiting recovery plans continue to decline.[11] This occurs at least in part because the ESA sets no formal deadline for developing recovery plans, and funds for recovery plans are often earmarked for high-profile species, leaving less charismatic species to decline.

Even without additional funding or staff, minor changes in the way FWS develops recovery plans could help alleviate some of the problems. Most importantly, recovery plans that treat more than one species should be favored over single-species recovery plans. Implementation of a multi-species approach to recovery plans would extend protection to many species in the same ecosystem while addressing the landscape-level processes that are behind their collective declines. A key improvement for single-species recovery plans would be the establishment of specific biological guidelines for the long-term recovery of plants and animals, including specific targets for population size and for numbers of populations.[12]

Experimental Populations

The ESA, in Section 10(j), provides the Secretaries of the Interior and Commerce with the power to designate certain populations of listed species as experimental populations if that status supports overall conservation efforts on their behalf. Section 10(j) also states that an experimental population must be geographically separate from non-experimental populations of the same species.

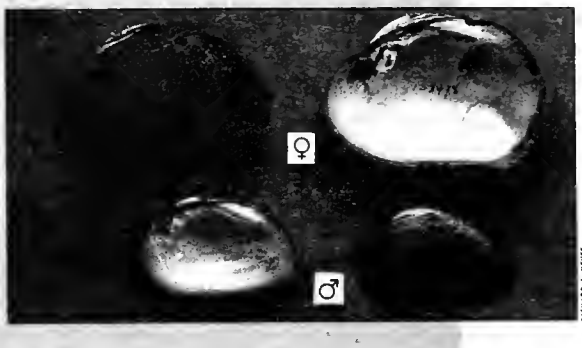
An animal population that has been designated as "experimental/nonessential" receives a special level of protection under the Act. In national parks and national wildlife refuges, experimental/nonessential populations are generally given the same status as threatened species, regardless of whether the species as a whole is listed as endangered or threatened. Critical habitat designation is not authorized under the ESA for experimental-nonessential populations.

The best-known cases in which this status has been used are the reintroductions of the endangered red wolf in North Carolina and the threatened gray wolf in Idaho and in Yellowstone

Endangered Species Case Study

Cumberlandian Combshell Mussel

(Epioblasma brevidens)



RICHARD J. NEVES

The southeastern United States holds the greatest diversity of freshwater mussels in the world. Spared the glaciers that scoured the Northeast and Midwest during the most recent Ice Age, mussels in the streams of the Southeast had millions of years of relative stability in which to diversify. Of the almost 300 species of mussel known throughout the United States, 269 occur in the Southeast. Of these, 127 can be found nowhere else in the world.

But these species and the diversity they represent are disappearing rapidly. The Cumberlandian combshell, with a thick, yellow-brown shell lined with greenish rays, is one of five species that the U.S. Fish and Wildlife Service has given Category 2 candidate status for addition to the list of endangered mussels in the Southeast. Thirteen percent of the region's native mussel species are believed already extinct, and most of the rest are declining sharply. Of the 56 species of mussels listed as threatened or endangered in the United States, 54 are in the Southeast. With only 25 percent of North American freshwater mussel species in stable condition, freshwater mussels are among the continent's most imperiled animals.

Populations of the Cumberlandian combshell have declined as a direct result of deteriorating stream quality. Silt eroding from agricultural fields smothers the mussels or covers them completely. The fine silt also fills in the tiny spaces in gravel stream bottoms, ruining them for use by juvenile mussels. Pollution from stripmining, coal washing and suburban runoff has diminished water quality in the region, taking a heavy toll on mussel populations.

Native mussels also are threatened by invading species such as the prolific zebra mussel, introduced from Europe into the Great Lakes in 1986. Zebra mussels rapidly encrust the shells of native mussels, along with the surfaces of any other solid objects they encounter, and have been blamed for wiping out some 20 percent of the mussels native to the Illinois River. Stowing away on the hulls of commercial and recreational boats, the tiny zebra mussels have already spread as far south as the Tennessee and Cumberland River systems, where they are

Cumberlandian Combshell Mussel (Continued)

expected to cause even greater damage.

Most damaging for the combshell has been the direct alteration of the region's streams after 50 years of dam building by the Tennessee Valley Authority and the Army Corps of Engineers. Throughout the Southeast, dams and flood-control projects have inundated some areas and drained others, fragmenting mussel populations into isolated pockets. Sessile animals like mussels cannot just move to a new location once stream conditions become unfavorable. Instead, entire populations are wiped out. The Cumberlandian combshell now survives only in small portions of the Tennessee and Cumberland River basins in Kentucky, Tennessee and Virginia.

Freshwater mussels are a prime indicator of the health of the Southeast's aquatic ecosystems. The same conditions that produced such diversity in mussels also gave rise to unique native species of fish, snails and crayfish, all now declining.

Sadly, aside from documenting the losses, not much is being done to bring back the mussel populations. The few species that are actively managed are those that, ironically, are sufficiently adapted to current stream conditions to allow commercial harvesting. In general, hardly enough money is being allocated to mussel programs even to monitor their status, much less to promote recovery. As development accelerates throughout the Southeast, a unique part of the world's natural heritage is in danger of being lost forever.

National Park. Ordinarily, private landowners cannot chase an endangered species such as the red wolf off their land or away from their livestock because Section 9 of the ESA prohibits "harassing" of listed animals. However, in both the red and gray wolf cases, the animals that were released were designated experimental/nonessential, allowing landowners to kill individual wolves caught preying upon livestock. This designation helped reduce public opposition to wolf reintroductions by giving landowners some control over problem animals.

While the experimental/nonessential designation reduces ESA protections, it can be an invaluable tool in gaining public support. Defenders believes that this special status can facilitate species recovery in appropriate circumstances. Without the support of local people, programs such as wolf reintroductions would fail.

Structured Flexibility

Perhaps the most remarkable and least known aspect of the ESA is its flexibility. This flexibility allows for many federal, state and private actions that benefit both people and wildlife species. Indeed, the Clinton administration has made many regulatory improvements under the Act without Congress amending a word of the law. Examples of these improvements include: increased cooperation with states; use of independent scientific opinions for listing and recovery actions; use of sound scientific criteria for listing and recovery; enhanced interagency and interdisciplinary approaches to consultation and ecosystem management; clarification of which

Endangered Species Case Study

Red Wolf

(Canis rufus)

STEVE MADSEN/U.S. FISH AND WILDLIFE SERVICE

The red wolf was put on the federal endangered species list in 1967. Once ranging throughout the southeastern United States and west into Texas, red wolves were persecuted relentlessly by farmers, ranchers and hunters who mistakenly believed that they posed a significant threat to livestock, deer and humans. They were also targeted by the federal predator control program. In 1980, the red wolf officially was declared extinct in the wild.

A cinnamon-colored animal, the red wolf is a smaller and more slender cousin of the gray wolf. Like the gray wolf, the red wolf has long been shrouded in myth and superstition. Stories were told of bloodthirsty wolves preying on livestock and children. The red wolf actually is a shy, elusive animal that even more than the gray wolf seeks to avoid human contact. White-tailed deer and raccoons comprise most of the red wolf's diet. The wolves rarely take domestic animals. They are social animals that generally form pair bonds for life. Family groups, or packs, are comprised of the adult pair and offspring of one or two seasons.

To forestall the red wolf's extinction, the U.S. Fish and Wildlife Service captured the remaining wild individuals in the 1970s. By 1987, enough animals had been bred to attempt reintroduction into the wild. The red wolf recovery program initiated the first reintroduction in the United States of a species completely extinct in the wild. However, the program is similar to other recovery endeavors in the resistance it has faced from a handful of vocal opponents. These adversaries, mostly local farmers and hunters, mistakenly feared that wolf reintroduction would hurt livestock and game animals.

Red wolves have been released in Alligator River National Wildlife Refuge and Pocosin Lakes National Wildlife Refuge in northeastern North Carolina and in Great Smoky Mountains National Park on the North Carolina-Tennessee border. This spring, an estimated 50 or 60 wolves — most born in the wild — were roaming the two wildlife refuges and neighboring lands belonging to cooperating corporations and individuals. A recent survey by North Carolina State University found majority support for red wolf reintroduction in four of the five counties in the vicinity of the refuges.

But the red wolves are far from being out of danger. A vocal anti-wolf faction recently became active in North Carolina. On January 1, 1995, a North Carolina law allowing the trapping and killing of red wolves by private landowners took effect. This statute directly contravenes the federal Endangered Species Act. It may provide unfortunate encouragement to local people antagonistic toward the red wolf. The protection of the red wolf must continue if the species is to recover.

activities constitute a "take"; facilitation of species recovery with plan deadlines; and increased participation by relevant stakeholders, such as private landowners and local governments.

Contrary to common political rhetoric, economic impacts are explicitly allowed to be considered under the ESA for all significant regulatory management decisions, including critical habitat designations, take prohibitions and consultation procedures. In fact, the only procedural step in which economics is not allowed to play a part during ESA implementation is listing. The rationale for relying solely on science for the listing process is that the United States at least needs an accurate inventory of its threatened and endangered species. Policy decisions on how best to protect listed species may then be based on sound science, tempered by consideration of economic and other real world impacts. In any event, listing itself does not mandate any one particular management approach. Listing merely sets into motion regulatory requirements that explicitly allow economic balancing.

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NOTES

1. U.S. Department of the Interior, Fish and Wildlife Service, *Endangered Species Technical Bulletin* 20(3) (May/June 1995), p. 24.
2. U.S. Department of the Interior, Inspector General, *Audit Report*, September, 1990.
3. The scope of these regulations appears to be limited to protecting threatened species, not authorizing further take. See *Sierra Club v. Clark*, 755 F.2d 608 (8th Cir. 1985).
4. *See* 50 C.F.R. § 17.3. Harm in the definition of "take" in the Act means an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.
5. 639 F.2d 495 (9th Cir. 1981).
6. No. 92-5255 (D.C. Cir. March 11, 1994).
7. Michael J. Bean, *The Evolution of National Wildlife Law* (New York: Praeger Publishing: 1983), p. 335.
8. World Wildlife Fund, *For Conserving Listed Species, Talk Is Cheaper than We Think*, 2 ed., 1994.
9. *See* "Saving the State's Lifeblood: That Historic Water Accord," *Los Angeles Times*, December 20, 1994; 59 Fed. Reg. 810 (January 6, 1994).
10. U.S. Department of the Interior, Fish and Wildlife Service, *Report to Congress: Endangered and Threatened Species Recovery Program*, 1992.
11. Jeffrey Cohn, "Defenders of Biodiversity," *Government Executive National Journal*, April, 1993, pp. 18-22.
12. For a more in-depth discussion of how recovery plans should be improved, see Tear, T. H., J. M. Scott, P. H. Hayward, and B. Griffith. 1995. Recovery Plans and the Endangered Species Act: Are Criticisms Supported by Data? *Conservation Biology* 9:182-195.

SECTION THREE

Recommendations for Improving The Endangered Species Act

During the last several years, conservationists have called upon Congress to strengthen the Endangered Species Act (ESA). At the same time, many opponents of the Act who believe the law is inefficient and costly have urged Congress to alter it in ways that would severely weaken it. While these two sides may seem mutually exclusive, in fact some proposals to make the ESA more effective also will improve its efficiency, thus simultaneously satisfying both sides in the reauthorization debate. The following recommendations would serve the overarching goal of making the Act more effective in conserving species while enhancing flexibility to deal with specific economic concerns.

Expand the Role of Science

To measure accurately the need for endangered species protections, policy makers must understand the social and environmental problems that stem from widespread extinctions. This understanding depends on reliable scientific research on vanishing species and on the causes of extinction. Defenders suggests the following measures to expand the role of science in implementing the ESA.

Create a National Commission on Species Extinction

Congress or the President should establish immediately a National Commission on Species Extinction to investigate scientifically the urgency of the endangered species issue. This commission would complement the Bush administration's Science Advisory Board, which in 1990 identified species extinction and habitat loss as two of the planet's most pressing environmental challenges. The commission also would complement a recent National Research Council report that evaluates the effectiveness of the ESA in achieving its scientific mission.[1] The commission should:

- Review the scientific basis of the original ESA legislation and rigorously review and evaluate data on trends in species extinction, population extirpation and related considerations.
- Determine the quality of existing scientific data on extinction and investigate the implications

of species loss for human welfare.
• Communicate its findings to the nation's decision-makers and the general public.

Use Science to Set Priorities

Several critics of the ESA have suggested that not all the species that the law protects are equally worthy of protection. This view is premised on a political valuation of species rather than on a scientific valuation. However, politics is a poor guide for making decisions about scientific issues. Political interference in ESA implementation has weighted recovery work toward a few large, popular species and led to the neglect of other, less visible but no less ecologically important species. Politics also has hindered the recovery process, prolonging the expense of conserving listed species such as the Mexican gray wolf.

Science should play the pivotal role in ranking species for protection. In general, keystone and other species critical to ecosystem character and health should receive highest priority regardless of their public appeal. However, because scientific knowledge of the ecological importance of individual species is often limited, recovery efforts must err on the side of caution.

Ensure Adequate Peer Review

During the last two years, the U.S. Fish and Wildlife Service and the National Marine Fisheries Service have announced a series of administrative changes to help ensure that sound science is applied to ESA implementation. These changes include peer review for all listing and recovery plan actions and a mandate that ecosystem and multi-species considerations be accounted for in the listing, consultation and recovery processes. These changes should be incorporated into the Act. Since the intricacies of ecosystems and the interrelationships between organisms within those ecosystems are complex, management actions relating to ecosystems also should be peer-reviewed.

Encourage Work of the National Biological Service

Ecologically appropriate management of public lands administered by the Department of the Interior is crucial to the survival of a large percentage of endangered species as well as to the survival of many nonlisted species enjoyed by both nonconsumptive and consumptive wildlife users. Long-term research and data collection that support such management are conducted by scientists of the National Biological Service (NBS), an agency created in 1994 to tabulate the distribution and status of the nation's wild species. The NBS was created by combining research units from various Interior Department agencies, a move intended to cut costs, increase government efficiency and improve the government's ability to collect important scientific information.

The new congressional majority has signaled an intention to disband the NBS, primarily out of concern that identifying areas where vanishing species remain will hinder business. In fact, however, knowing where species in danger of extinction exist will help in the design of projects that better integrate the interests of both

business and the wild environment. A scientifically sound inventory of the nation's biological wealth is critical to creating these economically viable conservation programs, and the work of the NBS is vital to establishing that inventory. Improving the nation's ability to bring science and economics together requires expanded and dependable funding and staffing for research and data collection.

Create Mechanisms for Technical Assistance

In many cases, hostility toward the protection of listed species is based on misunderstanding. Landowners are often under the misconception that acknowledging the presence of a listed species invites heavy penalties and restrictions. The fear and indignation that a landowner may feel upon discovering a listed species on his or her property often is manifested in attempts to change the habitat in ways that will force the species off the land. For example, the gopher tortoise is found in warm, sandy pine forests in Florida, Alabama, Georgia and South Catolina. Developers have been known to fill gopher tortoise burrows with concrete and to pave them ovet, harming not only the tortoises but also the many other animals that live in the holes, such as indigo snakes. The gopher tortoise is a candidate for listing partly because its habitat is disappearing and partly because the reptiles have been needlessly killed by worried developers. The timely provision of information and technical assistance could help prevent situations such as this and could even reduce the need to list species.

Scientifically and economically feasible solutions to conflicts between landowners and wildlife are available and could be improved. For example, Congress should fund FWS field technicians and representatives who can provide sound species and habitat advice to landowners. Creation of an ombudsman's office or a similar office of technical assistance could help resolve many conflicts by providing accurate and timely information.

Reduce the Need for Listings

Congress should expand ESA protections to keep species from declining to levels that require listing. This can be done by developing and implementing management plans before species require listing. Sections 2(c)(1) and 7(a)(1) should be amended to require federal agencies and states to conserve all species. Section 5 of the ESA should be amended to authorize cooperation among federal agencies and the states in protecting all naturally occurring wildlife species, inventorying all species and habitats in the nation and identifying and protecting keystone and umbrella species, which serve as indicators of broadet ecosystem health. Taking preventive conservation measures can preclude the need for more regulatory safeguards. For example, the Gap Analysis Program (GAP) uses satellite and land maps to identify "gaps" in habirat protection — particular types of habitat that have been little protected or even left unprotected under present land-management systems. Identifying these gaps allows managers

to target conservation actions where they are needed most.

Provide Incentives for Private Landowners

Because approximately 70 percent of all currently listed species spend at least part of their existence on private land, Congress should provide incentives that encourage private landowners to conserve species. Indeed, one major complaint about the ESA is that not only does the law fail to provide incentives for endangered species stewardship on private lands, but it also creates major disincentives. To understand this issue, we must visit the roots of the controversy: the much-argued conflict between economic growth and ecological well-being.

Because the purpose of much private land ownership is to produce economic return, it is essential that Congress develop economically feasible mechanisms for preserving the biotic community. Properly designed economic incentives would not reward private landowners for doing what they are required to do by law, but would offset burdensome or inequitable costs of private conservation efforts.

Potential for economic incentives under the ESA can be broken down into four categories: voluntary incentives, dedicated funds, tax incentives and credit systems.

Voluntary incentives are perhaps the easiest to implement, because they require no legislative changes and are the result of voluntary efforts on behalf of endangered species. For example, the Wisconsin Bureau of Endangered Resources enrolls private landowners in a voluntary species and habitat protection program. Fifty-seven landowners have agreed to "make every reasonable effort" to avoid activities detrimental to species living on their properties and to notify the bureau of any significant changes in the health of such species or their habitat. In return, each landowner receives a certificate of recognition and a watercolor of the species being protected.

Dedicated funds use private or public money to pay landowners to perform or abstain from certain actions. A prime example is Defenders of Wildlife's Wolf Compensation Fund, which reimburses livestock owners for verified losses to wolves and, with financial rewards, encourages private landowners to allow breeding wolves on their property.

Dedicated funds also might finance initiatives that restrict land use, such as fee-simple purchases or purchase of restrictive easements. Another approach could include funding to encourage small private landowners to participate in regional conservation efforts.

Tax incentives operate on the premise that private landowners can sometimes manage habitat more cost-effectively than can federal or state governments. Examples of such incentives include income-tax credits for expenses attributable to management of listed species and property-tax credits for landowners committed to temporary or permanent land-use restrictions. Some tax incentives could be developed within the ESA, but most would require modifications

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of either the income-tax or property-tax code.

Credit systems involve a tremendous range of possibilities and opportunities but are perhaps the most demanding to design and administer. They tend to work best where a sufficient baseline of biological data exists and urban development pressures are strongest (for example, southern California). Examples of credit systems include tradable development rights and mitigation banking, in which land developers are allowed to develop sensitive lands in exchange for preserving habitat elsewhere. Most of these schemes involve complicated habitat-evaluation systems that strive to ensure that protected or mitigated properties have a higher ecological value than those destroyed.

In the 103rd Congress, S. 921, an ESA reauthorization bill sponsored by Senators Max Baucus (D-MT) and John Chafee (R-RI), and H.R. 2043, a reauthorization bill sponsored by Representatives Gerry Studds (D-MA), James Saxton (R-NJ) and John Dingell (D-MI), and cosponsored by other notable representatives including Newt Gingrich (R-GA), contained economic incentives provisions. Perhaps the most promising was the "Habitat Conservation Planning Pilot Project" contained in Section 8(d) of H.R. 2043, which would have instructed the Secretaries of the Interior and Commerce to seek and approve a private, conservation-based incentive plan and report to Congress on its results. The prime benefit of this pilot approach was that it would have given the federal government significant flexibility in testing incentives without unduly hindering its ability to maintain a strong species conservation program.

Incidental take permits for such a pilot program would be authorized in one of two ways: under the existing Section 10(a) habitat conservation plan process, discussed earlier, or pursuant to a new ESA Section 13 contained in the above bills. This new section would seek to prevent HCPs from being stymied by additional species listings in the affected habitat. It would do so not only by authorizing conservation plans for proposed and listed species, but also by establishing a revolving and matching loan fund to support future plans. H.R. 2043 and S. 921 also would have granted federal assistance directly to private landholders who conserve listed species and those proposed for listing and proposed species, provided that no taking occurs under ESA Section 9 and that the anticipated action is consistent with other federal law.

Some private landowners are becoming hostile toward the ESA because they are concerned about government infringement on their property rights. Some see regulatory restrictions but no benefits in conserving threatened and endangered species. They believe that any measures that they have to take to protect listed species contribute to a decline in the value of their property and therefore constitute a taking of their property as defined under the Fifth Amendment to the Constitution. Some elected officials, particularly those financed by large industries inimical to federal regulation, are seeking to

expand Fifth Amendment protection of private property to such an extreme that government zoning and other regulations that protect the quality of American life would be destroyed.

In fact, solutions to small landowners' concerns about endangered species can be found within the present ESA reauthorization process and within related legislation, such as the 1995 farm bill. Attempts to meddle with more than 200 years of constitutional jurisprudence via Fifth Amendment "takings legislation" should be vigorously opposed.

The following recommendations concern incentives that would encourage wildlife protection on private lands:

• Design programs to provide voluntary incentives, such as: shortening and streamlining the Habitat Conservation Plan process, emphasizing the long-term savings associated with wildlife habitat conversion and creating reward programs for outstanding private land stewardship.

• Enact a "Habitat Conservation Planning Pilot Project" provision similar to that proposed in H.R. 2043 in the 103rd Congress.

• Encourage creative use of mitigation banking and tradable development rights as long as there is a net gain for species protection through habitat purchase, restoration of degraded lands or similar mechanisms.

• Change eligibility criteria for Conservation Reserve Program monies under the farm bill to prioritize payment for properties with habitat for listed and candidate species.

• Alter the tax code to reward private landowners for responsible stewardship and for preserving large tracts of land from generation to generation.

• Provide funding for private-landowner and state-government participation in regional habitat conservation planning.

For a discussion of the wide range of proposals in this area, see Defenders' 1993 publication *Building Economic Incentives into the Endangered Species Act.*

Increase the Role of States

State governments traditionally have been the chief stewards of wildlife within their borders. The federal government generally has intervened only to protect imperiled species, manage federal lands and enforce international agreements. One way to encourage effective, proactive federal conservation strategies is to encourage states to assume greater responsibility for protecting threatened and endangered species. States are often the greatest engines of governmental evolution, particularly in the environmental arena.

Section 6 cooperative agreements under the ESA provide mechanisms for the transfer of management authority from the federal government to state wildlife agencies. Although such transfers generally have been limited to scientific research, recent efforts to increase state cooperation and participation in species management — such as the black-footed ferret project in Wyoming and California's Natural Communities Conservation Plan — show promise. These efforts have been predicated on the belief that state resource managers often have the best scientific and financial

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Endangered Species Case Study

Coastal California Gnatcatcher

(Polioptila californica californica)

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The coastal California gnatcatcher, a small, slate-blue member of the thrush family, has been the focus of much controversy for several years. The bird lives on a portion of the remaining 400,000 acres of undeveloped California coastal sage scrub plains that once extended along the entire southern coast of the Golden State. Now fragmented by housing developments and golf courses, the coastal scrub, home to roughly 100 sensitive species of plants and animals, has been reduced to 17 percent of its original range. Conservation of the coastal California gnatcatcher and its habitat are crucial to the survival of these species and the ecosystem as a whole.

In 1992, 18 days after California's Fish and Game Commission refused to list the coastal California gnatcatcher under the state's endangered species law, the U.S. Fish and Wildlife Service announced plans to propose the songbird for federal listing as an endangered species. This announcement resulted in an uproar from land developers hoping to sell tracts of remaining undeveloped coastal scrub and from the Building Industry Association of Southern California and two private agencies planning to build the San Joaquin Hills Toll Road. If built, this road would destroy 155 acres of coastal sage scrub and fragment the greatest remaining expanse of scrub habitat.

In March, 1993, FWS designated the gnatcatcher as threatened instead of endangered, enabling the Secretary of the Interior to invoke a special rule allowing modification of certain areas of gnatcatcher habitat. Under Section 4(d) of the Endangered Species Act, the Secretary can permit the incidental take of listed species and modifications of habitat as a tradeoff for conservation measures initiated elsewhere. Earlier biological research done on the coastal sage scrub, part of California's Natural Communities Conservation Planning Program (NCCP), was used to help plan a network of protected areas, thus enabling both habitat protection and economic development. Defenders supports the use of Section 4(d) for such purposes, but believes that all incidental take must be authorized by permit.

California Gnatcatcher (Continued)

Still not satisfied with federal and state measures, the Building Industry Association of Southern California and other plaintiffs filed suit against the federal government, claiming that the data used to determine the gnatcatcher's threatened status had not been made available for public review (though this is not mandated by law). A U.S. District Court initially ruled against the listing but then reversed itself, allowing the Department of the Interior to reinstate the gnatcatcher as threatened. The effort to save the coastal California gnatcatcher has proved to be the catalyst for a new approach to saving endangered species. Despite the present uncertainties, the federal-state NCCP for the coastal California gnatcatcher might prove a model for settling species conservation controversies throughout the United States and a demonstration of the flexibility of the Endangered Species Act.

resources to manage local habitat.

In order to address localized threats to listed species and their habitats, much of the authority now vested in the federal government could be effectively delegated or shared with state governments, provided appropriate safeguards have been taken. While many activities may be accomplished through Section 6 of the ESA as now written, cooperation with states should be reexamined and more specifically delineated. In particular, Congress, by authorizing cooperative agreements with broader powers, should make explicit the duties of states in implementing the ESA. When considering which actions are appropriate for state agencies, however, it is important to remember that all states must be held to the same federal standards.

Examples of appropriate state actions are:

• Species Management. Although listing of species must remain within the scope of the federal government, much of the primary species management could be transferred to state agencies. Proactive efforts on the state level could even help prevent federal listings.

• Recovery Planning. Under the ESA, state agencies already are involved heavily in the preparation and implementation of recovery plans. Because recovery plans recommend a range of actions to benefit a species, such as research, protection of critical habitat, captive-breeding programs and reintroduction efforts, qualified state agencies should also have the power to plan future recovery activities. However, it is crucial that the federal government retain oversight of recovery plans.

• Take Permitting Authority. One existing authority that could be appropriate for transfer is incidental-take permitting and habitat conservation planning under Section 10. Particularly in those instances when small landowners must obtain an incidental-take permit, state agencies might be better equipped to address species conservation and appropriate land use.

In expanding the scope and authority of cooperative agree-

ments, Congress must ensure proper implementation. First, implementation of cooperative agreements must be secured through strong federal oversight. Second, citizens must retain their ability to challenge both the substance and enforcement of cooperative agreements. Third, in order to ensure effective transfer and implementation of ESA authorities to state agencies, Congress should increase the funding appropriated to the states under the ESA. These steps not only would go a long way toward allowing states to experiment with conservation approaches to determine what works best, but also probably would result in more direct and effective species protection.

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Promote Regional Ecosystem Management Planning

To prevent ecosystem fragmentation, a regional planning mechanism is needed to coordinate interstate ecosystem management. The goals of regional ecosystem planning would be to identify key habitats, to provide the appropriate level of protection for ecologically important areas and to guide human development toward the least sensitive areas. General guidelines for habitat conservation and multi-species management could be determined through a cooperative effort of state and federal governments.

Individual states could administer the plans through the authority transferred in their cooperative agreements. A regional ecosystem-management plan would maintain each state wildlife program's flexibility while guaranteeing that whole ecosystems are effectively protected. This type of regional planning is being tried in California to manage coastal sage habitat and among western states to manage grizzly bear habitat.

Provide Long-Term Funding

One of the main complaints of all parties dealing with endangered species is inadequate funding. Developers state that they are willing to bear their fair share of mitigation costs but do not have sufficient money to cover what they view as society's costs. Small landowners complain that they do not have money to participate effectively in habitat conservation planning. FWS complains that it does not have the staffing available to organize, administer and monitor the planning process. States argue that they do not have sufficient resources to take preventive action before the urgency of recovering listed species occurs. Conservationists point out that current funding is not enough to expedite the listing process and recover imperiled species.

Appropriations for endangered species and habitat protection need to be increased. However, a system also should be developed that places an appropriate financial burden on those who seek to develop or use ecologically sensitive land. Because endangered and threatened species are the result of a long history of ecological degradation, saddling present users with all the costs of species protection would be unfair. The search for an equitable and effective solution to funding necessary mitigation should be a

high priority. Several promising options exist, and they are discussed next.

End Harmful Subsidies

Billions of dollars of public subsidies for development are draining the federal treasury and harming wildlife species and biodiversity.[2] Examples include below-cost livestock grazing, mining operations and timber extraction on the almost 650 million acres of land (roughly a third of the U.S.) owned by the public and managed by the federal government.

Livestock Grazing At a Glance

DAMAGE TO WILDLIFE:

- Negatively impacts 25 percent of endangered and threatened species in the United States.
- Destroys and degrades riparian habitats.

ECONOMIC IMPACTS:

- Reduces hunting, fishing and recreational opportunities.
- Estimated lost future revenue will exceed $100 million per year in addition to the more than $1.2 billion loss to taxpayers since 1985.

The most widespread of the federally subsidized, private commercial practices operating on public lands is livestock grazing, which occurs on approximately 270 million acres of rangeland managed by the Bureau of Land Management (BLM), U.S. Forest Service and FWS. For the privilege of feeding their livestock on public rangelands, ranchers pay only a fraction of what they would if their animals grazed on private property. Since 1980, the average fee paid by western ranchers to graze on private land has increased from $7.53 to $10.03 per "Animal Unit Month" (AUM) — the amount of forage needed to sustain a cow and her calf or five sheep for a single month. Meanwhile, fees for grazing on federal lands have decreased 32 percent over the same period, from $2.36 to $1.61 per AUM.

Despite the Clinton administration's attempts at reform, federal grazing fees are now at their lowest since 1988.[3] In 1993, grazing fees from these lands took in only $28 million dollars, barely 10 cents per acre. These fees are not even sufficient to pay the grazing program's administrative costs. According to a report by the Inspector General of the Interior Department, in 1990 BLM collected $1.81 per AUM from permittees while its program's operating costs were $4.59 per AUM, resulting in a net loss of $31 million.[4] In a separate study in 1992, the House Government Operations Committee calculated that the federal government had lost $1.2 billion since 1985 because of below-cost grazing fees.[5]

In addition to its significant economic costs, livestock grazing exacts a terrible toll on wildlife. Poor grazing management on federal land contributes directly to the decline of roughly a fourth of all species listed under the Endangered Species Act,[6] as well as harming many other species. Grazing changes the species composition of native biological communities, altering patterns of ecological succession and interfering

with normal nutrient cycling.[7]

Habitat degradation is most pronounced in riparian (river and stream) areas, where cattle strip banks of vegetation, leading to erosion that degrades both terrestrial and aquatic ecosystems. A large proportion of vertebrate species in the Southwest depend on riparian areas for at least part of their life cycles. Many fish species are declining because of the loss of quality riparian habitat. Fiscally responsible management of these public resources would generate more than $150 million annually, which should go directly toward biodiversity protection.[8]

United States mining policy is equally at odds with both the nation's economic and conservation goals. The antiquated General Mining Law of 1872, signed by President Ulysses S. Grant, gives hard-rock mining companies first claim on federal lands and then allows them to extract the minerals without paying the government any royalty whatsoever. Under the more than 600 mining-patent applications pending in 1994, the federal government will sell an estimated $34 billion worth of minerals for less than $1 million.[9]

Not only is the environmental damage caused to public lands by mining techniques shocking, but the law also passes the cleanup tab right back to the taxpayer. According to the Environmental Protection Agency, 52 designated Superfund sites, including some of the largest in the nation, are either abandoned or active mines.

Threats to wildlife come from degraded or poisoned riparian habitat, toxic-waste dumps and cyanide ponds. For example, a northern Idaho gold mine has been leaking cyanide into a tributary of the South Fork Salmon River, poisoning the breeding grounds of threatened chinook salmon.[10] A Canadian corporation recently proposed a gold and silver mine right outside Yellowstone National Park, threatening the protected habitat of many species, including the threatened grizzly bear.[11]

Mining companies have argued that any change in the Mining Law would force them out of business, costing thousands of jobs, yet these same companies generally pay royalties for their activities on private lands. Moreover, oil and natural-gas industries operating on public lands pay a 12.5 percent royalty to the federal government. Why should hard-rock mining be treated differently? The United States also loses millions of dollars yearly from below-cost sale of public-land timber. The Forest Service routinely sells timber to private logging companies for far below the fair market value of the timber — or worse. According to a 1990 General Accounting Office report, almost 40 percent of timber sales studied were offered at a price below the cost of preparing and administering the sale. The Forest Service's own accounting system reveals that 82 of the 120 national forests lost money from timber sales in 1992. These figures do not include the major cost of constructing thousands of miles of logging roads to make the timber accessible. Nor do the figures factor in the economic cost of depleting trees, soil, water and wildlife.

Like grazing and mining, poorly managed logging activities can have a devastating impact on wildlife populations. Approximately 3,000 species of animals and 10,000 species of plants are found in national forests, including at least 260 threatened and endangered species.[12] Logging puts these species in heightened jeopardy because timber harvesting often destroys quality wildlife habitat.

Hard-Rock Mining At a Glance

DAMAGE TO WILDLIFE:

- Cyanide leaches into waterways, destroying fisheries.
- Cyanide-tainted waste ponds kill small birds.

ECONOMIC COSTS:

- More than 50 mining sites have been designated as Superfund sites.
- Costs taxpayers $4.25 billion annually in lost revenues.

Overall, according to biologists, logging on federal lands contributes to the decline of 14 to 17 percent of all species listed under the ESA and was directly responsible for the listing of several large forest mammals, such as the grizzly bear and woodland caribou.

Poorly planned clearcuts and logging roads also lead to changes in soil hydrology and nutrient cycling. Resulting erosion can clog trout and salmon streams with silt, harming fish populations and often depleting fisheries hundreds of miles away. Although the Forest Service and its chief, Jack Ward Thomas, deserve credit for recent attempts to implement ecosystem management in a way that benefits wildlife, logging continues to threaten some species. For the lynx, wolverine, marten, fisher and other species, survival depends in part upon the existence of uncut forests.[13]

Expand Existing Funding Programs

If the ESA is ever to succeed in fully accomplishing its mission, new funding sources will be needed. Funding for species conservation could be derived from the Land and Water Conservation Fund (LWCF), dedicated natural-resource damage fees, the Fish and Wildlife Diversity Funding Initiative, public user fees and increased concessionaire charges.

Billions of unused dollars exist in the LWCF reserve,[14] generated by a tax on offshore oil production and federal property sales. These funds were intended for use each year in purchasing conservation rights to private property, but instead are accumulating. Congress should direct that they be used to acquire conservation easements or, where that is not possible, fee-simple title to the country's most biologically important but unprotected lands. Protecting habitat before species become imperiled is the surest way to prevent further economics-versus-environment conflicts.[15]

Another funding option is natural-resource damage fees dedicated to species conservation. In many pollution-related litigation cases, fines are assessed on the basis of an estimate of the violation's or action's impact on

wildlife. The money is used to restore damaged habitat, among other things. Defenders recommends that fines for actions that destroy listed species and habitat be dedicated specifically to endangered species programs administered by FWS and NMFS.[16]

A proposed program, called the Fish and Wildlife Diversity Funding Initiative,[17] also shows promise for collecting substantial money for wildlife conservation. For years, hunters, fishermen and other consumptive users of natural resources have complained that they, through hunting licenses and taxes on firearms, fishing equipment and ammunition, have borne more than their fair share of conservation costs. Conversely, nonconsumptive users have complained that fish and wildlife agencies have focused too much on game species. To provide states with increased funding for conserving nongame species, Defenders, in cooperation with other conservation groups, has proposed putting a user surcharge on outdoor-recreation equipment. This minimal user fee would be assessed at the wholesale level on products such as tents, binoculars and photographic film. This initiative could generate about $300 million annually and substantially aid states in funding nongame conservation.

Another option that should be considered seriously is an increase in public user fees. By market standards, visitation fees at national parks, forests and wildlife refuges are low. Given that 83 percent of Americans consider themselves environmentalists, it seems likely that they would prefer higher user fees to lessening protection for endangered species.

Concessionaire fees at federal wildlife facilities also should be increased. From an accounting perspective, restoring endangered species, such as the gray wolf, on public lands, is analogous to capital improvements in the business world. For example, reintroduction of the gray wolf in Yellowstone and central Idaho is expected to bring an additional $20 million in tourist revenues to local businesses. Concessionaires who benefit should be willing to accept an increase in lease fees.

Together, these recommendations can generate hundreds of millions of dollars without raising income taxes. The additional funding can pay for increased scientific review, economic incentives for private landowners and an expanded state role in endangered species conservation.

Below-Cost Timber Sales At a Glance

DAMAGE TO WILDLIFE:

- **Roadbuilding fragments habitat, causing forest-interior bird species to decline.**
- **Soil runoff buries salmonid spawning beds and destroys aquatic habitat.**

ECONOMIC DAMAGE:

- **Decline of Pacific Coast salmon and steelhead fisheries adversely impacts regional economies.**

Close Existing Loopholes

Congress should strengthen a number of weak provisions that now allow unnecessary species harm. The reauthorized ESA should:

• Set statutory time limits for completing species recovery plans and specify in the plans the actions necessary to achieve recovery.
• Protect threatened and endangered species of plants and strengthen overall enforcement for listed plants.
• Eliminate the 60-day-notice requirement for any citizen suit involving an emergency that poses significant risk to the well-being of a listed species.
• Ensure that legal incidental take of species under Sections 4(d), 7 and 10 is fully mitigated and authorized by permit.
• Make it clear that any federal action that reduces a species' chance of recovery will be deemed to jeopardize that species under Section 7(a)(2).
• Specify that the reasonable and prudent measures established as conditions of incidental-take under Section 7 are mandatory and that failure to comply with such measures is a violation of the Act.
• Ensure that the cumulative effects of federal and non-federal actions are considered for all listed species to avoid incremental loss of habitat.
• Clarify that federal agencies should not participate in actions or projects overseas that would jeopardize listed species.

As the preceding discussion has shown, it is possible simultaneously to strengthen and improve the effectiveness of the Endangered Species Act while curing its perceived problems. To accomplish these goals, a series of shifts in policy direction is needed. First, science must be better used to improve the ESA's effectiveness and monitor its implementation. Second, incentives to promote good land stewardship by private landowners are needed. Third, the knowledge of state and local natural-resource-agency personnel should be better tapped to enhance species recovery and prevent listings. Finally, given the severity of biodiversity loss, additional funding must be made available to expand conservation activities at all levels of society. Together, the recommended changes in the ESA and related legislation not only will make the ESA work better, but also will reduce the need for it.

NOTES

1. *See* National Research Council, National Academy of Sciences, *Science and the Endangered Species Act* (Washington, D.C.: National Academy Press, 1995).
2. U.S. House of Representatives, Committee on Natural Resources and the Environment, *Taking from the Taxpayer: Public Subsidies for Natural Resource Development (1994).*
3. Tom Kenworthy, "Proposal to Raise Grazing Fees Is Sinking Slowly in the West," *The Washington Post,* January 19, 1995.
4. Elizabeth Losos et al., *Taxpayers' Double Burden: Federal Resource Subsidies and Endangered Species* (Washington, D.C.: The Wilderness Society, Environmental Defense Fund, 1993), p. 18.
5. *Taking from the Taxpayer,* p. 87.
6. Losos et al., p. 10.
7. *See, e.g.,* Thomas Fleischner, "Ecological Costs of Livestock Grazing in Western North America," *Conservation Biology* 8, no. 3 (1994): 629-644
8. "Managing the Federal Government: A Decade of Decline," Majority Staff Report, Committee on Government Operations, 102d Congress, 2d Session, December, 1992, p. 198.
9. Mineral Policy Center, *Golden Patents, Empty Pockets* (1994).
10. *Ibid.* p. 51
11. *Ibid.* p. 54.
12. Valerie Guardia, "Every Species Counts: Endangered Species in National Forests and Grasslands," *Endangered Species Technical Bulletin* 19, no. 4 (1994): p. 11.
13. *See* Leonard F. Ruggiero et al., *The Scientific Basis for Conserving Forest Carnivores in the Western United States* (Fort Collins, CO. U.S. Forest Service, 1994).
14. 16 U.S.C. Section 460(d), 4601-4 *et seq.* See also Federal Aid in Wildlife Restoration Act (Pittman-Robertson Act), 16 U.S.C. §§669-669i; Federal Aid in Fish Restoration Act (Dingell-Johnson Act), 16 U.S.C. §§777-777k; Fish and Wildlife Conservation Act (Non-game Act), 16 U.S.C. §§2901-2911.
15. *See* Rodger Schlickeisen, "Saving Species: A New Approach," *Defenders* (Spring 1993).
16. Defenders has drafted an amendment to ESA Sections 3 and 11 to achieve this.
17. 1980 Fish and Wildlife Conservation Act, 16 U.S.C. §§2901.

SECTION FOUR

The Future Of Biodiversity Protection

Congress created the Endangered Species Act (ESA) in response to a very real and frightening crisis — the rapid decline of myriad species. The Act is regulatory in nature because this crisis requires an immediate and decisive response. Now after two decades of intermittently controversial regulation, new flexibility is emerging in agency implementation. Also, during the current reauthorization cycle, the Act should be amended to modernize it. In addition, companion legislation is needed to strengthen preventive conservation measures and thus to diminish the necessity for listing altogether.

Such an overhaul of the nation's fundamental approach to wildlife conservation necessitates a look at past wildlife and natural-resource management in order to learn from our mistakes and to integrate into our land-management strategies the emerging lessons taught by the growing field of conservation biology. Only in this way will we become careful stewards of our biological resources and fulfill our obligation to future generations.

The recommendations in this report will make the Endangered Species Act work better, but they cannot remove the overall need for an Act that is fundamentally regulatory in nature. However, to reduce or even prevent the need for further species listings and related emergency recovery actions, we must:

- Acknowledge that past land-management strategies are flawed, and move from a symptom-oriented species model to a cure-oriented ecological model.
- Use sound scientific principles from conservation biology and genetics in setting long-term biodiversity goals.
- Use ecosystem management as our primary land-management tool to achieve long-term biodiversity goals.
- Accept that the present collection of protected lands is inadequate to produce long-term sustainability, and use emerging analytical tools such as gap analysis (described in an earlier section) to identify priority lands for conservation.
- Establish a quasi-public agency

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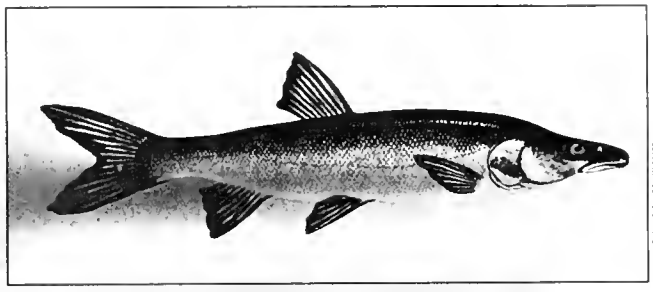
Endangered Species Case Study

Colorado River Squawfish

(Ptychocheilus lucius)



COLORADO DIVISION OF WILDLIFE

The Colorado squawfish, one of the first species listed under the Endangered Species Act, lives in the main stem of the Colorado River. Called the white salmon by local settlers, the squawfish is actually a giant species of minnow, historically reaching five feet in length and weighing more than 80 pounds. Dam construction and introduced game species have pushed the squawfish and the other large fishes native to the Colorado River to the brink of extinction.

In general, rivers in the American West do not have a high diversity of native fishes. For example, only 33 fish species are native to Arizona waters, as compared to 250 in Arkansas. The few fish native to the Colorado River, such as the squawfish, humpback chub, bonytail chub and razorback sucker, are equipped with large fins for negotiating the rapid waters, as well as small eyes and thick skin for protection from silt abrasion. Thanks to their special adaptations, these unique fish have thrived in the Colorado's naturally warm, cloudy waters for millions of years.

As it winds through Utah, Colorado, Nevada, Arizona and California, the Colorado River drains almost half of the southwestern United States. The dams and reservoirs along the Colorado provide electricity and drinking water for Los Angeles, San Diego and Phoenix and irrigate most of the cropland in Arizona, Utah and southern California. While these projects have made human life possible in some arid regions, they have also unnecessarily made life nearly impossible for native fishes. Better planning and design of dam and irrigation projects would have allowed both human society and native fish species to thrive.

Before construction of the dams, squawfish would migrate 150 to 200 miles upstream to breed in swift, shallow riffles. Offspring developed as they drifted back downstream. A half-dozen major dams now effectively prevent reproduction in squawfish populations below the Utah-Arizona border. Giant, 100-pound individuals have become the stuff of legends. A good-sized squawfish currently averages 15 to 18 pounds.

Colorado River Squawfish (Continued)

Dams also have altered permanently the character of the Colorado River, reducing it in some areas to little more than a series of slackwater pools. The waters, now cooler and clearer, have become ideal habitat for an estimated 45 species of fish. Sport fishermen have stocked the reservoirs with smallmouth bass, flathead catfish, brown trout and sunfish, all of which feed voraciously on the young of native fishes. Populations of the razorback sucker, for example, now consist almost entirely of individuals more than 40 years old. Although they reproduce successfully, all of their offspring are eaten by predators.

The same is true for the bonytail chub, now essentially extinct in nature except for a few individuals in Lake Mead. Anglers view remaining native fishes as "trash fish." In the 1960s, the poison rotenone was used in some areas to wipe out native fish populations and make room for sport fish.

Overall, biologists estimate that more than 70 percent of the fish native to the Southwest are threatened, endangered or already extinct. Almost all of Arizona's and Nevada's native fishes are listed under the Endangered Species Act. Cooperative squawfish recovery programs involving the U.S. Fish and Wildlife Service and state agencies in Colorado, Arizona and Utah are concentrating on the Colorado's upper basin, where long, undammed stretches allow the river to retain at least a shadow of its former character.

However, populations in the lower basin may be unsalvageable unless the original character of the Colorado River is restored. Dam outflows will need to be managed to mimic historic conditions, floodplain habitats must be reconnected to the main-stem river to allow seasonal flooding, fish passage must be restored in some areas, and the impact of nonnative fish species must be reduced. Given the region's growth rate and the increasing human demand for every drop of available water, these changes are unlikely to happen without significant political will.

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or entity to raise new funds to protect priority lands.

• Enhance and strengthen our position as a world leader in biodiversity conservation.

Land Management for Commodities

Historically, federal and state land-management agencies have emphasized commodity production to the point of excess. The Forest Service has focused primarily on increasing wood production, the Bureau of Land Management on maximizing grazing and other consumptive uses, and the U.S. Fish and Wildlife Service and state wildlife agencies on expanding the types and numbers of animals available for hunting and fishing. Management has sought to alter natural ecosystems in order to increase human use. Thus, federal hunters have extirpated wolves and other predators, even in national parks; foresters have replaced mature natural forests with short-rotation stands of genetically altered trees; and rangeland managers have removed shrubs from grazing land and poisoned prairie dogs, inadvertently bringing species such as the black-footed ferret and the swift fox to the edge of extinction.

Although ecosystems were

altered intentionally to increase production, the processes of production and harvesting harmed the natural ecosystems. In the Southwest, cattle and sheep grazing changed local vegetation from native bunch grasses and wildflowers to European and African weeds imported as living fodder. In turn, populations of native animals dependent on undisturbed grasslands plummeted. Now, many threatened and endangered species owe their predicament to habitat loss caused by grazing.

In New York's Adirondacks, lumbermen clearcut the species-rich mixed conifer and hardwood old-growth, prompting second-growth that lacks mature hardwoods. In much of the East, game managers have so augmented deer populations that the current levels prevent natural plant regeneration within the forests, and many wildflower species are becoming rare.[1]

The cumulative effects of managing public lands primarily for production have been profound, both for the survival of endangered species and for the sustainability of the natural resources. For example, 90 percent of the original old-growth in the Pacific Northwest has been lost and 214 salmonid runs are at risk of extinction in four western states. Western rangelands have been severely degraded by livestock overgrazing. More than half of BLM and Forest Service lands are now judged to be in only poor or fair condition.[2] And these management problems are being compounded by the spread of invasive exotic species. Public-land acreage the size of Montana is covered by an exotic weed, the leafy spurge, that is unpalatable to native species.

Biological and Ecological Models

To achieve economic and ecological efficiency, and to repair some of the damage from past management practices, resource managers must move away from the species model historically used and move toward an ecological model. For example, game managers in the Southeast are concerned about small predators attacking ground-nesting birds such as waterfowl. A typical response based on the species model would be to treat the symptom by removing foxes and raccoons. Under the ecological approach, managers would recognize that the top predator was missing from the system and take steps to restore the red wolf. Return of the wolf would not only help to reduce fox and raccoon populations, but also would help to control white-tailed deer populations, leaving more vegetative cover for the birds.

Need for More and Larger Reserves

Recent research indicates that species and entire communities of species need more space for long-term survival than previously thought. For example, Yellowstone National Park's 2.2 million acres are not enough to sustain a viable population of grizzly bears in the long term.[3] Similarly, the long-term survival of a particular plant community, such as mature redwood forest,

requires more than small preserves and scattered patches of old trees. Enough area of contiguous forest must be set aside so that all the natural-disturbance processes of fire and storm blowdowns can occur while leaving enough forest alive to recolonize the bare patches. A forest patch that is too small can be completely wiped out by a single catastrophe, with no survivors left to provide seeds or regenerate the community.

Impact of Habitat Fragmentation

Research also has shown that habitat fragmentation adversely impacts species. Ten thousand acres of forest fragments provide very different habitat from that of a 10,000-acre roadless forest. Fragmentation benefits a few common species, such as raccoons and cowbirds, that like clearings and forest edges, but it decreases the survival of species that depend on uninterrupted, deep forest. Deep-forest species that suddenly find themselves living at a forest edge along a new road or clearing suffer from excess light, wind and dryness and from increased predation by species such as coyotes and humans that hunt along edges.

Importance of Keystone Species

Although ecologists are still uncertain about which species can be removed from an ecosystem without critically impairing it, scientists have identified some species that are so ecologically important that their disappearance will trigger other species losses. For example, removal of prairie dogs from grasslands results in the loss of prey for black-footed ferrets and other carnivores; the loss of homes for snakes, burrowing owls and other small animals that live in prairie dog burrows; and the loss of soil fertility, which is enhanced when prairie dogs stir up soil nutrients. Some 160 species depend on prairie dogs for proper habitat.[4]

Value of Ecological Processes and Cycles

Humankind's alteration of flood and fire patterns, while well-intentioned, has done much to alter U.S. ecosystems. For example, the vegetation of longleaf pine ecosystems in the Southeast evolved under a regime of periodic fires. Suppression of fire allows dense undergrowth production that shades out many rare and unusual plants. Similarly, cattle-grazing at the wrong time of year damages the crowns of perennial bunch grasses and allows mostly exotic grasses to replace North American native grasses.

Promise of Ecosystem Management

As the scientific community and the federal agencies have become aware of these ecological factors, a new management orientation called "ecosystem management" has arisen. Although open to various interpretations, ecosystem management generally implies turning away from single-use, single-species management and turning toward integrated management designed to yield sustainable commodity production compatible with healthy natural ecosystems.[5] One result should be that fewer

species become endangered or threatened.

Sound ecosystem management will seek to maintain a balance between producing commodities and protecting important ecological processes. Logging, grazing, mining and other extractive practices need to be planned to minimize their impacts. This may result, for example, in cutting timber in patches to mimic natural blowdown or fire patterns and in removing cattle from pastures for limited periods to allow regeneration of vegetation.

Because ecosystem management is a recent concept, many implementation methods are just now being worked out. The first challenge is to identify ecosystem boundaries without getting sidetracked into debates on ecosystem definitions. Another challenge is to develop legal, administrative and other tools for facilitating cooperation among federal and state agencies and private landowners. This is critical because most ecosystems cross political and ownership boundaries.

Identifying Preservation Priorities

New analytical tools, such as gap analysis (discussed in Section Three) and other emerging technologies, indicate that public lands will prove inadequate for long-term conservation goals. As technologies develop and data bases grow through the efforts of the National Biological Service and others, they facilitate the identification of lands whose protection must be a priority if the nation is to have healthy, sustainable ecosystems.

Judging from preliminary analyses done by conservation biologists, and from rough extrapolation based upon the first state gap-analysis projects, the amount of unprotected land requiring protection could easily be in the hundreds of million of acres nationwide. Further, because of the relentless growth of population and wealth and the growing desire to escape from cities, accelerated rural development is rapidly raising the cost of acquiring habitat. Unless we take action quickly to protect at-risk habitat, the cost of doing so is likely to rise much faster than our ability to pay for it.

Conservation Finance Corporation

Although funding recommendations listed in Section Three could do much to help endangered species, they cannot slow the accelerating rate at which additional species are becoming endangered. Slowing that rate requires extensive new habitat protection. But given the limits of public funding, the only realistic option for bankrolling new habitat protection on a large scale may be an infusion of private money.

Satisfying habitat-protection needs with private funding may be daunting but not impossible. One model could involve the creation of a special new federal corporation or other government-sponsored entity. For discussion's sake, call this entity the Conservation Finance Corporation (CFC). The sole purpose of the CFC would be to raise and spend money to protect the nation's priority habitat lands. Once those lands have been pro-

tected though acquisition, conservation easements or economic incentives, the corporation would go out of business.

The corporation would receive some federal dollars — perhaps from new dedicated conservation-user fees or excise taxes as well as from established sources such as the Land and Water Conservation Fund. But the bulk of the organization's budget would come from its own fundraising efforts. The CFC would be permitted to seek major bequests and gifts from wealthy individuals and other entities and to raise money through the sale of "conservation heritage bonds." The bonds would be serviced and eventually retired by a predictable income stream from estate gifts (plus the forecast flow of income from dedicated taxes, fees and other predictable sources). The CFC thus would be able to sell bonds to raise funds to buy land or easements before rising real estate prices make such efforts impossible.

The CFC would be authorized to acquire lands vital to biodiversity conservation. Funding of these key acquisitions could occur through the CFC independently of the annual congressional appropriations process. Freeing the CFC of the political pressures that originate in the appropriations process should streamline the corporation's ability to accomplish its goals.

The CFC would not have land-management responsibilities. Areas acquired by the corporation would be transferred to the Fish and Wildlife Service. To assure that only scientific criteria were used to determine acquisition priorities, the corporation could work in conjunction with an independent scientific advisory panel established to set acquisition priorities. Such a panel could rely on data compiled by the National Biological Service. The panel also could provide input on the appropriate management of the existing federal estate as well as management of lands acquired by the quasi-public corporation. A federally chartered Conservation Finance Corporation with the functions outlined above could serve as a catalyst for accomplishing what is undoubtedly the nation's most pressing conservation challenge — protection of biodiversity. The entity's functions would be clearly focused on obtaining new resources for this important public purpose and on assuring that those resources are targeted to the most important projects. A mechanism such as the CFC could encourage the American public to make substantial funding commitments to saving the nation's biodiversity, thus significantly reducing the number of species that must rely on the ESA.

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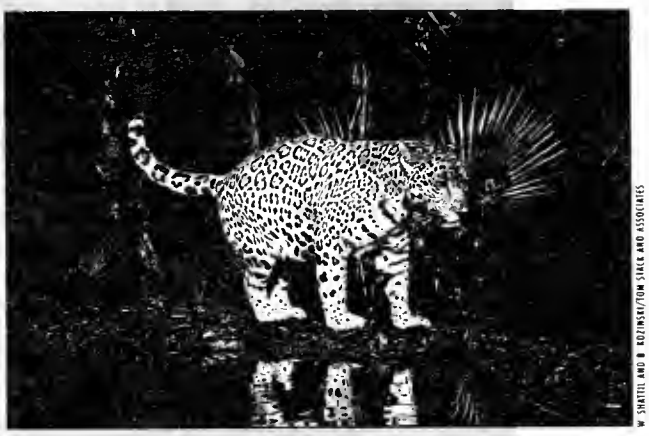
Need for U.S. Leadership in International Conservation

Because actions taken by other countries affect U.S. ecosystems, the ultimate challenge for conservationists is to apply sustainable ecosystem management and biodiversity protection around the globe. This task will grow increasingly difficult as the world's population expands, placing greater demands on dwindling natural resources. But success at this task is essential if the planet is to remain ecological-

Endangered Species Case Study

Jaguar

(Panthera onca)



W. SHATTIL AND B. ROZINSKI/TOM STACK AND ASSOCIATES

The jaguar, known for its distinctive spots, is the largest cat native to North America. In addition to Mexico and Central America, it historically was a resident of parts of Arizona, New Mexico, Texas and possibly California and Louisiana. Much of its U.S. habitat has been degraded by development, agriculture and livestock grazing, but jaguars still occasionally wander into the Southwest from Mexico.

The U.S. Fish and Wildlife Service in 1972 listed the jaguar as endangered, but the listing covered only jaguar populations south of the U.S./Mexico border. In the United States, the jaguar receives no protection under the Endangered Species Act. Consequently, visiting jaguars lose Endangered Species Act protection once they cross into the United States and regain it when they wander back into Mexico.

Biologists estimate that at least 64 wild jaguars have been killed in Arizona since 1900. At least 81 additional jaguar sightings have been reported to the Arizona Game and Fish Department, and similar reports and stuffed specimens have surfaced in New Mexico and Texas. In 1986, a young male jaguar was killed in the mountains of southeastern Arizona. In December, 1993, ranch hands reported seeing a large spotted cat in southern Arizona's Buenos Aires National Wildlife Refuge. Earlier that year the Arizona Game and Fish Department, using remote sensing cameras, sought to locate a jaguar reported near Tubac Presidio State Historical Park south of Tucson, but was unsuccessful, and a state biologist says tracks photographed there were made by a canid.

Like many large, solitary predators, jaguars cover an immense territory. Mexicans living in mountains 200 to 300 miles south of the Arizona border have reported that a breeding population lives there, and this might be the source of individuals crossing into Arizona. The species might seek to recolonize former U.S. habitat in the face of accelerating development in northern Mexico.

With the approval of the North American Free Trade Agreement (NAFTA) came plans for dozens of new highways and bridges in the border region, which is home to 300 rare and

Jaguar (Continued)

endangered species. This development will undoubtedly harm the area's biodiversity by destroying brush and riparian habitats, increasing air and water pollution and multiplying human presence. Free-trade incentives also are expected to escalate the illegal smuggling of protected animal parts (e.g., skins), one of the primary causes of the jaguar's decline during the mid-1900s. To offset these impacts, the Mexican government created several new biosphere reserves in northern Mexico in 1993. These areas will serve as corridors for disturbance-sensitive species like the jaguar, helping individuals to migrate north to more suitable habitat. In the eight U.S. national wildlife refuges near the border, potential jaguar prey such as deer and javelina remain abundant, and sufficient habitat remains for the cats to survive if protected. As the development pressures in northern Mexico increase, so will the number of jaguars crossing into the United States.

Although they lack federal protection, jaguars currently receive protection at both the state and international levels. Arizona's Game and Fish Commission prohibits the taking of jaguars, and Texas lists them as endangered, although no sightings have been reported for many years. Jaguars are classified as vulnerable by the International Union for Conservation of Nature and included under Appendix I of the Convention on International Trade in Endangered Species.

In July, 1994, following a lawsuit brought by two wildlife conservation groups, FWS finally proposed federal endangered listing for jaguars in the United States. By law, FWS must make its final listing determination by July, 1995. Defenders believes the jaguar deserves to receive the protection of the Endangered Species Act throughout its historic range, including the United States.

During the debates over NAFTA, many environmental groups recognized the potential conservation benefits of free commerce. Bringing attention to conservation issues, fostering new international partnerships and increasing Mexico's financial resources are essential steps toward guiding to sustainability one of the Earth's most ecologically diverse countries. The remaining question is whether the United States and Mexico will take the necessary steps to save the jaguar.

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ly healthy and perpetuate the wildlife and other natural resources that comprise each new generation's inheritance.

The 1992 Convention on Biological Diversity, finalized at the Rio Earth Summit and now ratified by almost every industrialized country in the world except the United States, recognizes biodiversity conservation as an important international goal and seeks to facilitate sustainable use of global biological resources. Although the Clinton administration supports the treaty and the Senate Foreign Relations Committee approved the treaty by a vote of 16 to 3 in June, 1994, misinformation and unfounded fears continue to prevent Senate ratification. Because the United States is not a party to the treaty, U.S. representatives are effectively excluded from international negotiations on important issues such as biotechnical safety initiatives, intellectual property rights, agricultural subsidies and forest management. Without

U.S. participation and leadership, American interests in international natural resources are at risk.

Because nations and individuals are increasingly bound by advancing technology, the incentive for individuals all over the globe to protect biodiversity is integrally linked to how trade rules and conservation laws are cooperatively implemented. Without basic standards, investment abroad could simultaneously harm wildlife habitat and disadvantage U.S. competitiveness. This is why finding the right balance between international biodiversity protection and U.S. sovereignty is so crucial as we approach the next century. For example, although the convention affirms that "the conservation of biological diversity is a common concern of humankind,"[6] it also expressly acknowledges the importance of biodiversity's considerable commercial value.[7] In fact, biodiversity's multifaceted economic value raises many questions of international law. Rules under the North American Free Trade Agreement and the new World Trade Organization could lead attacks on U.S. environmental laws, including the ESA, as illegal barriers to international trade. The result in such instances would be retaliatory trade sanctions that unjustifiably harm U.S. citizens. Even long-standing trade restrictions under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) could be at odds with present rules of the World Trade Organization. The United States should not miss the opportunity to participate in the debate surrounding these issues.

One promising approach is to reinvigorate the Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere. Opened for signature in 1940, the Western Hemisphere Convention was a visionary international agreement that sought to conserve species by protecting habitat and controlling unsustainable trade in wildlife. Although Section 8 of the ESA calls upon the federal government to adopt the Western Hemisphere Convention, this action has been hindered by the absence of a central institution to implement and enforce the convention's terms. Congress should establish a permanent office for this purpose.

Given the challenges posed to conservation by unsustainable trade and development, creating this office would provide an ideal regional mechanism for achieving conservation goals through the auspices of a hemispheric trading block, a concept supported by both political parties. In the end, this type of cooperation could become a model for effective global biodiversity protection.

NOTES

1. William S. Alverson, Donald M. Waller and S. L. Solheim, "Forests Too Deer: Edge Effects in Northern Wisconsin," *Conservation Biology* 2 1988, pp. 348-358.
2. *See.* U.S. General Accounting Office, *Rangeland Management: Comparison of Rangeland Condition Reports*, GAO/RCED-91-191, (Washington, D.C.: U.S. General Accounting Office, 1991); U.S. General Accounting Office, *Rangeland Management. More Emphasis Needed on Declining and Overstocked Grazing Allotments*, GAO/RCED-88-80, (Washington, D.C.: U.S. General Accounting Office, 1988).
3. Reed F. Noss and Allen Y. Cooperrider, *Saving Nature's Legacy* (Washington, D. C.: Island Press, 1994), p. 134.
4. Brian Miller, Gerardo Ceballos and Richatd Reading, "The Prairie Dog and Biotic Diversity," *Conservation Biology*, Septembet, 1994, pp. 677-681.
5. *See* T. Crow, A. Haney and D. Waller, *Report on the Scientific Roundtable on Biological Diversity Convened by the Chequamegon and Nicolet National Forests*, (St. Paul U.S. Forest Service, 1994); Noss and Cooperrider; William Alverson, Walter Kuhlmann and Donald M. Waller, *Wild Forests Conservation Biology and Public Policy* (Washington, D.C.: Island Press, 1994).
6. United Nations Environmental Programme, 1992, Convention on Biological Diversity.
7. *See*, e.g., Article 15 (Access to Genetic Resources), Article 16 (Access to and Transfer of Technology), Article 17 (Exchange of Information), Article 18 (Technical and Scientific Cooperation), Article 19 (Handling of Biotechnology and Distribution of its Benefits) and Article 20 (Financial Resources).

Conclusion

Despite the technological, economic and emotional importance of biodiversity, most Americans still do not know what it is, why it is important or that we are losing it rapidly. But biodiversity law is literally the law that protects life, including that of *Homo sapiens.* Consequently, reauthorization of the Endangered Species Act is a crucial step in conserving the planet's biodiversity.

Unfortunately, the ESA and other conservation laws are politically threatened by a minority of misguided but influential opponents. Although the flexibility of the Act is greatly underestimated and its problems exaggerated, it is clear that improvements in the way it functions are needed. The 104th Congress can improve the Act during reauthorization by addressing issues of scientific integrity and economic accountability and by expanding state involvement in endangered-species management. The ESA is a shield that protects us all. Recognizing that the Act has not worked perfectly, Congress should focus on real problems and solutions in order to make it perform even better.

In the end, common sense should guide reauthorization decisions. Wildlife species should be protected because they give us food, medicines and immense enjoyment and are instrumental in assuring the continued healthy functioning of life-supporting ecological processes. Good biodiversity stewardship should be rewarded and bad stewardship punished. With these guideposts in mind, the time has arrived to reauthorize the Endangered Species Act in a way that better secures our natural heritage for present and future generations of Americans.

APPENDIX

Ten Questions About The Endangered Species Act

1. Why do we have an Endangered Species Act?

The short answer is that the Endangered Species Act ultimately protects us. The long answer involves scientific, economic, aesthetic and philosophical components. The Endangered Species Act is intended to address the serious problem of human-caused acceleration of the species extinction rate. Biologists estimate that in the past 150 years, human activities have increased the global extinction rate by hundreds if not thousands of times, producing the greatest extinction event since the decline of the dinosaurs 65 million years ago. According to noted biologist E. O. Wilson, we may be losing up to 50,000 species per year, potentially resulting in the loss of more than 20 percent of the world's species by the year 2025.[1] Humans rely on biological diversity for food, medicines, recreation and ecosystem services such as providing clean water and clean air.[2] The ESA protects species from human-caused extinction by prohibiting the killing and harassment of listed species, protecting habitat crucial for species survival and ensuring that federal programs consider their impacts on such species. See Section One of this report for a more detailed discussion of the many benefits of the ESA.

2. What is currently protected under the ESA?

Currently, 1,524 species of animals and plants are listed as endangered or threatened under the ESA.[3] "Endangered" species are in danger of extinction throughout all or a significant part of their ranges, while "threatened" species are likely to become endangered in the foreseeable future. Seven hundred and fifty-nine endangered and 203 threatened species occur in the United States; the remaining 562 are found in other countries.[4] In addition, more than 4,000 candidate species are awaiting evaluation to determine whether they should be added to the list. Subspecies of fish, wildlife and plants and distinct evolutionary populations of fish and wildlife also can be listed under the ESA; examples include

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grizzly bears in the lower 48 and gray wolves in Minnesota. Because the status of many species may vary across their ranges, the ability to list distinct evolutionary populations contributes to the flexibility of protection efforts under the ESA. However, only a small percentage of the plants and animals listed as threatened or endangered are subspecies or populations. Without the Act's protection, many of the species listed under the ESA, from the California gray whale to the black-footed ferret, probably would be extinct. See Section Two of this report for an explanation of how the listing process works.

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3. Why do species become endangered or threatened?

Most frequently, species become endangered or threatened because their habitat is degraded or destroyed. When forests are cleared, wetlands filled or meadows covered by suburbs, most of the species that once inhabited these areas are left without a home. In some regions, only a fraction of original habitat remains and, without proper planning, ongoing development will result in further additions to the endangered species list.

Other species with commercial value have been driven to the brink of extinction because of overharvesting. The passenger pigeon, once common in the eastern United States, was wiped out early in this century primarily by overhunting, and other species, especially several commercial fish species, face the same fate today. Global trade in animal products such as ivory, rhinoceros horn and bear gall bladders also has contributed greatly to the decline of many species.

Toxic pollutants poison individuals of many species and also make their habitats unfit for continued survival. For example, in the 1970s, residues from the chemical pesticide DDT almost wiped out bald eagle populations in the contiguous United States. A ban on the use of DDT, paired with protection under the ESA, has enabled the eagle to recover sufficiently in most areas to be proposed by the U.S. Fish and Wildlife Service for downlisting.[5] Industrial and agricultural runoff is still implicated in wildlife declines from California to the Florida Everglades.

Exotic pests from foreign countries, lacking natural predators or controls on their populations in the United States, wreak havoc on native species and cost the U.S. economy untold millions of dollars annually. For example, the aggressive zebra mussel, brought to the Great Lakes in 1986 in a ship's ballast water, is directly responsible for the decline of several native mussel species. Zebra mussels also clog industrial pipes and water intakes and encrust boat hulls. Biologists estimate that the costs of controlling zebra mussels and mitigating their impacts will be in the billions.[6]

4. Does the ESA work?

Approximately 40 percent of the species listed as threatened or endangered are stable or improving. Critics of the ESA often assert that the Act is unsuccessful in protecting species, claiming that only a few species have recovered sufficiently to be

removed from the list of threatened and endangered species. But species recovery is often slow and arduous, requiring years of study and effort. It is unrealistic to expect that a species that has lost a large percentage of its habitat and whose population has declined steadily over several decades would begin to recover immediately just because its name appears on the list of threatened and endangered species. Recovery efforts are made even more difficult because many species are already at the brink of extinction before recovery efforts are begun and because these efforts are chronically underfunded. The fact that almost 40 percent of the listed species are stable or improving is testimony to the fact that the ESA has been successful in protecting species from extinction.

5. What is the role of science in the ESA?

Science plays an absolutely essential role in the ESA. The Act requires the Secretary of the Interior (or the Secretary of Commerce in the case of most aquatic species) to base all listing decisions on the best scientific and commercial evidence available. Scientific disciplines such as population ecology, genetics and conservation biology are essential to the development of an effective recovery plan for a listed species and for determining its critical habitat. In addition, strong peer-reviewed science is central to the consultation process, in which federal activities are examined to ensure that they will not result in the extinction of species. More science is needed in assessing the importance of the ESA to overall environmental health and human welfare. See Section Three of this report for Defenders' recommendations on how the role of science can be enhanced under the Act.

6. Does the ESA consider economic factors?

Yes! At nearly every stage of the ESA regulatory process save one, economic considerations are explicitly authorized. The one exception is the actual listing of species by the Secretaries of the Interior and Commerce, who are required to base their decisions on biological data. The rationale behind this exception is that it is critical to have an unbiased scientific assessment of the status of species. Once that status has been determined scientifically, different regulatory management options can be weighed on the basis of both biological and economic considerations. More economic analyses need not be mandated under the ESA, because adequate mechanisms already exist for evaluating the economic impacts of protective actions. More structured flexibility, however, could be beneficial for humans and wildlife alike. See Section Two for an explanation of the ESA process and how economic considerations come into play.

7. What effect does the ESA have on private property rights?

The Fifth Amendment to the Constitution prohibits the federal government from "taking" private property without adequately compensating its owner. Recently, opponents of the ESA have tried to characterize the Act's provisions as a form of such

governmental taking. There are no reported cases in which the courts have ever held that protection of threatened and endangered species on private lands constitutes a taking of that property. To enact legislation mandating federal compensation for any diminution in the value of private property as a result of the ESA or any other governmental regulations would be dangerously misguided. Attempts to do so ignore more than 200 years of constitutional jurisprudence by the Supreme Court, which demands fact-based inquiries on all takings claims based on both the landowner's loss of all viable economic use of the property and analysis of the public interest in the regulation in question.

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"Takings" legislation would attempt to quantify values that cannot be reduced to dollar signs, such as the societal benefits of an endangered species, and would radically alter the balance between potential societal harm and private profit. Even the authors of these controversial proposals admit that, once implemented, such legislation would effectively drain the budgetary resources of government to compensate private citizens for not harming a public resource.

Steps are being taken to encourage conservation incentives for landowners as part of the formal ESA protection process. Bipartisan legislation in the 103rd Congress contained several promising incentive provisions for landowners. In addition, the Clinton administration has developed several new policies that illustrate the flexibility of implementing the ESA on private property. New guidelines have been set for the development of habitat conservation plans for small landowners, and a new "no-surprises" policy protects landowners from an increased regulatory burden should they discover additional listed species on their lands once a conservation plan is promulgated.

8. What is the status of threatened and endangered species on publicly owned lands?

Poor management of U.S. public lands has contributed to the imperiling of hundreds of species listed under the ESA. This issue reveals the hypocrisy of many who support private "takings" legislation but oppose eliminating public-land subsidies that harm species. For example, subsidized livestock grazing on 280 million acres of federal lands has severely damaged wildlife habitat, contributing to the decline of roughly 20 percent of all species listed under the ESA, including the prairie dog, black-footed ferret, swift fox and ferruginous hawk.

Subsidies to grazing, mining, timber and water interests impose an unacceptable double burden on the American taxpayer. Wildlife management need not be the primary purpose of all federal lands, but subsidized industries must be held accountable for the damage they do to such public resources as wildlife and the environment. Until this accountability is established, the status of endangered and threatened species on public lands will continue to decline needlessly.

9. What role do the states play in species protection?

States play a very important role in the protection of endangered and threatened species, and ESA reauthorization provides an opportunity to expand the participation of the states. Most states have enacted their own endangered species laws and are actively involved in inventorying and monitoring programs to protect declining species and biological communities. Section 6 of the ESA provides for federal funding to the states in order to help them implement endangered and threatened species programs more effectively. Section 6 should be broadened to acknowledge explicitly that states have a vital role in conservation programs leading to recovery, so long as states remain accountable to established federal standards. Increased funding for the states is crucial to achieving this objective. See Section Three of this report for Defenders' recommendations for expanding the role of states under the ESA.

10. How does the ESA relate to the future of the United States?

Future generations have a right to the benefits of properly functioning ecosystems and healthy populations of species. Successful economic development is ultimately dependent upon the quality of our living natural resources. By protecting these resources, the ESA will ensure that future generations have economic and other options for preserving a quality of life at least equal to our own. The United States should reestablish its role as a global leader in conservation by achieving responsible, sustainable development that leads to the protection of the planet's natural heritage. The ESA sets a challenge before America, one that must be met if we are to satisfy our moral obligation to future generations.

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NOTES

1. Stephen R. Kellert and E. O. Wilson (eds.), *The Biophilia Hypothesis* (Washington D.C.: Island Press, 1993), p. 36.
2. For a full discussion, see E. O. Wilson, *The Diversity of Life* (Cambridge: Harvard University Press, 1992), pp. 281-310.
3. Department of the Interior, Fish and Wildlife Service, *Endangered Species Technical Bulletin* Volume 20 (3), May/June 1995, p. 24
4. *Ibid.*
5. Department of the Interior, Fish and Wildlife Service, *Endangered Species Technical Bulletin* Volume 19 (4), July/August 1994, p. 1.
6. Edward L. Mills, Joseph H. Leach, James T. Carlton and Carol L. Secor, "Exotic Species and the Integrity of the Great Lakes," *BioScience* Volume 44 (10), November 1994, p. 672.
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NACO National Association of Counties

National Association of Counties: Suggested Changes to the Endangered Species Act

ENDANGERED SPECIES ACT OF ~~1973~~ *1995*

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ENDANGERED SPECIES ACT OF ~~1973~~ 1995

FINDINGS, PURPOSES, AND POLICY:

SEC. 2. (a) FINDINGS.--The Congress finds and declares that--

(1) *scientific evidence has shown that* various species of fish, wildlife, and plants ~~in the United States~~ have been rendered extinct *throughout time, and before mankind became a dominant species, for a number of reasons; and* ~~as a consequence of economic growth and development untempered by adequate concern and conservation~~ *and*; ~~—(2)~~ other species of fish, wildlife, and plants have been ~~so~~ depleted in numbers that they are in danger of or threatened with extinction;

(2) certain of these species of fish wildlife, and plants are: necessary for maintaining biodiversity; critical to the integrity of ecosystems; or of esthetic, educational, historical, recreational and scientific value to the Nation and its people.

(3) these species of fish, wildlife, and plants are *generally* of esthetic, ecological, educational, historical, recreational, and scientific value to the Nation and its people;

(4) the United States has pledged itself as a sovereign state in the international community to conserve to the extent practicable the various species of fish or wildlife and plants facing extinction, pursuant to:

(A) migratory bird treaties with Canada and Mexico;

(B) the Migratory and Endangered Bird Treaty with Japan;

(C) the Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere;

(D) the International Convention for the Northwest Atlantic Fisheries;

(E) the International Convention for the High Seas Fisheries of the North Pacific Ocean;

(F) the Convention on International Trade in Endangered Species of Wild Fauna and Flora; and

(G) other international agreements; and

(5) *it is the best interest of the species and all affectede parties to* encourage ~~ing~~ the States, *local governments, private landowners*, and other interested parties, through Federal financial assistance and a system of incentives, to develop and maintain conservation programs *which may preclude the need for listing certain species of fish, wildlife and plants and*, which meet national and international standards is a key to meeting the Nation's international commitments and to better safeguarding, for the benefit of all citizens, the Nation's heritage in fish, wildlife, and plants.

(b) PURPOSES.--The purposes of this Act are to provide a means ~~whereby the ecosystems~~ *to conserve* ~~upon which~~ endangered species and threatened species ~~depend may be conserved, to provide a program for the conservation of such endangered species and threatened species~~, and to take such steps as may be appropriate to achieve the purposes of the treaties and conventions set forth in subsection (a) of this section, *provided:*

(i) such species are found to be critical to the integrity of ecosystems within which they occur, or,

(ii) such species are found to be of esthetic, educational, historical, recreational, or scientific value to the Nation and its people; and,

(iii) proposed conservation measures to not adversely affect the social, economic, cultural, recreational or other activities of the human community...~~:~~

(C) POLICY.--(1) It is further declared to be the policy of Congress that all Federal departments and agencies shall seek to conserve endangered species and threatened species *to the extent practicable*, and shall utilize their authorities in furtherance of the purposes of this Act.

(2) It is further declared to be the policy of Congress that Federal agencies shall cooperate with State ~~and~~, local agencies *and affected private landowners* to *implement management strategies that take into account human economic activity, as well as species protection, and to* resolve water resource issues in concert with conservation of endangered species

DEFINITIONS

SEC. 3. For the purposes of this Act--

(1) The term "alternative courses of action" means all alternatives and thus is not limited to original project objectives and agency jurisdiction.

(2) The term "commercial activity" means all activities of industry and trade, including, but not limited to, the buying or selling of commodities and activities conducted for the purpose of facilitating such buying and selling: *Provided, however,* That it does not include exhibitions of commodities by museums or similar cultural or historical organizations.

(3) The term " compensation" means monetary, or other consideration paid, or provided, to private property owners for the lost value of the affected property by limitations on human activites imposed by this Act..

~~(3)~~ *(4)* The terms "conserve," "conserving," and "conservation" mean to use and the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary. Such methods and procedures include, but are not limited to, all activities associated with scientific resources management such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, and transplantation, and, in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking.

~~(4)~~ *(5)* The term "Convention" means the Convention on International Trade in Endangered Species of Wild Fauna and Flora, signed on March 3, 1973, and the appendices thereto.

~~(5)~~ *(6)*(A) The term "critical habitat" for a threatened or endangered species means--

~~(i)~~ the specific areas, *as determined by the Secretary,* ~~within the geographical area occupied by the species,~~ at the time it is listed in accordance with the provisions of section 4 of this Act, on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection; and

~~(ii) specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of section 4 of this Act, upon a determination by the Secretary that such areas are essential for the conservation of the species.~~

(B) critical habitat may be established for those species now listed as threatened or endangered species for which no critical habitat has heretofore been established as set forth in subparagraph (A) of this paragraph.

(C) *(i)* Except in those *extraordinary* circumstances determined by the Secretary, critical habitat shall not include the entire geographical area which can be occupied by the threatened or endangered species~~.~~*; and*

(ii) the Secretary shall, in consultation with the State, and officials of affected local jurisdictions, review the geographic area under consideration as critical habitat for those areas that are only marginally necessary for the conservation of the species, and consider the human activity that may be limited on such property by critical habitat designation. The Secretary shall weigh the necessity for the inclusion of such marginally necessary areas and the potential limitations on human activity and based on this review, make a determination on the inclusion of these areas in critical habitat.

(7) The term "ecosystem" means a complex interrelated system of biological communities functioning in relation to their abiotic environment, within which there is measurable energy and matter transfer occurring.

(8) The term "ecosystem integrity" means the ability of an ecosystem to accommodate non-catastrophic disturbance and continue to sustain its functionality.

~~(6)~~ *(9)* The term "endangered species" means any species which is in danger of extinction throughout all or a significant portion of its range other than a species of the Class Insects determined by the Secretary to constitute a pest whose protection under the provisions of this Act would present an overwhelming and overriding risk to man.

~~(7)~~ *(10)* The term "Federal agency" means any department, agency or instrumentality of the United States.

~~(8)~~ *(11)* The term "fish or wildlife" means any member of the animal kingdom, including without limitation any mammal, fish, bird (including any migratory, nonmigratory, or endangered bird for which protection is also afforded by treaty or other international agreement), amphibian, reptile, mollusk, crustacean, arthropod or other invertebrate, and includes any part, product, egg, or offspring thereof, or the dead body or parts thereof

(9) The term "foreign commerce" includes, among other things, any transaction--

(A) between persons within one foreign country;

(B) between persons in two or more foreign countries;

(C) between a person within the United States and a person in a foreign country; or

(D) between persons within the United States, where the fish and wildlife in question are moving in any country or countries outside the United States.

(12) The term "geographic area" means a land area specifically defined by the Secretary specifically designed to assist in the conservation of a threatened or endangered species.

(13) The term "human activity" means actions associated with, but not limited to, social, cultural, recreational, governmental, or economic and other uses of lands, habitats, or ecosystems.

~~(10)~~ *(14)* The term "import" means to land on, bring into, or introduce into, or attempt to land on, bring into, or introduce into, any place subject to the jurisdiction of the United States, whether or not such landing, bringing, or introduction constitutes an importation within the meaning of the customs laws of the United States.

(15) The term "local government" means any and all county, city, township, or town governments within a state affected by actions taken pursuant to this Act.

~~(11)~~ *(16)* The term "permit or license applicant" means, when used with respect to an action of a Federal agency for which exemption is sought under section 7, any person whose application to such agency for a permit or license has been denied primarily because of the application of section 7(a) to such agency action.

~~(12)~~ *(17)* The term "person" means an individual, corporation, partnership, trust, association, or any other private entity; or any officer, employee, agent, department, or instrumentality of the Federal Government, of any State, municipality, or political subdivision

of a State, or of any foreign government; any State, municipality, or political subdivision of a State; or any other entity subject to the jurisdiction of the United States."

~~(13)~~ *(18)* The term "plant" means any member of the plant kingdom, including seeds, roots and other parts thereof.

(19) The term "range" means a geographic area over which a species has historically used for habitat, and can be confirmed by historic population trends developed through scientific analysis and review.

~~(14)~~ *(20)* The term "Secretary" means, except as otherwise herein provided, the Secretary of the Interior or the Secretary of Commerce as program responsibilities are vested pursuant to the provisions of Reorganization Plan Numbered 4 of 1970, except that with respect to the enforcement of the provisions of this Act and the Convention which pertain to the importation or exportation of terrestrial plants, the term also means the Secretary of Agriculture. ~~(15)~~ *(21)* The term "species" includes *only* ~~any~~ *those species* ~~subspecies~~ of fish or wildlife or plants, and any distinct population segment of any species or vertebrate fish or wildlife which interbreeds when mature, *and contains a unique gene pool necessary for the continuation of the species as determined by verifiable scientific methodology.*

~~(16)~~ *(22)* The term "State" means any of the several States, the District of Columbia, the Commonwealth of Puerto Rico, American Samoa, the Virgin Islands, Guam, and the Trust Territory of the Pacific Islands.

~~(17)~~ *(23)* The term "State agency" means any State agency, department, board, commission, or other governmental entity which is responsible for the management and conservation of fish, plant, or wildlife resources within a State.

~~(18)~~ *(24)* The term "take" means to *intentionally* ~~harass, harm,~~ pursue, hunt, shoot, wound, kill, trap, capture, ~~or~~ collect, *harass, harm,* or *when such an* ~~to~~ attempt to engage in any such conduct *that is likely to jeopardize the continued existence of the species.*

(~~19~~) *(25)* The term "threatened species" means any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

(~~20~~) *(26)* The term "United States," when used in a geographical context, includes all States.

(27) The term "verifiable" means studies, analysis, or other scientific methodologies used to make determinations pursuant to this Act, can be replicated, repeated, or otherwise confirmed by another scientific source capable of such analysis

STEWARDSHIP AND THE CONSERVATION OF POTENTIALLY THREATENED OR ENDANGERED SPECIES.

SEC 4. (a) GENERAL. -- (1) The Secretary, through the offices of the U.S. Fish and Wildlife Service, shall gain access to information regarding potential petitions for listing that he may receive. Based on that information, the Secretary shall aggressively pursue management activities and stewardship strategies prior to the possible petition for listing, that will:

(i) assure the long-term viability of potentially threatened or endangered species, and

(ii) provide flexibility for the Secretary, States, local governments and affected landowners to potentially avoid the more significant and restrictive regimes provided for in this Act.

(2) The Secretary shall consult with, and provide, to the extent practicable, a range of assistance, including but not limited to, technical, scientific and financial assistance, to States, affected local jurisdictions and private landowners willing to enter into stewardship agreements with the Secretary to provide for the conservation of a potentailly threatened or endangered species.

(3) Any State, local jurisdiction or private landowner entering into such an agreement with the Secretary and applying such strategies to affected geographic areas, as appropriate, shall be afforded acknowledged preferential status in further consultations necessitated by the imposition of the provisions of this Act.

(4) Nothing in this section shall be considered mandatory for States, local juridictions or private landowners to agree with the Secretary. Failure to reach agreements under this section shall not be used to restrict participation in future consultations provided for in this Act.

DETERMINATION OF ENDANGERED SPECIES AND THREATENED SPECIES

SEC.-4 5.. (a) GENERAL.--(1) The Secretary shall by regulation promulgated in accordance with subsection (b) determine whether any species is an endangered species or a threatened species because of any of the following factors:

(A) the present or threatened destruction, *adverse* modification, or curtailment of *a significant portion of* its habitat or range, *as determined by the Secretary,*;

(B) overutilization for commercial, recreational, scientific, or educational purposes;

(C) *excessive* disease or predation;~~(D) the inadequacy of existing regulatory mechanisms;~~

(E) *(D)* other natural or manmade factors affecting its continued existence.

(2) With respect to any species over which program responsibilities have been vested in the Secretary of Commerce pursuant to Reorganization Plan Numbered 4 of 1970--

(A) in any case in which the Secretary of Commerce determines that such species should--

(i) be listed as an endangered species or a threatened species, or

(ii) be changed in status from a threatened species to an endangered species, he shall so inform the Secretary of the Interior, who shall list such species in accordance with this section;

(B) in any case in which the Secretary of Commerce determines that such species should-

(i) be removed from any list published pursuant to subsection (c) of this section, or

(ii) be changed in status from an endangered species to a threatened species, he shall recommend such action to the Secretary of the Interior, and the Secretary

of the Interior, if he concurs in the recommendation, shall implement such action; and

(C) the Secretary of the Interior may not list or remove from any list any such species, and may not change the status of any such species which are listed, without a prior favorable determination made pursuant to this section by the Secretary of Commerce.

(3) The Secretary, by regulation promulgated in accordance with subsection (b) and to the maximum extent prudent and determinable--

(A) shall, concurrently with making a determination under paragraph (1) that a species is an endangered species or a threatened species, designate any habitat of such species which is then considered to be critical habitat; and

(B) may, from time-to-time thereafter as appropriate, revise such designation.

(b) BASIS FOR DETERMINATIONS. (1)(A) The Secretary shall make determinations required by subsection (a)(1) ~~solely~~ on the basis of the best *verifiable* scientific and commercial data available to him after conducting a review of the status of the species and after taking into account those efforts, if any, being made by any State or foreign nation, or any political subdivision of a State or foreign nation, to protect such species, whether by predator control, protection of habitat and food supply, or other conservation practices, within any area under its jurisdiction, or on the high seas. *Any determination made pursuant to this subsection shall be revieued by a qualified scientific peer review panel consisting of persons outside the U.S. Fish and Wildlife Service and the U.S. Biological Service, in consultation with qualified persons in affected State and local governments.*

(B) The Secretary shall have conducted a full range of analyses as provided for in the National Environmental Policy Act, including but not limited to, social, cultural, recreational, and economic analyses to determine the potential adverse impacts a listing of such species, or the designation of critical habitat, may have on human activity before taking further action toward such listing.

(i) Such analysis must be comprehensive, taking into account all potential limitations that would be imposed on human activity on lands, habitat, or ecosystems affected by such listing and,

(ii) any analysis conducted under this subsection must be conducted in consultation with the affected state and local governments. and

(iii) any analysis conducted under this subsection must be conducted by an agency or other entity other than the U.S. Fish and Wildlife Service or the U.S. Biological Service, and

(iv) any anaylsis required by this section is subject to the emergency listing provisions of Sec. 5 (b) (7) of this Act..

(BC) In carrying out this section, the Secretary shall give consideration to species which have been--

(i) designated as requiring protection from unrestricted commerce by any foreign nation, or pursuant to any international agreement; or

(ii) identified as in danger of extinction, or likely to become so within the foreseeable future, by any State agency or by any agency of a foreign nation that is responsible for the conservation of fish or wildlife or plants.

(2) The Secretary shall *only* designate critical habitat *after completion of the analysis required in Sec.4, Subsection (b)(1)(B), and consultation with the affected State and local governments*, and make revisions thereto, under subsection (a)(3) on the basis of the best *verifiable* scientific data available and after taking into consideration the economic impact, and any other relevant impact *on human activity*, of specifying any particular area as critical habitat. The Secretary ~~may~~ *shall* exclude any area from critical habitat if he determines that the benefits *to human activity* of such exclusion outweigh the benefits of specifying such area as part of the critical habitat, unless he determines, based on the best *verifiable* scientific and commercial data available, that the failure to designate such area as critical habitat will result in the extinction of the species concerned.

(3)(A) To the maximum extent practicable, within 90 days after receiving the petition of an interested person under section 553(e) of title 5, United States Code, to add a species to, or to remove a species from, either of the lists published under subsection (c), the Secretary shall make a finding as to whether the petition presents substantial scientific or commercial information indicating that the petitioned action may be warranted. If such a petition is found to present such information, the Secretary shall promptly commence a review of the status of the species concerned. The Secretary shall promptly publish each finding made under this subparagraph in the Federal Register, *along with relevant economic analysis completed pursuant to Sec. 4 (b)(1)(B) of this Act.*.

(B) Within 12 months after receiving a petition that is found under subparagraph (A) to present substantial information indicating that the petitioned action may be warranted, the Secretary shall make one of the following findings:

(i) The petitioned action is not warranted, in which case the Secretary shall promptly publish such finding in the Federal Register.

(ii) The petitioned action is warranted in which case the Secretary shall promptly publish in the Federal Register a general notice and the complete text of a proposed regulation to implement such action in accordance with paragraph (5).

(iii) The petitioned action is warranted but that--

(I) the immediate proposal and timely promulgation of a final regulation implementing the petitioned action in accordance with paragraphs (5) and (6) is precluded by pending proposals to determine whether any species is an endangered species or a threatened species, and

(II) expeditious progress is being made to add qualified species to either of the lists published under subsection (c) and to remove from such lists species for which the protections of the Act are no longer necessary, *and*

(III) The impact on human activity outweighs the actions necessary to protect species from further population decline, or.

(IV) The impact the listing of such species, or the designation of critical habitat, may have on other species, their habitat or ecosystem integrity, is too great to warrant listing,

in which case the Secretary shall promptly publish such finding in the Federal Register, together with a description and evaluation of the reasons and data on which the finding is based.

(C)(i) A petition with respect to which a finding is made under subparagraph (B)(iii) shall be treated as a petition that is resubmitted to the Secretary under subparagraph (A) on the date of such finding and that presents substantial scientific or commercial information that the petitioned action may be warranted.

(ii) Any negative finding described in subparagraph (A) and any finding described in subparagraph (B) (i) or (iii) shall be subject to judicial review.

(iii) The Secretary shall implement a system to monitor effectively the status of all species with respect to which a finding is made under subparagraph (B)(iii) and shall make ~~prompt~~*reasonable* use of the authority under paragraph 7 *after considering the use of such authority on human activity and consultation with the affected State and local governments* to prevent a *unchallenged* ~~significant~~ risk to the *extinction* ~~well being~~ of any such species.

(D)(i) To the maximum extent practicable, within 90 days after receiving the petition of an interested person under section 553(e) of title 5, United States Code, to revise a critical habitat designation, the Secretary shall make a finding as to whether the petition presents substantial *verifiable* scientific information indicating that the revision may be warranted. The Secretary shall promptly publish such finding in the Federal Register.

(ii) Within 12 months after receiving a petition that is found under clause (i) to present substantial information indicating that the requested revision may be warranted, the Secretary shall determine how he intends to proceed with the requested revision, and shall promptly publish notice of such intention in the Federal Register.

(4) Except as provided in paragraphs (5) and (6) of this subsection the provisions of section 533 of title 5, United States Code (relating to rulemaking procedures), shall apply to any regulation promulgated to carry out the purposes of this Act.

(5) With respect to any regulation proposed by the Secretary to implement a determination, designation, or revision referred to in subsection (a) (1) or (3), the Secretary shall--

(A) not less than 90 days before the effective date of the regulation--

(i) publish a general notice and the complete text of the proposed regulation in the Federal Register, and

(ii) give actual notice of the proposed regulation (including the complete text of the regulation) *by registered mail, or other certifiable method,* to the State agency in each State in which the species is believed to occur, and to each county or equivalent jurisdiction in which the species is believed to occur, and invite the comment of such agency, and each such jurisdiction, thereon;

(iii) provide information on the deficiencies in the data on which the listing decision was based, identify the data collection tasks necessary to cure such deficiencies, and establish timeline for completion of those tasks;

(iv) those data collection tasks which have timelines for completion prior to the implementation of the final rule must be completed, and the resulting data must be considered in the final listing decision;

(v) Provide, upon written request, the full text of the studies, analysis and decision documents upon which the intial decision to list, and designate critical habitat were based;

(vi) The Secretary shall publish in the final rule the specific steps taken to evaluate all information presented for consideration during the listing decision, along with any continuing weaknesses in the data, data collection tasks necessary to cure such weaknesses and deadlines for completing such tasks;

(vii) establish criteria for the review of new information generated by the completion of the above tasks, and establish opportunities for public comment and consultation with the State, local governments, and private property owners affected by the listing decision;

(viii) establish a timeline from which further steps which should be taken as a result of this new information will be acted upon.

(B) insofar as practical, and in cooperation with the Secretary of State, give notice of the proposed regulation to each foreign nation in which the species is believed to occur or whose citizens harvest the species on the high seas, and invite the comment of such nation thereon;

(C) give notice of the proposed regulation to such professional scientific organizations as he deems appropriate;

(D) publish a summary of the proposed regulation in a newspaper of general circulation in each area of the United States in which the species is believed to occur; and

(E) promptly hold ~~one~~ *local* public hearings on the proposed regulation ~~if any person files a request for such a hearing within 45 days after the date of publication of general notice~~.

(6)(A) Within the one-year period beginning on the date on which general notice is published in accordance with paragraph (5)(A)(i) regarding a proposed regulation, the Secretary shall publish in the Federal Register--

(i) if a determination as to whether a species is an endangered species or a threatened species, or a revision of critical habitat, is involved, either--

(I) a final regulation to implement such determination,

(II) a final regulation to implement such revision or a finding that such revision should not be made

(III) notice that such one-year period is being extended under subparagraph (B)(i), or

(IV) notice that the proposed regulation is being withdrawn under subparagraph (B)(ii), together with the finding on which such withdrawal is based; or

(ii) subject to subparagraph (C), if a designation of critical habitat is involved, either-

(I) a final regulation to implement such designation, or

(II) notice that such one-year period is being extended under such subparagraph.

(B)(i) If the Secretary finds with respect to a proposed regulation referred to in subparagraph (A)(i) that there is substantial disagreement regarding the sufficiency or accuracy of the available data relevant to the determination or revision concerned the Secretary ~~may~~ *shall* extend the one-year period specified in subparagraph (A)~~) for not more than six months~~ for purposes of soliciting additional data.

(ii) If a proposed regulation referred to in subparagraph (a)(i) is not promulgated as a final regulation within such one-year period (or longer period if extension under clause (i) applies) because the Secretary finds that there is not sufficient evidence to justify the action proposed by the regulation the Secretary shall immediately withdraw the regulation. The finding on which a withdrawal is based shall be subject to judicial review. The Secretary may not propose a regulation that has previously been withdrawn under this clause unless he determines that sufficient new information is available to warrant such proposal.

(iii) If the one-year period specified in subparagraph (A) is extended under clause (i) with respect to a proposed regulation, then before the close of such extended period the Secretary shall publish in the Federal Register either a final regulation to implement the determination or revision concerned, a finding that the revision should not be made, or a notice of withdrawal of the regulation under clause (ii), together with the finding on which the withdrawal is based.

(C) A final regulation designating critical habitat of an endangered species or a threatened species shall be published ~~concurrently with~~ *a minimum of 60 days prior to* the final regulation implementing the determination that such species is endangered or threatened, unless the Secretary deems that-

(i) it is essential to the conservation of such species that the regulation implementing such determination be promptly published; or

(ii) critical habitat of such species is not then determinable, in which case the Secretary, with respect to the proposed regulation to designate such habitat, may extend the one-year period specified in subparagraph (A) by not more than one additional year, but not later than the close of such additional year the Secretary must publish a final regulation, based on such data as may be available at that time, designating, to the maximum extent prudent, such habitat; or

(iii) Consultation with the affected State,local government, or affected private property owner has not occurred. Should this be the case, no final regulation on critical habitat shall be published until such consultation has been completed.

(7) Neither paragraph (4), (5), or (6) of this subsection, nor section 553 of title 5, United States Code, *nor Sec.5 (b) (1) (B) of this Act*, shall apply to any regulation issued by the Secretary in regard to any emergency posing a significant risk to the well-being of any species of fish and wildlife or plants, but only if--

(A) at the time of publication of the regulation in the Federal Register the Secretary publishes therein detailed reasons why such regulation is necessary, and

(B) in the case such regulation applies to resident species of fish or wildlife, or plants, the Secretary gives actual notice of such regulation to the State agency in each State in which such species is believed to occur.

Such regulation shall, at the discretion of the Secretary, take effect immediately upon the publication of the regulation in the Federal Register. Any regulation promulgated under the authority of this paragraph shall cease to have force and effect at the close of the 240-day period following the date of publication unless, during such 240-day period, the rulemaking procedures which would apply to such regulation without regard to this paragraph are complied with. if at any time after issuing an emergency regulation the Secretary determines, on the basis of the best appropriate data available to him, that substantial evidence does not exist to warrant such regulation, he shall withdraw it.

(8) The publication in the Federal Register of any proposed or final regulation which is necessary or appropriate to carry out the purposes of this Act shall include a summary by the Secretary of the data on which such regulation is based and shall show the relationship of such data to such regulation; and if such regulation designates or revises critical habitat, such summary shall, to the maximum extent practicable, also include a brief description and evaluation of those activities (whether public or private) which in the opinion of the Secretary, if undertaken may adversely modify such habitat, or may be affected by such designation, *and specify under what conditions existing huam activities may continue or new ones begin with the designated areas.*.

(c) LISTS. -- (1) The Secretary of the Interior shall publish in the Federal Register a list of all species *petitioned for potential listing and all species* determined by him or the Secretary of Commerce to be endangered species and a list of all species determined by him or the Secretary of Commerce to be threatened species. *The Secretary shall provide to each affected State, local government, or affected private property owner, a copy of such list.* Each list shall refer to the species contained therein by scientific and common name or names, if any, specify with respect to such species over what portion of its range it is endangered or threatened, and specify any critical habitat within such range. The Secretary shall from time to time revise each list published under the authority of this subsection to reflect recent determinations, designations, and revisions made in accordance with subsections (a) and (b).

(2) The Secretary shall--

(A) conduct, at least once every five years, a review of all species included in a list which is published pursuant to paragraph (1) and which is in effect at the time of such review, and

(B) determine on the basis of such review whether any such species should--

(i) be removed from such list;

(ii) be changed in status from an endangered species to a threatened species; or

(iii) be changed in status from a threatened species to an endangered species.

Each determination under subparagraph (B) shall be made in accordance with the provisions of subsection (a) and (b).

(d) PROTECTIVE REGULATIONS.--*(1)*Whenever any species is listed as a threatened species pursuant to subsection (c) of this section, the Secretary shall issue, *after consultation with the affected State, local governments, or affected private property owners,* such regulations as he deems necessary and advisable to provide for the conservation of such species. *The Secretary shall, to the extent practicable, utilize state and local government agencies for the management of lands, habitats, or ecosystems that may assist in the conservation of the species.* The Secretary may by regulation prohibit with respect to any threatened species any act prohibited under section 9(a)(1), in the case of fish or wildlife, or section 9(a)(2), in the case of plants, with respect to endangered species, except that with respect to the taking of resident species of fish or wildlife, such regulations shall apply in any State which has entered into a cooperative agreement pursuant to section 6(c) of this Act only to the extent that such regulations have also been adopted by such State.

(2) Provisions affecting the "taking" or the provisions of Section 9(a) (1) of this Act may only be applied to threatened species; by rule that includes;

(a) on a case-by-case basis to a specific species;

(b) at the time each specific species is listed;

(c) upon determination by the Secretary that the applications of the prohibition(s) to that specific species is necessary and advisable; and

(d) in consultation with any State and/or local government with which a cooperative agreement has been entered into, and contains such specific species.

~~(e) SIMILARITY OF APPEARANCE CASES.--The Secretary may, by regulation of commerce or taking, and to the extent he deems advisable, treat any species as an endangered species or threatened species even though it is not listed pursuant to section 4 of this Act if he finds that~~

~~(A) such species so closely resembles in appearance, at the point in question, a species which has been listed pursuant to such section that enforcement personnel would have~~

~~(A) such species so closely resembles in appearance, at the point in question, a species which has been listed pursuant to such section that enforcement personnel would have substantial difficulty in attempting to differentiate between the listed and unlisted species;~~

~~(B) the effect of this substantial difficulty is an additional threat to an endangered or threatened species; and~~

~~(C) such treatment of an unlisted species will substantially facilitate the enforcement and further the policy of this Act~~

(f)(l) RECOVERY PLANS.--The Secretary shall develop *and implement plans, in consultation with the affected State, local jurisdiction and affected private property owners,* ~~and implement plans~~ (hereinafter in this subsection referred to as 'recovery plans') for the conservation and survival of endangered species and threatened species listed pursuant to this section, unless he finds that such a plan will not promote the conservation of the species. The Secretary, in development and implementing recovery plans, shall, to the maximum extent practicable--

(A) give priority to those endangered species or threatened species, without regard to taxonomic classification, that are most likely to benefit from such plans, particularly those species that are, or may be, in conflict with construction or other development projects or other forms of economic activity;

(B) require recovery plans to distinguish between limited actions or constraints that may avoid a "taking" or "jeopardy" to the species, and more expansive requirements necessary to facilitate recovery of the species over its' entire range

(BC) incorporate in each plan--

(i) incentives for the affected State, local jurisdictions and affected private property owners to participate in recovery efforts. Such incentives may include, but are not limited to, financial incentives, land exchanges, regulatory relief, or any other incentive available to the Secretary under existing authorities.

~~(ii)~~ *(ii)* a description of such site-specific management actions as may be necessary to achieve the plan's goal for the conservation and survival of the species;

~~(iii)~~ *(iii)* objective, measurable criteria which, when met, would result in a determination, in accordance with the provisions of this section, that the species be removed from the list; and

~~(iv)~~ *(iv)* estimates of the time required and the cost to carry out those measures needed to achieve the plan's goal and to achieve intermediate steps toward that goal; *and*

(v) a discussion of the likelihood of the species recovery, alternatives for achieving recovery, and the risks to the species posed by each alternative; and

(vi) a discussion of the likely economic and social costs of limitations on human activity, including the impacts on regional, and local economies, employment and social conditions.and.

(vii) a discussion of the effects on other species within the ecosystem, their habitats, and the ecosystem integrity

(2) The Secretary, in developing and implementing recovery plans, may procure the services of appropriate public and private agencies and institutions, and other qualified persons. ~~Recovery teams appointed pursuant to this subsection shall not be subject to the Federal Advisory Committee Act.~~ (3) The Secretary shall report every two years to the Committee on Environment and Public Works of the Senate and the Committee on ~~Merchant Marine and Fisheries~~*Resources* of the House of Representatives on the status of efforts to develop and implement recovery plans for all species listed pursuant to this section and on the status of all species for which such plans have been developed.

(4) The Secretary shall, prior to final approval of a new or revised recovery plan, provide public notice and an opportunity for public review and comment on such plan. The Secretary shall consider all information presented during the public comment period prior to approval of

the plan. *The Secretary shall publish in the Federal Register the final approval of the new or revised recovery plan, which shall has the force and effect of law for the purposes of this Act.*

(5) Subject to an agreed upon recovery plan, and the provisions of Sec 4 of this Act, the Secretary is authorized to assist private landowners in meeting the landowners costs associated with the implementation of a recovery plan. When determining the level of assistance, the Secretary shall take into account the cost of the plan, and its associated requirements, the willingess of the affected landowner to utilize the plan, and the ability of the private landowner to reasonably participate in the funding of the recovery plan. The Secretary shall not jeopardize the economic viability of an affected landowner by requiring such a landowner to assume a portion of the funding that would exceed their reasonable ability to pay.

~~(5)~~ *(6)* Each Federal agency shall, prior to implementation of a new or revised recovery plan, consider all information presented during the public comment period under paragraph (4).

(g) MONITORING.--(1) The Secretary shall implement a system in cooperation with the States, *and local governments* to monitor effectively for not less than five years the status of all species which have recovered to the point at which the measures provided pursuant to this Act are no longer necessary and which, in accordance with the provisions of this section, have been removed from either of the lists published under subsection (c).

(2) The Secretary shall make ~~prompt~~ *reasonable* use of the authority under paragraph 7 of subsection (b) of this section, *after consultation with the affected State and local governments* to prevent a significant risk ~~to the well being~~ *of extinction* of any such recovered species.

(h) AGENCY GUIDELINES.--The Secretary shall establish, and publish in the Federal Register, agency guidelines to insure that the purposes of this section are achieved efficiently and effectively. Such guidelines shall include, but are not limited to--(1) procedures for recording the receipt and the disposition of petitions submitted under subsection (b)(3) of this section, *including the notification to the affected State, local governments, and affected private landowners;*

(2) criteria for making the findings required under such subsection with respect to petitions;

(3) a ranking system to assist in the identification of species that should receive priority review under subsection (a)(1) of the section; and

(4) a system for developing and implementing, on a priority basis, recovery plans under subsection (f) of this section. The Secretary shall, *after consultation with the affected State and local governments*, provide to the public notice of, and opportunity to submit written comments on, any guideline (including any amendment thereto) proposed to be established under this subsection.

(i) If, in the case of any regulation proposed by the Secretary under the authority of this section, a State, *or affected local government* agency to which notice thereof was given in accordance with subsection (b)(5)(A)(ii) files comments disagreeing with all or part of the proposed regulation and the Secretary issues a final regulation which is in conflict with such comments, or if the Secretary fails to adopt a regulation pursuant to an action petitioned by a State, *or affected local government* agency under subsection (b)(3), the Secretary shall submit to the State, *or affected local government* agency a written justification for his failure to adopt regulations consistent with the *State, or affected local government* agency's comments or petition.

(j) PRIVATE PROPERTY COMPENSATION -- (1) If a private property owner determines limitations imposed by this Act substantially decreases the value of the affected property, such individual may petition, in writing, to the Secretary for compensation to redress such losses. If the Secretary denies the petition, or fails to act within 90 days of receipt of the petition, the private property owner may pursue litigation in the appropriate Federal District Court pursuant to the takings provisions of Amendment V to the Constitution of the United States, and subsequent legal interpretations.

LAND ACQUISITION

SEC. ~~5~~ 6. (a) PROGRAM.--The Secretary, and the Secretary of Agriculture with respect to the National Forest System, shall establish and implement a program to conserve fish, wildlife, and plants, including those which are listed as endangered species or threatened species pursuant to section 4 of this Act. To carry out such a program, the appropriate Secretary--

(1) shall utilize the land acquisition and other authority under the Fish and Wildlife Act of 1966, as amended, the Fish and Wildlife Coordination Act, as amended, and the Migratory Bird Conservation Act, as appropriate; and

(2) is authorized to acquire by purchase, donation, or otherwise lands, waters, or interest therein, and such authority shall; be in addition to any other land acquisition vested in him, *after appropriate consultation with local government officials*..

(b) ACQUISITIONS.--Funds made available pursuant to the Land and Water Conservation Fund Act of 1965, as amended, may be used for the purpose of acquiring lands, waters, or interests therein under subsection (a) of this section.

COOPERATION WITH THE STATES, *LOCAL GOVERNMENTS AND PRIVATE PROPERTY INTERESTS*

SEC. 6 7. (a) GENERAL.-- *(i)* In carrying out the program authorized by this Act, the Secretary shall cooperate to the maximum extent practicable with the States *and affected local governments*. Such cooperation shall include consultation with the States *and local governments* concerned before acquiring any land or water, or interest therein, for the purpose of conserving any endangered species or threatened species.

(ii) To the maximum extent practicable, the Secretary shall consult with affected private property landowners as appropriate

(b) MANAGEMENT AGREEMENTS.--The Secretary may enter into agreements with any State or local *government* for the administration and management of any area established for the

conservation of endangered species or threatened species. Any revenues derived from the administration of such areas under these agreements shall be subject to the provisions of section 401 of the Act of June 15, 1935 (49 Stat.383; 16 U.S.C. 715s)

(c)(l) COOPERATIVE AGREEMENTS.--In furtherance of the purposes of this Act, the Secretary is authorized to enter into a cooperative agreement in accordance with this section with any State,-*local government, or affected private landowner*, which establishes and maintains an adequate and active program for the conservation of endangered species and threatened species, *regardless of Secretarial approval of such a program.* Within one hundred and twenty days after the Secretary receives a certified copy of such a proposed State, *local government or affected private property owners* program, he shall make a determination whether such program is in accordance with this Act. Unless he determines, pursuant to this paragraph, that the State, *local government, or affected private property owners* program is not in accordance with this Act, he shall enter into a cooperative agreement with the State,-*local government, or affected private property owner* for the purpose of assisting in implementation of the State,-*local, or private* program. In order for a State, *local,* or *private* program to be deemed an adequate and active program for the conservation of endangered species and threatened species, ~~the Secretary must find, and annually thereafter reconfirm such finding, that under~~ the State,-*local, or private* program *must show that--*

(A) authority resides in the State *or local government* agency ~~of~~ *to* conserve resident species of fish or wildlife determined by the State *or local government* agency or the Secretary to be endangered or threatened; *or that the affected private landowner has sufficient resources to implement the private plan,*

(B) the State *or local government* agency or *affected private landowner* has established acceptable conservation programs, consistent with the purposes and policies of this Act for all resident species of fish or wildlife in the State *or local jurisdiction* which are deemed by the Secretary to be endangered or threatened, and has furnished a copy of

such plan and program together with all pertinent details, information, and data requested to the Secretary;

(C) the State or *local government* agency is authorized to conduct investigations to determine the status and requirements for survival of resident species of fish and wildlife

(D) the State or *local government* agency is authorized to establish programs, including the acquisition of land or aquatic habitat or interests therein, for the conservation of resident endangered or threatened species of fish or wildlife; and

(E) provision is made for public participation in designating resident species of fish or wildlife as endangered or threatened, or that under the State or *local government* program

(i) the requirements set forth in paragraphs (3),(4), and (5) of this subsection are complied with, and

(ii) plans are included under which immediate attention will be given to those resident species of fish and wildlife which are determined by the Secretary or the State or *local government* agency to be endangered or threatened and which the Secretary and the State or *local government* agency agree are most urgently in need of conservation programs; except that a cooperative agreement entered into with a State or *local government* whose program is deemed adequate and active pursuant to clause (i) and this clause and this subparagraph shall not affect the applicability of prohibitions set forth in or authorized pursuant to section 4(d) or section 9(a)(1) with respect to the taking of any resident endangered or threatened species.

(2) In furtherance of the purposes of this Act, the Secretary is authorized to enter into a cooperative agreement in accordance with this section with any State, *local government or affected private landowner* which establishes and maintains an adequate and active program for the conservation of endangered species and threatened species of plants. Within one hundred and twenty days after the Secretary receives a certified copy or such a proposed State,

local,or private program, he shall make a determination whether such program is in accordance with this Act. Unless he determines, pursuant to this paragraph, that the State *or local or private* program is not in accordance with this Act, he shall enter into a cooperative agreement with the State, *local government, or affected private landowner* for the purpose of assisting in implementation of the State, *local government or private* program. In order for a State, *local or private* program to be deemed an adequate and active program for the conservation of endangered species of plants and threatened species of plants, the ~~Secretary must find, and annually thereafter reconfirm such finding, that under the State~~ program *must provide that--*

(A) authority resides in the State *or local government* agency to conserve resident species of plants determined by the State *or local government* agency or the Secretary to be endangered or threatened; *or that the affected private landowner has sufficient resources to implement the private plan;*

(B) the State *or local government* agency *or affected private landowner* has established acceptable conservation programs, consistent with the purposes and policies of this Act, for all resident species of plants in the State *or local jurisdiction* which are deemed by the Secretary to be endangered or threatened, and has furnished a copy of such plan and program together with all pertinent details, information, and data requested to the Secretary;

(C) the State *or local government* agency is authorized to conduct investigations to determine the status and requirements for survival of resident species of plants; and

(D) provision is made for public participation in designating resident species of plants as endangered or threatened; or that under the *State or local government*~~State~~ *or local government* program--

(i) the requirements set forth in subparagraphs (c) and (D) of this paragraph are complied with, and(ii) plans are included under which immediate attention will be given to those resident species of plants which are determined by the Secretary or the State *or local government* agency to be endangered or threatened .

and which the Secretary and the State *or local government* agency agree are most urgently in need of conservation programs; except that a cooperative agreement entered into with a State *or local government* whose program is deemed adequate and active pursuant to clause (i) and this clause shall not affect the applicability of prohibitions set forth in or authorized pursuant to section 4(d) or section 9(a)(1) with respect to the taking of any resident endangered or threatened species.

(d) ALLOCATION OF FUNDS.-- (1) The Secretary is authorized to provide financial assistance to any *State, local government, or affected private landowner* ~~State~~, through its respective *State or local government*~~State~~ agency, which has entered into a cooperative agreement pursuant to subsection (c) of this section to assist in development of programs for the conservation of endangered and threatened species or to assist in monitoring the status of candidate species pursuant to subparagraph (C) of section 4(b)(3) and recovered species pursuant to section 4(g). The Secretary shall allocate each annual appropriation made in accordance with the provisions of subsection (i) of this section to such States, *local governments, or affected private landowner* based on consideration of--

(A) the international commitments of the United States to protect endangered species or threatened species;

(B) the readiness of a *State, local government, or private landowner* ~~State~~ to proceed with a conservation program consistent with the objectives and purposes of this Act;

(C) the number of endangered species and threatened species within a *State or local jurisdiction* ~~State~~;(D) the potential for restoring endangered species and threatened species within a *State or local jurisdiction* ~~State~~;

(E) the relative urgency to initiate a program to restore and protect an endangered species or threatened species in terms of survival of the species;

(F) the importance of monitoring the status of candidate species within a *State or local jurisdiction* ~~State~~ to prevent a significant risk to the well being of any such species; and

(G) the importance of monitoring the status of recovered species within a *State or local jurisdiction* ~~State~~ to assure that such species do not return to the point at which the measures provided pursuant to this Act are again necessary.

So much of the annual appropriation made in accordance with provisions of subsection (i) of this section allocated for obligation to any *State, local government or affected private landowner* ~~State~~ for any fiscal year as remains unobligated at the close thereof is authorized to be made available to that *State, local government, or affected private landowner* ~~State~~ until the close of the succeeding fiscal year. Any amount allocated to any *State, local government, or affected private landowner* ~~State~~ which is unobligated at the end of the period during which it is available for expenditure is authorized to be made available for expenditure by the Secretary in conducting programs under this section .

(2) Such cooperative agreements shall provide for (A) the actions to be taken by the Secretary and the States, *local governments or affected private landowners*; (B) the benefits that are expected to be derived in connection with the conservation of endangered or threatened species; (C) the estimated cost of these actions; and (D) the share of such costs to be borne by the Federal Government and by the States *and local governments*; except that--

(i) the Federal share of such program costs shall not exceed 75 percent of the estimated program cost stated in the agreement; and

(ii) the Federal share may be increased to 90 percent whenever two or more States *and/or local governments* having a common interest in one or more endangered or threatened species, the conservation of which may be enhanced by cooperation of such *States and*~~States~~*/or local governments*, enter jointly into agreement with the Secretary.

The Secretary may, in his discretion, and under such rules and regulations as he may prescribe, advance funds to the State or *local governments* for financing the United States pro rata share agreed upon in the cooperative agreement. For the purposes of this section, the non-federal share may, in the discretion of the Secretary, be in the form of money or real property, the value of which will be determined by the Secretary whose decision shall be final.

(e) REVIEW OF STATE *OR LOCAL* PROGRAMS.--Any action taken by the Secretary under this section shall be subject to his periodic review at no greater than annual intervals.

(f) CONFLICTS BETWEEN FEDERAL, ~~AND~~ STATE *AND LOCAL* LAWS.--Any State *or local* law or regulation which applies with respect to the importation or exportation of, or interstate or foreign commerce in, endangered species or threatened species is void to the extent that it may effectively (1) permit what is prohibited by this Act of by any regulation which implements this Act, or (2) prohibit what is authorized pursuant to an exemption or permit provided for in this Act or in any regulation which implements this Act. This Act shall not otherwise be construed to void any State *or local* law or regulation which is intended to conserve migratory, resident, or introduced fish or wildlife, or to permit or prohibit sale of such fish or wildlife. Any State law or regulation respecting the taking of an endangered species or threatened species may be more restrictive than the exemptions or permits provided for in this Act or in any regulation which implements this Act but not less restrictive than the prohibitions so defined.

(g) TRANSITION.--(1) For purposes of this subsection, the term "establishment period" means, with respect to any State -the period beginning on the date of enactment of this Act and ending on whichever of the following dates first occurs: (A) the date of the close of the 120-day period following the adjournment of the first regular session of the legislature of such State which commences after such date of enactment, or (B) the date of the close of the 15 month period following such date of enactment. (2) The prohibitions set forth in or authorized pursuant to sections 4(d) and 9(a)(1)(B) of this Act shall not apply with respect to the taking of any resident endangered species or threatened species (other than species listed in Appendix I to the Convention or otherwise specifically covered by any other treaty or Federal law) within any State--

(A) which is then a party to a cooperative agreement with the Secretary pursuant to section 6(c) of this Act (except to the extent that the taking of any such species is contrary to the law of such State *or local government*); or

(B) except for any time within the establishment period when--

(i) the Secretary applies such prohibition to such species at the request of the State or *local government*, or

(ii) the Secretary applies such prohibition after he finds and publishes his finding, that an emergency exists posing a significant risk to the well-being of such species and that the prohibition must be applied to protect such species. The Secretary's finding and publication may be made without regard to the public hearing or comment provisions of section 553 of title 5, United States Code, or any other provision of this Act; but such prohibition shall expire 90 days after the date of its imposition unless the Secretary further extends such prohibition by publishing notice and a statement of justification of such extension.

(h) REGULATIONS.--The Secretary is authorized to promulgate such regulations as may be appropriate to carry out the provisions of this section relating to financial assistance to States or *local governments*.

(i) APPROPRIATIONS.--(1) To carry out the provisions of this section for fiscal years after September 30, 1988, there shall be deposited into a special fund known as the cooperative endangered species conservation fund, to be administered by the Secretary, an amount equal to five percent of the combined amounts covered each fiscal year into the Federal aid to wildlife restoration fund under section 3 of the Act of September 2, 1937, and paid, transferred, or otherwise credited each fiscal year to the Sport Fishing Restoration Account established under 1016 of the Act of July 18, 1984. (2) Amounts deposited into the special fund are authorized to be appropriated annually and allocated in accordance with subsection (d) of this section.

INTERAGENCY COOPERATION

SEC. ~~7~~ *8*. (a) FEDERAL AGENCY ACTIONS AND CONSULTATIONS. -- (1) The Secretary shall review other programs administered by him and utilize such programs in furtherance of the purposes of this Act. All other Federal agencies shall, in consultation with and with the

assistance of the Secretary, utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species and threatened species listed pursuant to section 4 of this Act.

(2) Each Federal agency shall, in consultation with and with the assistance of the Secretary, insure that any action, *including the adverse modification of habitat*, authorized, funded, or carried out by such agency (hereinafter in this section referred to as an "agency action") is not likely to jeopardize the continued existence of any endangered species or threatened species ~~or result in the destruction or adverse modification of habitat of such species which is determined by the Secretary, after consultation as appropriate with affected States, to be critical~~, unless such agency has been granted an exemption for such action by the Committee pursuant to subsection (h) of this section. In fulfilling the requirements of this paragraph each agency shall use the best *verifiable* scientific and commercial data available.

(3) Subject to such guidelines as the Secretary may establish, a Federal agency shall consult with the Secretary on any prospective agency action at the request of, and in cooperation with, the prospective permit or license applicant if the applicant has reason to believe that an endangered species or a threatened species may be present in the area affected by his project and that implementation of such action will likely affect such species, or *if the implementation of the Act will limit the human activity anticipated by the permit or licensee.*; (4) Each Federal agency shall confer with the Secretary on any agency action which is likely to jeopardize the continued existence of any species proposed to be listed under section 4 or result in the destruction or adverse modification of critical habitat proposed to be designated for such species. This paragraph does not require a limitation on the commitment of resources as described in subsection (d).

(5) (i) No jeopardy opinion may be rendered on the basis of effects of any non-Federal activity which does not require a license or permit, or otherwise subject to by law to federal agency action; and

(ii) no non-jeopardy opinion or reasonable and prudent alternative shall be subject to conditions asserting the authority of this Act over non-federal activity, except as specifically provided for.

(6) To the extent practicable, all consultations carried out pursuant to this section shall include affected State, local governments, and affected private property owners.

(b) OPINION OF SECRETARY.--(1)(A) Consultation under subsection (a)(2) with respect to any agency action shall be concluded within the 90-day period beginning on the date on which initiated or, subject to subparagraph (B), within such other period of time as is mutually agreeable to the Secretary and the Federal agency;

(B)~~(e~~ in the case of an agency action involving a permit or license applicant, the Secretary and the Federal agency may not mutually agree to conclude consultation within a period exceeding 90 days unless the Secretary, before the close of the 90th day referred to in subparagraph (A)--

(i) if the consultation period proposed to be agreed to will end before the 150th day after the date on which consultation was initiated, submits to the applicant a written statement setting forth--

(I) the reasons why a longer period is required;

(II) the information that is required to complete the consultation; and

(III) the estimated date on which consultation will be completed; or(ii) if the consultation period proposed to be agreed to will end 150 or more days after the date on which consultation was initiated, obtains the consent of the applicant to such period.

The Secretary and the Federal agency may mutually agree to extend a consultation period established under the preceding sentence if the Secretary, before the close of such period, obtains the consent of the applicant to the extension.

(2) Consultation under subsection (a)(3) shall be concluded within such period as is agreeable to the Secretary, the Federal agency, and the applicant concerned.

(3)(A) Promptly after conclusion of consultation under paragraph (2) or (3) of subsection (a), the Secretary shall provide to the Federal agency and the applicant, if any, a written statement setting forth the Secretary's opinion, and a summary of the information on which the opinion is

based *(including information about the impact such an opinion may have on social and economic factors or employment,* detailing how the agency action affects the species or its critical habitat. If jeopardy or adverse modification is found, the Secretary shall suggest those reasonable and prudent alternatives which he believes would not violate subsection (a)(2) *or unduly restricting human activity* and can be taken by the Federal agency or applicant in implementing the agency action.

(B) Consultation under subsection (a)(3), and an opinion based by the Secretary incident to such consultation, regarding an agency action shall be treated respectively as a consultation under subsection (a)(2), and as an opinion issued after consultation under such subsection, regarding that action if the Secretary reviews the action before it is commenced by the Federal agency and finds, and notifies such agency, that no significant changes have been made with respect to the action and that no significant change has occurred regarding the information used during the initial consultation.

(4) If after consultation under subsection (a)(2) of this section, the Secretary concludes that-

(A) the agency action will not violate such subsection, or offers reasonable and prudent alternatives which the Secretary believes would not violate such subsection;(B) the taking of an endangered species or a threatened species incidental to the agency action will not violate such subsection; and

(C) if an endangered species or threatened species of a marine mammal is involved, the taking is authorized pursuant to section 1371(a)(5) of this title; the Secretary shall provide the Federal agency and the applicant concerned, if any, with a written statement that--

(i) specifies the impact of such incidental taking on the species,

(ii) specifies those reasonable and prudent measures that the Secretary considers necessary or appropriate to minimize such impact,

(iii) in the case of marine mammals, specifies those measures that are necessary to comply with section 1371(a)(5) of this title with regard to such taking, and

(iv) sets forth the terms and conditions (including, but not limited to, reporting requirements) that must be complied with by the Federal agency or applicant (if any), or both, to implement the measures specified under clauses (ii) and (iii).

(D) The Secretary shall issue an incidental take permit upon publication on a "no jeopardy" opinion or the adoption of a reasonable and prudent alternative as decribed in subsection (4) (A) above.

(c~~C~~) ~~BIOLOGICAL~~ *NECESSARY* ASSESSMENTS. -- (1) To facilitate compliance with the requirements of subsection (a)(2) each Federal agency shall, with respect to any agency action of such agency for which no contract for construction has been entered into and for which no construction has begun on the date of enactment of the Endangered Species Act Amendments of 1978, request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action. If the Secretary advises, based on the best *verifiable* scientific and commercial data available, that such species may be present, such agency shall conduct a ~~biological~~ *series of* assessments, *such as those required by the National Environmental Policy Act, including but not limited to, biological, social, cultural, economic assessments* for the purpose of identifying any endangered species or threatened species which is likely to be affected by such action, *and the potential adverse impacts on human activity that may occur due to the listing.* Such assessments shall be completed within 180 days after the date on which initiated (or within such other period as is mutually agreed to by the Secretary and such agency, except that if a permit or license applicant is involved, the 180-day period may not be extended unless such agency provides the applicant, before the close of such period, with a written statement setting forth the estimated length of the proposed extension and the reasons therefore and, before any contract for construction is entered into and before construction is begun with respect to such action. Such assessments may be undertaken as part of a Federal agency's compliance with the requirements of section 102 of the National Environmental Policy Act of 1969 (42 U.S.C. 4332).

(2) Any person who may wish to apply for an exemption under subsection (g) of this section for that action may conduct a biological *or economic* assessments to identify any endangered species or threatened species which is likely to be affected by such action *or the adverse effects of such action on human activity.* Any such biological *or economic* assessment must, however, be conducted in cooperation with the Secretary and under the supervision of the appropriate Federal agency. *No such assessment may be considered complete until verified by competent peer review by an appropriate agency or entity other than the U.S. Fish and Wildlife Service, or the U.S. Biological Service.*

(d) LIMITATION ON COMMITMENT OF RESOURCES.--After initiation of consultation required under subsection (a)(2), the Federal agency and the permit or license applicant shall not make any irreversible or irretrievable commitment of resources with respect to the agency action which has the effect of foreclosing the formulation or implementation of any reasonable and prudent alternative measures which would not violate subsection (a)(2).

(e)(1) ESTABLISHMENT OF COMMITTEE.--There is established a committee to be known as the Endangered Species Committee (hereinafter in this section referred to as the "Committee").

(2) The Committee shall review any application submitted to it pursuant to this section and determine in accordance with subsection (h) of this section whether or not to grant an exemption from the requirements of subsection (a)(2) of this action for the action set forth in such application. (3) The Committee shall be composed of ~~seven~~ *eight* members as follows:

(A) The Secretary of Agriculture.

(B) The Secretary of the Army.

(C) The Chairman of the Council of Economic Advisors.

(D) The Administrator of the Environmental Protection Agency. Agency.

(E) The Secretary of the Interior.

(F) The Administrator of the National Oceanic and Atmospheric Administration.

(G) The President, after consideration of any recommendations received pursuant to subsection (g)(2)(B) shall appoint one individual from each affected State, as determined by the Secretary, to be a member of the Committee for the

consideration of the application for exemption for an agency action with respect to which such recommendations are made, not later than 30 days after an application is submitted pursuant to this section.

(H) The President, after consideration of any recommendation received pursuant to subsection (g) (2) (B) shall appoint from an affected local government, as determined by the Secretary, to be a member of the Committee for the consideration of the application for exemption for an agency action with respect to which such recommendation are made, not later than 30 days after an application is submitted pursuant to this section.

(4)(A) Members of the Committee shall receive no additional pay on account of their service on the Committee.

(B) While away from their homes or regular places of business in the performance of services for the Committee, members of the Committee shall be allowed travel expenses, including per diem in lieu of subsistence, in the same manner as persons employed intermittently in the Government service are allowed expenses under section 5703 of title 5 of the United States Code. (5)(A) Five members of the Committee or their representatives shall constitute a quorum for the transaction of any function of the Committee, except that, in no case shall any representative be considered in determining the existence of a quorum for the transaction of any function of the Committee if that function involves a vote by the Committee on any matter before the Committee.

(B) The Secretary of the Interior shall be the Chairman of the Committee.

(C) The Committee shall meet at the call of the Chairman or five of its members.

(D) All meetings and records of the Committee shall be open to the public.

(6) Upon request of the Committee, the head of any Federal agency is authorized to detail, on a nonreimbursable basis, any of the personnel of such agency to the Committee to assist it in carrying out its duties under this section.

(7)(A) The Committee may for the purpose of carrying out its duties under this section hold such hearings, sit and act at such times and places, take such testimony, and receive such evidence, as the Committee deems advisable.

(B) When so authorized by the Committee, any member or agent of the Committee may take any action which the Committee is authorized to take by this paragraph.

(C) Subject to the Privacy Act, the Committee may secure directly from any Federal agency information necessary to enable it to carry out its duties under this section. Upon request of the Chairman of the Committee, the head of such Federal agency shall furnish such information to the Committee.

(D) The Committee may use the United States mails in the same manner and upon the same conditions as a Federal agency.

(E) The Administrator of General Services shall provide to the Committee on a nonreimbursable basis such administrative support services as the Committee may request.

(8) In carrying out its duties under this section, the Committee may promulgate and amend such rules, regulations, and procedures, and issue and amend such orders as it deems necessary. (9) For the purpose of obtaining information necessary for the consideration of an application for an exemption under this section the Committee may issue subpoenas for the attendance and testimony of witnesses and the production of relevant papers, books, and documents.

(10) In no case shall any representative, including a representative of a member designated pursuant to paragraph (3)(G) of this subsection, be eligible to cast a vote on behalf of any member.

(f) REGULATIONS.--Not later than 90 days after the date of enactment of the Endangered Species Act Amendments of 1978~~95~~, the Secretary shall promulgate *new* regulations which set forth the form and manner in which applications for exemption shall be submitted to the Secretary and the information to be contained in such applications. Such regulations shall require that information submitted in an application by the head of any Federal agency with respect to any agency action include but not be limited to--

(1) a description of the consultation process carried out pursuant to subsection (a)(2) of this section between the head of the Federal agency and the Secretary, and

(2) a statement describing why such action cannot be altered or modified to conform with the requirements of subsection (a)(2) of this section; *and*

(3) an economic analysis of the adverse effect such an action would have on human activity.

(g) APPLICATION FOR EXEMPTION AND REPORT TO THE COMMITTEE. --(1) A Federal agency, the Governor of the State or *the chief executive officer of a local jurisdiction, or private property owner* in which an agency action will ~~occur~~ *affect*, if any, or a permit or license applicant may apply to the Secretary for an exemption for an agency action of such agency if, after consultation under subsection (a)(2), the Secretary's opinion under subsection (b) indicates that the agency action would violate subsection (a)(2). An application for an exemption shall be considered initially by the Secretary in the manner provided for in this subsection, and shall be considered by the Committee for a final determination under subsection (h) after a report is made pursuant to paragraph (5). *Any Federal agency that has received a jeopardy opinion and in which the Secretary and the affected agency fail to agree on any reasonable and prudent alternatives, must submit and application for exemption to the Committee within 15 days of notification from the Secretary that no agreement can be reached. Any non-Federal applicant for an incidental take permit, pursuant to Section 10 of this Act, who has had a habitat conservation plan rejected by the Secretary, may submit an application for an exemption.* The applicant for an exemption shall be referred to as the "exemption applicant" in this section.

(2)(A) An exemption applicant shall submit a written application to the Secretary, in a form prescribed under subsection (f), not later than 90 days after the completion of the consultation process; except that, in the case of any agency action involving a permit or license applicant, such application shall be submitted not later than 90 days after the date on which the Federal agency concerned takes final agency action with respect to the issuance of the permit or license. For purposes of the preceding sentence, the term "final agency action" means (i) a

disposition by an agency with respect to the issuance of a permit or license that is subject to administrative review; ~~whether or not such disposition is subject to judicial review;~~ or (ii) if administrative review is sought with respect to such disposition, the decision resulting after such review. Such application shall set forth the reasons why the exemption applicant considers that the agency action meets the requirements for an exemption under this subsection.

(B) Upon receipt of an application for exemption for an agency action under paragraph (1), the Secretary shall promptly (i) notify the Governor of each affected State *and the chief executive of an affected local jurisdiction*, if any, as determined by the Secretary, and request the Governors or *local officials* so notified to recommend individuals to be appointed to the Endangered Species Committee for consideration of such application; and (ii) publish notice of receipt of the application in the Federal Register including a summary of the information contained in the application and a description of the agency action with respect to which the application for exemption has been filed. (3) The Secretary shall within 20 days after the receipt of an application for exemption, or within such other period of time as is mutually agreeable to the exemption applicant and the Secretary--

(A) determine that the Federal agency concerned and the exemption applicant have-

(i) carried out the consultation responsibilities described in subsection (a) in good faith and made a reasonable and responsible effort to develop and fairly consider modifications or reasonable and prudent alternatives to the proposed agency action which would not violate subsection (a)(2)

(ii) conducted any biological *and economic* assessments required by subsection (c); and

(iii) to the extent determinable within the time provided herein, refrained from making any irreversible or irretrievable commitment of resources prohibited by subsection (d); or

(B) deny the application for exemption because the Federal agency concerned or the exemption applicant have not met the requirements set forth in subparagraph (A) (i), (ii), and (iii).

The denial of an application under subparagraph (B) shall be considered final agency action for purposes of chapter 7 of title 5, United States Code.

(4) If the Secretary determines that the Federal agency concerned and the exemption applicant have met the requirements set forth in paragraph (3)(A) (i), (ii) and (iii) he shall, in consultation with the Members of the Committee, hold a hearing on the application for exemption in accordance with sections 554, 555, and 556 (other than subsection (b) (1) and (2) thereof) of title 5, United States Code, and prepare the report to be submitted pursuant to paragraph (5).

(5) Within 140 days after making the determinations under paragraph (3) or within such other period of time as is mutually agreeable to the exemption applicant and the Secretary, the Secretary shall submit to the Committee a report discussing--

(A) the availability of reasonable and prudent alternatives to the agency action, and the nature and extent of the benefits of the agency action and of alternative courses of action consistent with conserving the species of the critical habitat;

(B) a summary of the evidence concerning whether or not the agency action is in the public interest and is of national or regional significance *including economic and social implications of the agency action*;

(C) appropriate reasonable mitigation and enhancement measures which should be considered by the Committee; and

(D) whether the Federal agency concerned and the exemption applicant refrained from making any irreversible or irretrievable commitment of resources prohibited by subsection (d).

(6) To the extent practicable within the time required for action under subsection (g) of this section, and except to the extent inconsistent with the requirements of this section, the consideration of any application for an exemption under this section and the conduct of any hearing under this subsection shall be in accordance with sections 554, 555, and 556 (other than subsection (b)(3) of section 556) of title 5, United States Code.

(7) Upon request of the Secretary, the head of any Federal agency is authorized to detail, on a nonreimbursable basis, any of the personnel of such agency to the Secretary to assist him in carrying out his duties under this section.

(8) All meetings and records resulting from activities pursuant to this subsection shall be open to the public.

(9) Affected private lanowners pursuing activites pursuant to this section shall not be subject to subsections 102 (2) (C) and (3) of the National Environmental Policy Act.

(h) EXEMPTION.--(1) The Committee shall make a final determination whether or not to grant an exemption within 30 days after receiving the report of the Secretary pursuant to subsection (g)(5). The Committee shall grant an exemption from the requirements of subsection (a)(2) for an agency action if, by a vote of not less than five of its members voting in person--(A) it determines on the record, based on the report of the Secretary, the record of the hearing held under subsection (g)(4), and on such other testimony or evidence as it may receive, that--

(i) there are no reasonable and prudent alternatives to the agency action;

(ii) the benefits of such action clearly outweigh the benefits of alternative courses of action consistent with conserving the species or its critical habitat, and such action is in the public interest;

(iii) the action is of regional or national significance; and

(iv) neither the Federal agency concerned nor the exemption applicant made any irreversible or irretrievable commitment of resources prohibited by subsection (d); and

(B) it establishes such reasonable mitigation and enhancement measures, including, but not limited to, live propagation, transplantation, and habitat acquisition and improvement, as are necessary and appropriate to minimize the adverse effects of the agency action upon the endangered species, threatened species, or critical habitat concerned.

Any final determination by Committee under this subsection shall be considered final agency action for purposes of chapter 7 of title 5 of the United States Code.

(2)(A) Except as provided in subparagraph (B), an exemption for an agency action granted under paragraph (1) shall constitute a permanent exemption with respect to all endangered or threatened species for the purposes of completing such agency action--

(i) regardless whether the species was identified in the biological assessment; and

(ii) only if a biological *and economic* assessments has been conducted under subsection (c) with respect to such agency action.

(B) An exemption shall be permanent under subparagraph (A) unless--(i) the Secretary finds, based on the best scientific and commercial data available, that such exemption would result in the extinction of a species that was not the subject of consultation under subsection (a)(2) or was not identified in any biological assessment conducted under subsection (c), and

(ii) the Committee determines within 60 days after the date of the Secretary's finding that the exemption should not be permanent.

If the Secretary makes a finding described in clause (i), the Committee shall meet with respect to the matter within 30 days after the date of the finding.

(i) REVIEW BY SECRETARY OF STATE.--Notwithstanding any other provision of this Act, the Committee shall be prohibited from considering for exemption any application made to it, if the Secretary of State, after a review of the proposed agency action and its potential implications, and after hearing, certifies, in writing, to the Committee within 60 days of any application made under this section that the granting of any such exemption and the carrying out of such action would be in violation of an international treaty obligation or other international obligation of the United States The Secretary of State shall, at the time of such certification, publish a copy thereof in the Federal Register

- (j) Notwithstanding any other provision of this Act, the Committee shall grant an exemption for any agency action if the Secretary of Defense finds that such exemption is necessary for reasons of national security.

(k) SPECIAL PROVISIONS.--An exemption decision by the Committee under this section shall not be a major Federal action for purposes of the National Environmental Policy Act of 1969 (42 U.S.C 4321 et seq.): *Provided*, That an environmental impact statement which discusses the impacts upon endangered species or threatened species or their critical habitats shall have been previously prepared with respect to any agency action exempted by such order.

(l) COMMITTEE ORDERS. - (1) If the Committee determines under subsection (h) that an exemption should be granted with respect to any agency action, the Committee shall issue an order granting the exemption and specifying the mitigation and enhancement measures established pursuant to subsection (h) which shall be carried out and paid for by the exemption applicant in implementing the agency action. All necessary mitigation and enhancement measures shall be authorized prior to the implementing of the agency action and funded concurrently with all other project features.

(2) ~~The applicant receiving such exemption shall include the costs of such mitigation and enhancement measures within the overall costs of continuing the proposed action. Notwithstanding the preceding sentence the costs of such measures shall not be treated as project costs for the purpose of computing benefit-cost or other ratios for the proposed action. Any applicant may request the Secretary to carry out such mitigation and enhancement measures. The costs incurred by the Secretary in carrying out any such measures shall be paid by the applicant receiving the exemption.~~ No later than one year after the granting of an exemption, ~~the exemption applicant~~ *Secretary* shall submit to the Council on Environmental Quality a report describing ~~its~~ *all efforts at* compliance with the mitigation and enhancement measures prescribed by this section, *including those undertaken by State, affected local governments or affected private landowners pursuant to agreements with the Secretary.*. Such report shall be submitted annually until all such mitigation and enhancement measures have been completed. Notice of the public availability of such reports shall be published in the Federal Register by the Council on Environmental Quality.

(m) NOTICE.--The 60-day notice requirement of section 11(g) of this Act shall not apply with respect to review of any final determination of the Committee under subsection (h) of this section granting an exemption from the requirements of subsection (a)(2) of this section.

(n) JUDICIAL REVIEW.--Any person, as defined by section 3(13) of this Act, may obtain judicial review, under chapter 7 of title 5 of the United States Code, of any decision of the Endangered Species Committee under subsection (h) in the United States Court of Appeals for (1) any circuit wherein the agency action concerned will be, or is being, carried out, or (2) in any case in which the agency action will be, or is being, carried out outside of any circuit, the District of Columbia, by filing in such court within 90 days after the date or issuance of the decision, a written petition for review. A copy of such petition shall be transmitted by the clerk of the court to the Committee and the Committee shall file in the court the record in the proceeding, as provided in Section 2112, of title 28, United States Code. Attorneys designated by the Endangered Species Committee may appear for, and represent the Committee in any action for review under this subsection.

(o) EXEMPTION AS PROVIDING EXCEPTION ON TAKING OF ENDANGERED SPECIES.-- Notwithstanding sections 1533(d) and 1538(a)(1)(B) and (C) of this title, sections 1371 and 1372 of this title, or any regulation promulgated to implement any such section--

(1) any action for which an exemption is granted under subsection (h) of this section shall not be considered to be a taking of any endangered species or threatened species with respect to any activity which is necessary to carry out such action; and

(2) any taking that is in compliance with the terms and conditions specified in a written statement provided under subsection (b)(4)(iv) of this section shall not be considered to be a prohibited taking of the species concerned.

(p) EXEMPTIONS IN PRESIDENTIALLY DECLARED DISASTER AREAS.-- In any area which has been declared by the President to be a major disaster area under the Disaster Relief Act of 1974, the President is authorized to make the determinations required by subsections (g) and (h) of this section for any project for the repair or replacement of a public facility substantially as it existed prior to the disaster under section 401 or 402 of the Disaster Relief Act of 1974.

and which the President determines (1) is necessary to prevent the recurrence of such a natural disaster and to reduce the potential loss of human life, and (2) to involve an emergency situation which does not allow the ordinary procedures of this section to be followed. Notwithstanding any other provision of this section, the Committee shall accept the determinations of the President under this subsection.

INTERNATIONAL COOPERATION

SEC. 8 9. (a) FINANCIAL ASSISTANCE.--As a demonstration of the commitment of the United States to the worldwide protection of endangered species and threatened species, the President may, subject to the provisions of section 1415 of the Supplemental Appropriation Act, 1953 (31 U.S.C. 724), use foreign currencies accruing to the United States Government under the Agricultural Trade Development and Assistance Act of 1954 or any other law to provide to any foreign country (with its consent) assistance in the development and management of programs in that country which the Secretary determines to be necessary or useful for the conservation of any endangered species or threatened species listed by the Secretary pursuant to section 4 of this Act. The President shall provide assistance (which includes, but is not limited to, the acquisition, by lease or otherwise, of lands, waters, or interests therein) to foreign countries under this section under such terms and conditions as he deems appropriate. Whenever foreign currencies are available for the provision of assistance under this section, such currencies shall be used in preference to funds appropriated under the authority of section 15 of this Act.

(b) ENCOURAGEMENT OF FOREIGN PROGRAMS -- In order to out further the provisions of this Act, the Secretary, through the Secretary of State shall encourage --

(1) foreign countries to provide for the conservation of fish or wildlife and plants including endangered species and threatened species listed pursuant to section 4 of this Act;

(2) the entering into of bilateral or multilateral agreements with foreign countries to provide for such conservation; and

(3) foreign persons who directly or indirectly take fish or wildlife or plants in foreign countries or on the high seas for importation into the United States for commercial or other purposes to develop and carry out with such assistance as he may provide, conservation practices designed to enhance such fish or wildlife or plants and their habitat.

(C) PERSONNEL.--After consultation with the Secretary of State the Secretary may--

(1) assign or otherwise make available any officer or employee of his department for the purpose of cooperating with foreign countries and international organizations in developing personnel resources and programs which promote the conservation of fish or wildlife or plants, and(2) conduct or provide financial assistance for the educational training of foreign personnel, in this country or abroad, in fish, wildlife, or plant management, research and law enforcement and to render professional assistance abroad in such matters.

(d) INVESTIGATIONS.--After consultation with the Secretary of State and the Secretary of the Treasury, as appropriate, the Secretary may conduct or cause to be conducted such law enforcement investigations and research abroad as he deems necessary to carry out the purposes of this Act.

CONVENTION IMPLEMENTATION

SEC.-8 9A. (a) MANAGEMENT AUTHORITY AND SCIENTIFIC AUTHORITY.--The Secretary of the Interior (hereinafter in this section referred to as the "Secretary") is designated as the Management Authority and the Scientific Authority for purposes of the Convention and the respective functions of each such Authority shall be carried out through the United States Fish and Wildlife Service.

(b) MANAGEMENT AUTHORITY FUNCTIONS.--The Secretary shall do all things necessary and appropriate to carry out the functions of the Management Authority under the Convention.

(c) SCIENTIFIC AUTHORITY FUNCTIONS. -- (1) The Secretary shall do all things necessary and appropriate to carry out the functions of the Scientific Authority under the Convention.

(2) The Secretary shall base the determinations and advice given by him under Article IV of the Convention with respect to wildlife upon the best available biological information derived from professionally accepted wildlife management practices; but is not required to make, or require any State to make, estimates of population size in making such determinations or giving such advice.

(d) RESERVATIONS BY THE UNITED STATES UNDER CONVENTION.--If the United States votes against including any species in Appendix I or II of the Convention and does not enter a reservation pursuant to paragraph (3) of Article XV of the Convention with respect to that species, the Secretary of State, before the 90th day after the last day on which such a reservation could be entered, shall submit to the Committee on Merchant Marine and Fisheries of the House of Representatives, and to the Committee on the Environment and Public Works of the Senate, a written report setting forth the reasons why such a reservation was not entered.

(e) WILDLIFE PRESERVATION IN WESTERN HEMISPHERE.--(1) The Secretary of the Interior (hereinafter in this subsection referred to as the "Secretary"), in cooperation with the Secretary of State shall act on behalf of, and represent, the United States in all regards as required by the Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere (56 Stat. 1354 T.S. 982, hereinafter in this subsection referred to as the "Western Convention"). In the discharge of these responsibilities, the Secretary and the Secretary of State shall consult with the Secretary of Agriculture, the Secretary of Commerce, and the heads of other agencies with respect to matters relating to or affecting their areas of responsibility.

(2) The Secretary and the Secretary of State shall, in cooperation with the contracting parties to the Western Convention and, to the extent feasible and appropriate, with the participation of State agencies, take such steps as are necessary to implement the Western Convention. Such steps shall include, but not be limited to--

(A) cooperation with contracting parties and international organizations for the purpose of developing personnel resources and programs that will facilitate implementation of the Western Convention;

(B) identification of those species of birds that migrate between the United States and other contracting parties, and the habitats upon which those species depend, and the implementation of cooperative measures to ensure that such species will not become endangered or threatened; and

(C) identification of measures that are necessary and appropriate to implement those provisions of the Western Convention which address the protection of wild plants.

(3) No later than September 30, 1985, the Secretary and the Secretary of State shall submit a report to Congress describing those steps taken in accordance with the requirements of this subsection and identifying the principal remaining actions yet necessary for comprehensive and effective implementation of the Western Convention.

(4) The provisions of this subsection shall not be construed as affecting the authority, jurisdiction, or responsibility of the several States to manage, control, or regulate resident fish or wildlife under State law or regulations.

PROHIBITED ACTS

SEC. ~~9~~ *10*. (a) GENERAL.--(1) Except as provided in sections 6(g)(2) and 10 of this Act, with respect to any endangered species of fish or wildlife listed pursuant to section 4 of this Act it is unlawful for any person subject to the jurisdiction of the United States to--

(A) import any such species into, or export any such species from the United States;

(B) take any such species within the United States or the territorial sea of the United States;

(C) take any such species upon the high seas;

(D) possess, sell, deliver, carry, transport, or ship, by any means whatsoever, any such species taken in violation of subparagraphs (B) and (C);

(E) deliver, receive, carry, transport, or ship in interstate or foreign commerce, by any means whatsoever and in the course of a commercial activity, any such species

(F) sell or offer for sale in interstate or foreign commerce any such species; or

(G) violate any regulation pertaining to such species or to any threatened species of fish or wildlife listed pursuant to section 4 of this Act and promulgated by the Secretary pursuant to authority provided by this Act.

(2) Except as provided in sections 6(g)(2) and 10 of this Act, with respect to any endangered species of plants listed pursuant to section 4 of this Act, it is unlawful for any person subject to the jurisdiction of the United States to --

(A) import any such species into, or export any such species from, the United States;(B) remove and reduce to possession any such species from areas under Federal jurisdiction; maliciously damage or destroy any such species on any such area; or remove, cut, dig up, or damage or destroy any such species on any other area in knowing violation of any law or regulation of any state or in the course of any violation of a state criminal trespass law;".

(C) deliver, receive, carry, transport, or ship in interstate or foreign commerce, by any means whatsoever and in the course of a commercial activity, any such species;

(D) sell or offer for sale in interstate or foreign commerce any such species; or

(E) violate any regulation pertaining to such species or to any threatened species of plants listed pursuant to section 4 of this Act and promulgated by the Secretary pursuant to authority provided by this Act.

(b)(1) SPECIES HELD IN CAPTIVITY OR CONTROLLED ENVIRONMENT.-- The provisions of subsections (a)(1)(A) and (a)(l)(G) of this section shall not apply to any fish or wildlife which was held in captivity or in a controlled environment on (A) December 28, 1973, or (B) the date of the publication in the Federal Register of a final regulation adding such fish or wildlife species to any list published pursuant to subsection (c) of section 4 of this Act: *Provided*, That such holding and any subsequent holding or use of the fish or wildlife was not in the course of a commercial activity. With respect to any act prohibited by subsections (a)(1)(A) and (a)(1)(G) of

this section which occurs after a period of 180 days from (i) December 28, 1973, or (ii) the date of publication in the Federal Register of a final regulation adding such fish or wildlife species to any list published pursuant to subsection (c) of section 4 of this Act, there shall be a rebuttable presumption that the fish or wildlife involved in such act is not entitled to the exemption contained in this subsection.

(2)(A) The provisions of subsections (a)(1) shall not apply to--

(i) any raptor legally held in captivity or in a controlled environment on the effective date of the Endangered Species Act Amendments of 1978; or(ii) any progeny of any raptor described in clause (i); until such time as any such raptor or progeny is intentionally returned to a wild state.

(B) Any person holding any raptor or progeny described in subparagraph (A) must be able to demonstrate that the raptor or progeny does, in fact, qualify under the provisions of this paragraph, and shall maintain and submit to the Secretary, on request, such inventories, documentation, and records as the Secretary may by regulation require as being reasonably appropriate to carry out the purposes of this paragraph. Such requirements shall not unnecessarily duplicate the requirements of other rules and regulations promulgated by the Secretary.

(C) VIOLATION OF CONVENTION. -- (1) It is unlawful for any person subject to the jurisdiction of the United States to engage in any trade in any specimens contrary to the provisions of the Convention, or to possess any specimens traded contrary to the provisions of the Convention, including the definitions of terms in article I thereof.

(2) Any importation into the United States of fish or wildlife shall, if--

(A) such fish or wildlife is not an endangered species listed pursuant to section 4 of this Act but is listed in Appendix II of the Convention;

(B) the taking and exportation of such fish or wildlife is not contrary to the provisions of the Convention and all other applicable requirements of the Convention have been satisfied;

(C) the applicable requirements of subsections (d), (e), and (f) of this section have been satisfied; and

(D) such importation is not made in the course of a commercial activity;

be presumed to be an importation not in violation of any provision of this Act or any regulation issued pursuant to this Act.

(d) IMPORTS AND EXPORTS.--

(1) IN GENERAL.--It is unlawful for any person, without first having obtained permission from the Secretary, to engage in business--(A) as an importer or exporter of fish or wildlife (other than shellfish and fishery products which (i) are not listed pursuant to section 4 of this Act as endangered species or threatened species, and (ii) are imported for purposes of human or animal consumption or taken in waters under the jurisdiction of the United States or on the high seas for recreational purposes) or plants; or

(B) as an importer or exporter of any amount of raw or worked African elephant ivory.

(2) REQUIREMENTS.--Any person required to obtain permission under paragraph (1) of this subsection shall--

(A) keep such records as will fully and correctly disclose each importation or exportation of fish, wildlife, plants, or African elephant ivory made by him and the subsequent disposition made by him with respect to such fish, wildlife, plants, or ivory;

(B) at all reasonable times upon notice by a duly authorized representative of the Secretary, afford such representative access to his place of business, an opportunity to examine his inventory of imported fish, wildlife, plants, or African elephant ivory and the records required to be kept under subparagraph (A) of this paragraph, and to copy such records; and

(C) file such reports as the Secretary may require.

(3) REGULATIONS.--The Secretary shall prescribe such regulations as are necessary and appropriate to carry out the purposes of this subsection.

(4) RESTRICTION ON CONSIDERATION OF VALUE OR AMOUNT OF AFRICAN ELEPHANT IVORY IMPORTED OR EXPORTED.--In granting permission under this

subsection for importation or exportation of African elephant ivory, the Secretary shall not vary the requirements for obtaining such permission on the basis of the value or amount of ivory imported or exported under such permission. (e) REPORTS.--It is unlawful for any person importing or exporting fish or wildlife (other than shellfish and fishery products which (1) are not listed pursuant to section 4 of this Act as endangered or threatened species, and (2) are imported for purposes of human or animal consumption or taken in waters under the jurisdiction of the United States or on the high seas for recreational purposes) or plants to fail to file any declaration or report as the Secretary deems necessary to facilitate enforcement of this Act or to meet the obligations of the Convention.

(f) DESIGNATION OF PORTS. -- (1) It is unlawful for any person subject to the jurisdiction of the United States to import into or export from the United States any fish or wildlife (other than shellfish and fishery products which (A) are not listed pursuant to section 4 of this Act as endangered species or threatened species, and (B) are imported for purposes of human or animal consumption or taken in waters under the jurisdiction of the United States or on the high seas for recreational purposes) or plants except at a port or ports designated by the Secretary of the Interior. For the purposes of facilitating enforcement of this Act and reducing the costs thereof, the Secretary of the Interior, with approval of the Secretary of the Treasury and after notice and opportunity for public hearing, may, by regulation, designate ports and change such designations. The Secretary of the Interior, under such terms and conditions as he may prescribe, may permit the importation or exportation at nondesignated ports in the interest of the health or safety of the fish or wildlife or plants, or for other reasons if, in his discretion, he deems it appropriate and consistent with the purpose of this subsection.

(2) Any port designated by the Secretary of the Interior under the authority of section 4(d) of the Act of December 5, 1969 (16 U.S.C. 666cc-4(d), shall, if such designation is in effect on the day before the date of the enactment of this Act, be deemed to be a port designated by the Secretary under paragraph (1) of this subsection until such time as the Secretary otherwise provides. (g) VIOLATIONS.--It is unlawful for any person subject to the jurisdiction of the

United States to attempt to commit, solicit another to commit, or cause to be committed, any offense defined in this section.

EXCEPTIONS

Sec. ~~10~~ *11*. (a) PERMITS. -- (1) The Secretary may permit, under such terms and conditions as he shall prescribe--

(A) any act otherwise prohibited by section 9 for scientific purposes or to enhance the propagation or survival of the affected species, including, but not limited to, acts necessary for the establishment and maintenance of experimental populations pursuant subsection (j); or

(B) any taking otherwise prohibited by section 9(a)(1)(B) if such taking is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity.

(2)(A) No permit may be issued by the Secretary authorizing any taking referred to in paragraph (1)(B) unless the applicant therefor submits to the Secretary a conservation plan that specifies

(i) the impact which will likely result from such taking;

(ii) what steps the applicant will take to minimize and mitigate such impacts, and the funding that will be available to implement such steps;

(iii) what alternative actions to such taking the applicant considered and the reasons why such alternatives are not being utilized; and

(iv) such other measures that the Secretary may require as being necessary or appropriate for purposes of the plan.

(B) If the Secretary finds, after opportunity for public comment, with respect to a permit application and the related conservation plan that--

(i) the taking will be incidental;(ii) the applicant will, to the maximum extent practicable, minimize and mitigate the impacts of such taking;

(iii) the applicant will ensure that adequate funding for the plan will be provided;

(iv) the taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild; and

(v) the measures, if any, required under subparagraph (A)(iv) will be met;

and he has received such other assurances as he may require that the plan will be implemented, the Secretary shall issue the permit. The permit shall contain such terms and conditions as the Secretary deems necessary or appropriate to carry out the purposes of this paragraph, including, but not limited to, such reporting requirements as the Secretary deems necessary for determining whether such terms and conditions are being complied with.

(C) The cost of any plan required by subsection (2)(A) of a non-federal entity shall be shared between the applicant and the Secretary, subject to regulations promulgated within 60 days of enactment of this Act. When promulgating such regulations, the Secretary shall take into account the cost of the plans, the ability of the applicant to share in the costs, and the willingess of the applicant to enter into voluntary agreements with the Secretary to facilitate the implementation of the plan. In promulgating these regulations, the Secretary shall not require such cost sharing as to jeopardize the economic viability of the applicant.

(~~C~~*D*) The Secretary shall revoke a permit issued under this paragraph if he finds that the permittee is not complying with the terms and conditions of the permit.

(E) Affected private landowner activites required or allowed by this section shall not be subject to subsection 102 (2) (C) and (3) of the National Environmental Policy Act

(b) HARDSHIP EXEMPTIONS.--(1) If any person enters into a contract with respect to a species of fish or wildlife or plant before the date of the publication in the Federal Register of notice of consideration of that species as an endangered species and the subsequent listing of that species as an endangered species pursuant to section 4 of this Act will cause undue hardship to such person under the contract, the Secretary, in order to minimize such hardship, may exempt such person from the application of section 9(a) of this Act to the extent the Secretary deems appropriate if such person applies to him for such exemption and includes with such application such information as the Secretary may require to prove such hardship; except that (A) no such exemption shall be for a duration of more than one year from the date

of publication in the Federal Register of notice of consideration of the species concerned, or shall apply to a quantity of fish or wildlife or plants in excess of that specified by the Secretary; (B) the one-year period for those species of fish or wildlife listed by the Secretary as endangered prior to the effective date of this Act shall expire in accordance with the terms of section 3 of the Act of December 5, 1969 (83 Stat. 275); and (C) no such exemption may be granted for the importation or exportation of a specimen listed in Appendix I of the Convention which is to be used in a commercial activity.

(2) As used in this subsection, the term "undue economic hardship" shall include, but not be limited to:

(A) substantial economic loss resulting from inability caused by this Act to perform contracts with respect to species of fish and wildlife entered into prior to the date of publication in the Federal Register of a notice of consideration of such species as an endangered species;

(B) substantial economic loss to persons who, for the year prior to the notice of consideration of such species as an endangered species, derived a substantial portion of their income from the lawful taking of any listed species, which taking would be made unlawful under this Act; or

(C) curtailment of subsistence taking made unlawful under this Act by persons (i) not reasonably able to secure other sources of subsistence; and (ii) dependent to a substantial extent upon hunting and fishing for subsistence; and (iii) who must engage in such curtailed taking for subsistence purposes.

(3) The Secretary may make further requirements for a showing of undue economic hardship as he deems fit. Exceptions granted under this section may be limited by the Secretary in his discretion as to time, area, or other factor of applicability.

(C) NOTICE AND REVIEW.--The Secretary shall publish notice in the Federal Register of each application for an exemption or permit which is made under this section. Each notice shall invite the submission from interested Parties, within thirty days after the date of the notice, of written data, views, or arguments with respect to the application; except that such thirty-day

period may be waived by the Secretary in an emergency situation where the health or life of an endangered animal is threatened and no reasonable alternative is available to the applicant, but notice of any such waiver shall be published by the Secretary in the Federal Register within ten days following the issuance of the exemption or permit. Information received by the Secretary as part of any application shall be available to the public as a matter of public record at every stage of the proceeding.

(d) PERMIT AND EXEMPTION POLICY.--The Secretary may grant exceptions under subsections (a)(1)(A) and (b) of this section only if he finds and publishes his finding in the Federal Register that (1) such exceptions were applied for in good faith, (2) if granted and exercised will not operate to the disadvantage of such endangered species, and (3) will be consistent with the purposes and policy set forth in section 2 of this Act.

(e) ALASKA NATIVES. -- (1) Except as provided in paragraph (4) of this subsection the provisions of this Act shall not apply with respect to the taking of any endangered species or threatened species or the importation of any such species taken pursuant to this section, by--

(A) any Indian, Aleut, or Eskimo who is an Alaskan Native who resides in Alaska, or

(B) any non-native permanent resident of an Alaskan native village;

if such taking is primarily for subsistence purposes. Non-edible byproducts of species taken pursuant to this section may be sold in interstate commerce when made into authentic native articles of handicrafts and clothing; except that the provisions of this subsection shall not apply to any non-native resident of an Alaskan native village found by the Secretary to be not primarily dependent upon the taking of fish and wildlife for consumption or for the creation and sale of authentic native articles of handicrafts and clothing.

(2) Any taking under this subsection may not be accomplished in a wasteful manner.

(3) As used in this subsection--(i) The term "subsistence" includes selling any edible portion of fish or wildlife in native villages and towns in Alaska for native consumption within native villages or towns, and

(ii) The term "authentic native articles of handicrafts and clothing" means items composed wholly or in some significant respect to natural materials, and which are produced, decorated or fashioned in the exercise of traditional native handicrafts without the use of pantographs, multiple carvers, or other mass copying devices. Traditional native handicrafts include, but are not limited to, weaving carving, stitching, sewing, lacing, beading, drawing, and painting

(4) Notwithstanding the provisions of paragraph (l) of this subsection, whenever the Secretary determines that any species of fish or wildlife which is subject to taking under the provisions of this subsection is an endangered species or threatened species, and that such taking materially and negatively affects the threatened or endangered species, he may prescribe regulations upon the taking of such species by any such Indian, Aleut, Eskimo, or non-native Alaskan resident of an Alaskan native village. Such regulations may be established with reference to species, geographical description of the area included, the season for taking, or any other factors related to the reason for establishing such regulations and consistent with the policy of this Act. Such regulations shall be prescribed after a notice and hearings in the affected judicial districts of Alaska and as otherwise required by section 103 of the Marine Mammal Protection Act of 1972, and shall be removed as soon as the Secretary determines that the need for their impositions has disappeared.

(f)(l) As used in this subsection--

(A) The term "pre-Act endangered species part" means--

(i) any sperm whale oil, including derivatives thereof, which was lawfully held within the United States on December 28, 1973, in the course of a commercial activity; or(ii) any finished scrimshaw product, if such product or the raw material for such product was lawfully held within the United States on December 28, 1973, in the course of a commercial activity.

(B) The term "scrimshaw product" means any art form which involves the substantial etching or engraving of designs upon, or the substantial carving of figures, patterns, or designs from, any bone or tooth of any marine mammal of

the order Cetacea. For purposes of this subsection, polishing or the adding of minor superficial markings does not constitute substantial etching, engraving, or carving.

(2) The Secretary, pursuant to the provisions of this subsection may exempt, if such exemption is not in violation of the Convention, any pre-Act endangered species part from one or more of the following prohibitions:

(A) The prohibition on exportation from the United States set forth in section 9(a)(1)(A) of this Act.

(B) Any prohibition set forth in section 9(a)(1) (E) or (F) of this Act.

(3) Any person seeking an exemption described in paragraph (2) of this subsection shall make application therefor to the Secretary in such form and manner as he shall prescribe, but no such application may be considered by the Secretary unless the application--

(A) is received by the Secretary before the close of the one year period beginning on the date on which regulations promulgated by the Secretary to carry out this subsection first take effect;

(B) contains a complete and detailed inventory of all pre-Act endangered species parts for which the applicant seeks exemption;

(C) is accompanied by such documentation as the Secretary may require to prove that any endangered species part or product claimed by the applicant to be a pre-Act endangered species part is in fact such a part; and(D) contains such other information as the Secretary deems necessary and appropriate to carry out the purposes of this subsection.

(4) If the Secretary approves any application for exemption made under this subsection, he shall issue to the applicant a certificate of exemption which shall specify--

(A) any prohibition in section 9(a) of this Act which is exempted;

(B) the pre-Act endangered species parts to which the exemption applies;

(C) the period of time during which the exemption is in effect, but no exemption made under this subsection shall have force and effect after the close of the three-year period

beginning on the date of issuance of the certificate unless such exemption is renewed under paragraph (8); and

(D) any term or condition prescribed pursuant to paragraph (5) (A) or (B), or both, which the Secretary deems necessary or appropriate.

(5) The Secretary shall prescribe such regulations as he deems necessary and appropriate to carry out the purposes of this subsection. Such regulations may set forth--

(A) terms and conditions which may be imposed on applicants for exemptions under this subsection (including, but not limited to, requirements that applicants register inventories keep complete sales records, permit duly authorized agents of the Secretary to inspect such inventories and records, and periodically file appropriate reports with the Secretary); and

(B) terms and conditions which may be imposed on any subsequent purchaser of any pre-Act endangered species part covered by an exemption granted under this subsection;

to insure that any such part so exempted is adequately accounted for and not disposed of contrary to the provisions of this Act. No regulation prescribed by the Secretary to carry out the purposes of this subsection shall be subject to section 4(f)(2)(A)(i) of this Act.

(6)(A) Any contract for the sale of pre-Act endangered species parts which is entered into by the Administrator of General Services prior to the effective date of this subsection and pursuant to the notice published in the Federal Register on January 9, 1973, shall not be rendered invalid by virtue of the fact that fulfillment of such contract may be prohibited under section 9(a)(1)(F).

(B) In the event that this paragraph is held invalid, the validity of the remainder of the Act, including the remainder of this subsection, shall not be affected.

(7) Nothing in this subsection shall be construed to--

(A) exonerate any person from any act committed in violation of paragraphs (1)(A), (1)(E), or (1)(F) of section 9(a) prior to the date of enactment of this subsection; or

(B) immunize any person from prosecution for any such act.

(8)(A)(i) Any valid certificate of exemption which was renewed after October 13, 1982, and was in effect on March 31, 1988, shall be deemed to be renewed for a 6-month period beginning on the date of enactment of the Endangered Species Act Amendments of 1988. Any person holding such a certificate may apply to the Secretary for one additional renewal of such certificate for a period not to exceed 5 years beginning on the date of such enactment.

(B) If the Secretary approves any application for renewal of an exemption under this paragraph, he shall issue to the applicant a certificate of renewal of such exemption which shall provide that all terms, conditions, prohibitions, and other regulations made applicable by the previous certificate shall remain in effect during the period of the renewal.

(C) No exemption or renewal of such exemption made under this subsection shall have force and effect after the expiration date of the certificate of renewal of such exemption issued under this paragraph.

(D) No person may, after January 31, 1984, sell or offer for sale in interstate or foreign commerce, any pre-Act finished scrimshaw product unless such person holds a valid certificate of exemption issued by the Secretary under this subsection, and unless such product or the raw material for such product was held by such person on October 13, 1982.

(g) In connection with any action alleging a violation of section 9 any person claiming the benefit of any exemption or permit under this Act shall have the burden of proving that the exemption or permit is applicable, has been granted, and was valid and in force at the time of the alleged violation.

(h) CERTAIN ANTIQUE ARTICLES.--(1) Sections 4(d), 9(a), and 9(c) do not apply to any article which--

(A) is not less than 100 years of age;

(B) is composed in whole or in part of any endangered species or threatened species listed under section 4;

(C) has not been repaired or modified with any part of any such species on or after the date of the enactment of this Act; and

(D) is entered at a port designated under paragraph (3).

(2) Any person who wishes to import an article under the exception provided by this subsection shall submit to the customs officer concerned at the time of entry of the article such documentation as the Secretary of the Treasury, after consultation with the Secretary of the Interior, shall by regulation require as being necessary to establish that the article meets the requirements set forth in paragraph (1) (A), (B), and (C).

(3) The Secretary of the Treasury, after consultation with the Secretary of the Interior, shall designate one port within each customs region at which articles described in paragraph (1) (A), (B), and (C) must be entered into the customs territory of the United States.

(4) Any person who imported, after December 27, 1973, and on or before the date of the enactment of the Endangered Species Act Amendments of 1978, any article described in paragraph (1) which--

(A) was not repaired or modified after the date of importation with any part of any endangered species or threatened species listed under section 4;

(B) was forfeited to the United States before such date of the enactment, or is subject to forfeiture to the United States on such date of enactment, pursuant to the assessment of a civil penalty under section 11; and

(C) is in the custody of the United States on such date of enactment;may, before the close of the one-year period beginning on such date of enactment make application to the Secretary for return of the article. Application shall be made in such form and manner, and contain such documentation, as the Secretary prescribes. If on the basis of any such application which is timely filed, the Secretary is satisfied that the requirements of this paragraph are met with respect to the article concerned, the Secretary shall return the article to the applicant and the importation of such article shall, on and after the date of return, be deemed to be a lawful importation under this Act.

(i) NONCOMMERCIAL TRANSSHIPMENTS.--Any importation into the United States of fish or wildlife shall, if--

(1) such fish or wildlife was lawfully taken and exported from the country of origin and country of reexport. if any;

(2) such fish or wildlife is in transit or transshipment through any place subject to the jurisdiction of the United States en route to a country where such fish or wildlife may be lawfully imported and received;

(3) the exporter or owner of such fish or wildlife gave explicit instructions not to ship such fish or wildlife through any place subject to the jurisdiction of the United States, or did all that could have reasonably been done to prevent transshipment and the circumstances leading to the transshipment were beyond the exporter's or owner's control

(4) the applicable requirements of the Convention have been satisfied; and

(5) such importation is not made in the course of a commercial activity,

be an importation not in violation of any provision of this Act or any regulation issued pursuant to this Act while such fish or wildlife remains in the control of the United States Customs Service.

(j) EXPERIMENTAL POPULATIONS. --(1) For purposes of this subsection, the term "experimental population" means any population (including any offspring arising solely therefrom) authorized by the Secretary for release under paragraph (2), but only when, and at such times as, the population is wholly separate geographically from nonexperimental populations of the same species.

(2)(A) The Secretary may authorize the release (and the related transportation) of any population (including eggs, propagules, or individuals) of an endangered species or a threatened species outside the current range of such species if the Secretary determines that such release will further the conservation of such species.

(B) Before authorizing the release of any population under subparagraph (A), the Secretary shall by regulation identify the population and determine, on the basis of the best available information, whether or not such population is essential to the continued existence of an endangered species or a threatened species.

(C) For the purposes of this Act, each member of an experimental population shall be treated as a threatened species, except that--

(i) solely for purposes of section 7 (other than subsection (a)(1) thereon, an experimental population determined under subparagraph (B) to be not essential to the continued existence of a species shall be treated, except when it occurs in an area within the National Wildlife Refuge System or the National Park System, as a species proposed to be listed under section 4; and

(ii) critical habitat shall not be designated under this Act for any experimental population determined under subparagraph (B) to be not essential to the continued existence of a species.

(3) The Secretary, with respect to populations of endangered species or threatened species that the Secretary authorized, before the date Or the enactment of this subsection, for release in geographical areas separate from the other populations of such species, shall determine by regulation which of such populations are an experimental population for the purposes of this subsection and whether or not each is essential to the continued existence of an endangered species or a threatened species.

PENALTIES AND ENFORCEMENT

SEC. 11. (a) CIVIL PENALTIES.--(1) Any person who knowingly violates, and any person engaged in business as an importer or exporter of fish, wildlife, or plants who violates, any provision of this Act, or any provision of any permit or certificate issued hereunder, or of any regulation issued in order to implement subsection (a)(l)(A), (B), (C), (D), (E), or (F), (a)(2)(A), (B), (C), or (D), (c), (d) (other than regulation relating to recordkeeping or filing of reports), (f), or (g) of section 9 of this Act, may be assessed a civil penalty by the Secretary of not more than $25,000 for each violation. Any person who knowingly violates, and any person engaged in business as an importer or exporter of fish, wildlife, or plants who violates, any provision of any other regulation issued under this Act may be assessed a civil penalty by the Secretary of not

more than $12,000 for each such violation. Any person who otherwise violates any provision of this Act, or any regulation, permit, or certificate issued hereunder, may be assessed a civil penalty by the Secretary of not more than $500 for each such violation. No penalty may be assessed under this subsection unless such person is given notice and opportunity for a hearing with respect to such violation. Each violation shall be a separate offense. Any such civil penalty may be remitted or mitigated by the Secretary. Upon any failure to pay a penalty assessed under this subsection, the Secretary may request the Attorney General to institute a civil action in a district court of the United States for any district in which such person is found resides, or transacts business to collect the penalty and such court shall have jurisdiction to hear and decide any such action. The court shall hear such action on the record made before the Secretary and shall sustain his action if it is supported by substantial evidence on the record considered as a whole.

(2) Hearings held during proceedings for the assessment of civil penalties by paragraph (1) of this subsection shall be conducted in accordance with section 554 of title 5, United States Code. The Secretary may issue subpoenas for the attendance and testimony of witnesses and the production of relevant papers, books, and documents, and administer oaths. Witnesses summoned shall be paid the same fees and mileage that are paid to witnesses in the courts of the United States. In case of contumacy or refusal to obey a subpoena served upon any person pursuant to this paragraph, the district court of the United States for any district in which such person is found or resides or transacts business, upon application by the United States and after notice to such person, shall have jurisdiction to issue an order requiring such person to appear and give testimony before the Secretary or to appear and produce documents before the Secretary, or both, and any failure to obey such order of the court may be punished by such court as a contempt thereof.

(3) Notwithstanding any other provision of this Act, no civil penalty shall be imposed if it can be shown by a preponderance of the evidence that the defendant committed an act based on a good faith belief that he was acting to protect himself or herself, a member of his or her family, or any other individual from bodily harm, from any endangered or threatened species.

(4) Notwithstanding any other provision of this Act, no civil penalty shall be imposed on State and/or local officials for performing their duties required by, and in compliance with State and local law that expands the protection and/or conservation of a species.

(b) CRIMINAL VIOLATIONS.--(1) Any person who knowingly violates any provision of this Act, of any permit or certificate issued hereunder, or of any regulation issued in order to implement subsection (a)(l)(A), (B), (C), (D), (E), or (F); (a)(2)(A), (B), (C), or (D), (c), (d) (other than a regulation relating to recordkeeping, or filing of reports), (f), or (g) of section 9 of this Act shall upon conviction, be fined not more than $50,000 or imprisoned for; not more than one year, or both. Any person who knowingly violates any provision of any other regulation issued under this Act shall, upon conviction be fined not more than $25,000 or imprisoned for not more than six months, or both.

(2) The head of any Federal agency which has issued a lease, license, permit, or other agreement authorizing a person to import or export fish, wildlife, or plants, or to operate a quarantine station for imported wildlife, or authorizing the use of federal lands, including grazing of domestic livestock, to any person who is convicted of a criminal violation of this Act or any regulation, permit or certificate issued hereunder may immediately modify, suspend or revoke each lease, license, permit, or other agreement. The Secretary shall also suspend for a period of up to one year, or cancel any Federal hunting or fishing permits or stamps issued to any person who is convicted of a criminal violation of any provision of this Act or any regulation, permit, or certificate issued hereunder The United States shall not be liable for the payments of any compensation, reimbursement, or damages in connection with the modification, suspension, or revocation of any leases, licenses permits stamps, or other agreements pursuant to this section.

(3) Notwithstanding any other provision of this Act, it shall be a defense to prosecution under this subsection if the defendant committed the offense based on a good faith belief that he was acting to protect himself or herself, a member of his or her family, or any other individual, from bodily harm from any endangered or threatened species.

(4) Notwithstanding any other provision of this Act, no criminal penalty shall be imposed on State and/or local officials for performing their duties required by, and in compliance with State and local law that expands the protection and/or conservation of a species..

(c) DISTRICT COURT JURISDICTION--The several district courts of the United States; including the courts enumerated in section 460 of title 28, United States Code, shall have jurisdiction over any actions arising under this Act. For the purpose of this Act, American Samoa shall be included within the judicial district of the District Court of the United States for the District of Hawaii.

(d) REWARDS AND CERTAIN INCIDENTAL EXPENSES.--The Secretary or the Secretary of the Treasury shall pay, from sums received as penalties, fines, or forfeitures of property for any violation of this chapter or any regulation issued hereunder (1) a reward to any person who furnishes information which leads to an arrest, a criminal conviction, civil penalty assessment, or forfeiture of property for any violation of this chapter or any regulation issued hereunder, and (2) the reasonable and necessary costs incurred by any person in providing temporary care for any fish, wildlife, or plant pending the disposition of any civil or criminal proceeding alleging a violation of this chapter with respect to that fish, wildlife, or plant. The amount of the reward, if any, is to be designated by the Secretary or the Secretary of the Treasury, as appropriate. Any officer or employee of the United States or any State or local government who furnishes information or renders service in the performance of his official duties is ineligible for payment under this subsection. Whenever the balance of sums received under this section and section 6(d) of the Act of November 16, 1981 (16 U.S.C. 3375(d)) as penalties or fines, or from forfeitures of property, exceed $500,000, the Secretary of the Treasury shall deposit an amount equal to such excess balance in the cooperative endangered species conservation fund established under section 6(i) of this Act

(e) ENFORCEMENT.--(1) The provisions of this Act and any regulations or permits issued pursuant thereto shall be enforced by the Secretary, the Secretary of the Treasury, or the Secretary of the Department in which the Coast Guard is operating; or all such Secretaries. Each such Secretary may utilize by agreement, with or without reimbursement, the personnel,

services, and facilities of any other Federal agency or any State agency for purposes of enforcing this Act.

(2) The judges of the district courts of the United States and the United States magistrates may within their respective jurisdictions, upon proper oath or affirmation showing probable cause, issue such warrants or other process as may be required for enforcement of this Act and any regulation issued thereunder.

(3) Any person authorized by the Secretary, the Secretary of the Treasury, or the Secretary of the Department in which the Coast Guard is operating, to enforce this Act may detain for inspection and inspect any package, crate, or other container, including its contents, and all accompanying documents, upon importation or exportation. Such persons may make arrests without a warrant for any violation of this Act if he has reasonable grounds to believe that the person to be arrested is committing the violation in his presence or view and may execute and serve any arrest warrant, search warrant, or other warrant or civil or criminal process issued by any officer or court of competent jurisdiction for enforcement of this Act. Such person so authorized may search and seize, with or without a warrant, as authorized by law. Any fish, wildlife, property, or item so seized shall be held by any person authorized by the Secretary, the Secretary of the Treasury, or the Secretary of the Department in which the Coast Guard is operating pending disposition of civil or criminal proceedings, or the institution of an action in rem for forfeiture of such fish, wildlife, property, or item pursuant to paragraph (4) of the subsection; except that the Secretary may, in lieu of holding such fish, wildlife, property, or item, permit the owner or consignee to post a bond or other surety satisfactory to the Secretary, but upon forfeiture of any such property to the United States, or the abandonment or waiver of any claim to any such property, it shall be disposed of (other than by sale to the general public) by the Secretary in such a manner consistent with the purposes of this Act, as the Secretary shall by regulation prescribe.

(4)(A) All fish or wildlife or plants taken, possessed, sold, purchased, offered for sale or purchase, transported, delivered, received, carried, shipped, exported, or imported contrary to

the provisions of this Act, any regulation made pursuant thereto, or any permit or certificate issued hereunder shall be subject to forfeiture to the United States.

(B) All guns, traps, nets, and other equipment, vessels, vehicles, aircraft, and other means of transportation used to aid the taking possessing, selling, purchasing, offering for sale or purchase, transporting, delivering, receiving, carrying, shipping, exporting, or importing of any fish or wildlife or plants in violation of this Act, any regulation made pursuant thereto, or any permit or certificate issued thereunder shall be subject to forfeiture to the United States upon conviction of a criminal violation pursuant to section 11(b)(l) of this Act.

(5) All provisions of law relating to the seizure, forfeiture, and condemnation of a vessel for violation of the customs laws the disposition of such vessel or the proceeds from the sale thereof, and the remission or mitigation of such forfeiture, shall apply to the seizures and forfeitures incurred or alleged to have been incurred under the provisions of this Act insofar as such provisions of law are applicable and not inconsistent with the provisions of this Act; except that all powers, rights, and duties conferred or imposed by the customs laws upon any officer or employee of the Treasury Department shall, for the purposes of this Act, be exercised or performed by the Secretary or by such persons as he may designate.

(6) The Attorney General of the United States may seek to enjoin any person who is alleged to be in violation of any provision of this Act or regulation issued under authority thereof.

(f) REGULATIONS.--The Secretary, the Secretary of the Treasury, and the Secretary of the Department in which the Coast Guard is operating, are authorized to promulgate such regulations as may be appropriate to enforce this Act, and charge reasonable fees for expenses to the Government connected with permits or certificates authorized by this Act including processing applications and reasonable inspections, and with the transfer, board, handling, or storage of fish or wildlife or plants and evidentiary items seized and forfeited under this Act. All such fees collected pursuant to this subsection shall be deposited in the Treasury to the credit of the appropriation which is current and chargeable for the cost of furnishing the services. Appropriated funds may be expended pending reimbursement from parties in interest.

(g) CITIZEN SUITS.(1) Except as provided in paragraph (2) of this subsection any person may commence a civil suit on his own behalf--

(A) to enjoin ~~any person, including~~ the United States and any other governmental instrumentality or agency (to the extent permitted by the eleventh amendment to the Constitution), who is alleged to be in violation of any provision of this Act or regulation issued under the authority thereof; or

(B) to compel the Secretary to apply, pursuant to section 6(g)(2)(B)(ii) of this Act, the prohibitions set forth in or authorized pursuant to section 4(d) or section 9(a)(1)(B) of this Act with respect to the taking of any resident endangered species or threatened species within any State; or

(C) against the Secretary where there is alleged a failure of the Secretary to perform any act or duty under section 4 which is not discretionary with the Secretary.

(D) but not against affected private landowners alleged to have violated the Act.

The district courts shall have jurisdiction, without regard to the amount in controversy ~~or the citizenship of the parties~~, to enforce any such provision or regulation or to order the Secretary to perform such act or duty, as the case may be. In any civil suit commenced under subparagraph (B) the district court shall compel the Secretary to apply the prohibition sought if the court finds that the allegation that an emergency exists is supported by substantial evidence.

(2)(A) No action may be commenced under subparagraph (1)(A) of this section--

(i) prior to sixty days after written notice of the violation has been given to the Secretary, and to any alleged *Federal* violator of any such provision or regulation;

(ii) if the Secretary has commenced action to impose a penalty pursuant to subsection (a) of this section; or

(iii) if the United States has commenced and is diligently prosecuting a criminal action in a court of the United States or a State to redress a violation of any such provision or regulation.

(B) No action may be commenced under subparagraph (1)(B) of this section--

(i) prior to sixty days after written notice has been given to the Secretary setting forth the reasons why an emergency is thought to exist with respect to an endangered species or a threatened species in the State concerned; or

(ii) if the Secretary has commenced and is diligently prosecuting action under section 6(g)(2)(B)(ii) of this Act to determine whether any such emergency exists.

(C) No action may be commenced under subparagraph (1)(C) of this section prior to sixty days after written notice has been given to the Secretary; except that such action may be brought immediately after such notification in the case of an action under this section respecting an emergency posing a significant risk to the well being of any species of fish or wildlife or plants.

(3)(A) Any suit under this subsection may be brought in the judicial district in which the violation occurs.

(B) In any such suit under this subsection in which the United States is not a party, the Attorney General, at the request of the Secretary, may intervene on behalf of the United States as a matter of right. (4) The court, in issuing any final order in any suit brought pursuant to paragraph (1) of this subsection, may award costs of litigation (including reasonable attorney and expert witness fees) to any party, whenever the court determines such award is appropriate.

(5) The injunctive relief provided by this subsection shall not restrict any right which any person (or class of persons) may have under any statute or common law to seek enforcement of any standard or limitation or to seek any other relief (including relief against the Secretary or a State agency).

(h) COORDINATION WITH OTHER LAWS.--The Secretary of Agriculture and the Secretary shall provide for appropriate coordination of the administration of this Act with the administration of the animal quarantine laws (21 U.S.C. 101-105 111-135b, and 612-614) and section 306 of the Tariff Act of 19~0 (19 U.S.C. 1306). Nothing in this Act or any amendment made by this Act shall be construed as superseding or limiting in any manner the functions of the Secretary of Agriculture under any other law relating to prohibited or restricted

importations or possession of animals and other articles and no proceeding or determination under this Act shall preclude any proceeding or be considered determinative of any issue of fact or law in any proceeding under any Act administered by the Secretary of Agriculture. Nothing in this Act shall be construed as superseding or limiting in any manner the functions and responsibilities of the Secretary of the Treasury under the Tariff Act of 1930, including, without limitation, section 527 of that Act (19 U.S.C. 1527), relating to the importation of wildlife taken, killed, possessed, or exported to the United States in violation of the laws or regulations of a foreign country.

ENDANGERED PLANTS

SEC. ~~12~~ *13.* The Secretary of the Smithsonian Institution, in conjunction with other affected agencies, is authorized and directed to review (1) species of plants which are now or may become endangered, or threatened and (2) methods of adequately conserving such species, and to report to Congress, within one year after the date of the enactment of this Act, the results of such review including recommendations for new legislation or the amendment of existing legislation.

CONFORMING AMENDMENTS

SEC. ~~13~~ *14.* (a) Subsection 4(c) of the Act of October 15, 1966 (80 Stat. 928, 16 U.S.C. 668dd(c)), is further amended by revising the second sentence thereof to read as follows: "With the exception of endangered species and threatened species listed by the Secretary pursuant to section 4 of the Endangered Species Act of 1973 in States wherein a cooperative agreement does not exist pursuant to section 6(c) of that Act, nothing in this Act shall be construed to authorize the Secretary to control or regulate hunting or fishing of resident fish and wildlife on lands not within the system."

(b) Subsection 10(a) of the Migratory Bird Conservation Act (45 Stat. 1224, 16 U.S.C. 715i(a)) and subsection 401(a) of the Act of June 15, 1935 (49 Stat. 383, 16 U.S.C. 715s(a)) are each

amended by striking out "threatened with extinction," and inserting in lieu thereof the following: "listed pursuant to section 4 of the Endangered Species Act of 1973 as endangered species or threatened species."

(c) Section 7(a)(1) of the Land and Water Conservation Fund Act of 1965 (16 U.S.C. 4601-9(a)(1)) is amended by striking out--

THREATENED SPECIES.--For any national area which may be authorized for the preservation of species of fish or wildlife that are threatened with extinction." and inserting in lieu thereof the following:

ENDANGERED SPECIES AND THREATENED SPECIES.--For lands waters, or interests therein, the acquisition of which is authorized under section 5(a) of the Endangered Species Act of 1973, needed for the purpose of conserving endangered or threatened species of fish or wildlife or plants."

(d) The first sentence of section 2 of the Act of September 28, 1962, as amended (76 Stat. 653, 16 U.S.C. 460k-1), is amended to read as follows:

'The Secretary is authorized to acquire areas of land, or interests therein, which are suitable for--

"(1) incidental fish and wildlife-oriented recreational development;

"(2) the protection of natural resources

"(3) the conservation of endangered species or threatened species listed by the Secretary pursuant to section 4 of the Endangered Species Act of 1973; or

"(4) carrying out two or more of the purposes set forth in paragraphs (1) through (3) of this section, and are adjacent to, or within, the said conservation areas, except that the acquisition of any land or interest therein pursuant to this section shall be accomplished only with such funds as may be appropriated therefor by the Congress or donated for such purposes, but such property shall not be acquired with funds obtained from the sale of Federal migratory bird hunting stamps."

(e) The Marine Mammal Protection Act of 1972 (16 U.S.C. 13611407) is amended--

(1) by striking out "Endangered Species Conservation Act of 1969" in section 3(1)(B) thereof and inserting in lieu thereof the following:

"Endangered Species Act of 1973";

(2) by striking out "pursuant to the Endangered Species Conservation Act of 1969" in section 101(a)(3)(B) thereof and inserting in lieu thereof the following: "or threatened species pursuant to the Endangered Species Act of 1973"

(3) by striking out "endangered under the Endangered Species Conservation Act of 1969" in section 102(b)(3) thereof and inserting in lieu thereof the following: "an endangered species or threatened species pursuant to the Endangered Species Act of 1973"; and

(4) by striking out "of the Interior and revisions of the Endangered Species List, authorized by the Endangered Species Conservation Act of 1969," in section 202(a)(6) thereof and inserting in lieu thereof the following: "such revisions of the endangered species list and threatened species list published pursuant to section 4(c)(1) of the Endangered Species Act of 1973".

(f) Section 2(1) of the Federal Environmental Pesticide Control Act of 1972 (Public Law 92-516) is amended by striking out the words "by the Secretary of the Interior under Public Law 91-135" and inserting in lieu thereof the words "or threatened by the Secretary pursuant to the Endangered Species Act of 1973".

FEDERAL ADVISORY COMMITTEE ACT

SEC. 15. Notwithstanding any other provision of law, no activity engaged in by State,or local officials or affected private property owners, pursuant to this Act, shall be subject to the Federal Advisory Committee Act.

REPEALER

SEC. ~~14.~~ *15.* The Endangered Species Conservation Act of 1969 (sections 1 through 3 of the Act of October 15, 1966, and sections 1 through 6 of the Act of December 5, 1969; 16 U.S.C. 668aa--668cc-6, is repealed. *All regulations promulgated pursuant to enactment of the Endangered Species Act of 1973, and all subsequent amendments thereto, shall remain in effect no longer than one calendar year after the enactment of this Act, or until the promulgation of new regulations developed pursuant to this Act., whichever comes first..*

AUTHORIZATION OF APPROPRIATIONS

SEC. ~~15.~~ *16.* (a) IN GENERAL.--Except as provided in subsections (b), (c), and (d), there are authorized to be appropriated--

(1) not to exceed $35,000,000 for fiscal years 198*896 through 2000*~~, $36,500,000 for fiscal year 1989, $38,000,000 for fiscal year 1990, $39,500,000 for fiscal year 1991, and $41,500,000 for fiscal year 1992~~ to enable the Department of the Interior to carry out such functions and responsibilities as it may have been given under this Act;

(2) not to exceed $5,750,000 for fiscal years 198*896 through 2000*~~, $6,250,000 for each of fiscal years 1989 and 1990, and $6,750,000 for each of fiscal years 1991 and 1992~~ to enable the Department of Commerce to carry out such functions and responsibilities as it may have been given under this Act; and

(3) not to exceed $2,200,000 for fiscal years 198*896 through 2000*~~, $2,400,000 for each of fiscal years 1989 and 1990, and $2,600,000 for each of fiscal years 1991 and 1992~~, to enable the Department of Agriculture to carry out its functions and responsibilities with respect to the enforcement of this Act and the Convention which pertain to the importation or exportation of plants.

(b) EXEMPTIONS FROM ACT.--There are authorized to be appropriated to the Secretary to assist him and the Endangered Species Committee in carrying out their functions under

section 7 (e), (g) and (h) not to exceed $600,000 for each for fiscal years 1988*96*, 1989*97*, 1990*98*, 1991*99*, and ~~1992~~*2000*.

(C) CONVENTION IMPLEMENTATION.--There are authorized to be appropriated to the Department of the Interior for purposes of carrying out section 8A(e) not to exceed $400,000 for each of fiscal years 1988*96*, 1989*97*, and 1990*98*, and $500,000 for each of fiscal years 1991*99* and ~~1992~~*2000*, and such sums shall remain available until expended.

EFFECTIVE DATE

SEC. ~~16.~~ *17.* This Act shall take effect on the date of its enactment.

MARINE MAMMAL PROTECTION ACT OF 1972

SEC. ~~17.~~ *18.* Except as otherwise provided in this Act no provision of this Act shall take precedence over any more restrictive conflicting provision of the Marine Mammal Protection Act of 1972.

ANNUAL COST ANALYSIS BY THE FISH AND WILDLIFE SERVICE

SEC. ~~18.~~ *19.* On or before January 15, 1990, and each January 15 thereafter, the Secretary of the Interior, acting through the Fish and Wildlife Service, shall submit to the Congress an annual report covering the preceding fiscal year which shall contain--

(1) an accounting on a species by species basis ~~of~~ *for* all reasonably unidentifiable Federal expenditures made primarily for the conservation of endangered or threatened species pursuant to this Act; and

(2) an accounting on a species by species basis for all reasonably identifiable expenditures made primarily for the conservation of endangered or threatened species pursuant to this Act by states receiving grants under section 6.; *and*

(3) an accounting on a species by species basis for all reasonably identifiable expenditures made primarily for the conservation of endangered and threatened species by private interests acting pursuant to this Act.

ENDANGERED SPECIES ACT REAUTHORIZATION

THURSDAY, JULY 20, 1995

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

NATIONAL AND INTERNATIONAL SPECIES CONSERVATION

The subcommittee met, pursuant to recess, at 9:04 a.m. in room 406, Dirksen Senate Office Building, Hon. Dirk Kempthorne (chairman of the subcommittee) presiding.

Present: Senators Kempthorne, Thomas, Warner, Reid, and Chafee [ex officio].

OPENING STATEMENT OF HON. DIRK KEMPTHORNE, U.S. SENATOR FROM THE STATE OF IDAHO

Senator KEMPTHORNE. Ladies and gentlemen, good morning. I'll call this hearing to order. I would like to welcome all of you to the discussion that will take place and also to acknowledge that Senator Chafee, the chairman of the Full Environment and Public Works Committee, is here with us this morning and we appreciate that greatly.

Today we hold the second in a series of hearings on the Endangered Species Act. In this hearing we will explore the recovery, delisting and downlisting provisions in the Endangered Species Act. We will also examine the effect that ESA has internationally.

Before this hearing is over, I hope we will all agree that the ESA recovery process, as mandated by law and implemented by regulation, must be changed. All of us should agree that recovery plans should be timely written, based on science, involve the State and local governments and their citizens who are directly affected, offer decisionmakers options for protecting species while at the same time minimizing their effects on the human species. If we can achieve these goals, we will reduce the cynicism and downright anger among folks whose lives are adversely affected by this Act.

It is important to understand the recovery process. In simple terms, once a species is listed as threatened or endangered, the Fish and Wildlife Service or National Marine Fisheries Service may prepare a recovery plan for that species—but they don't have to. While that plan is being prepared, Fish and Wildlife Service or the National Marine Fisheries Service must be consulted and approve any activity involving Federal actions that might affect the species.

This often results in recovery decisions being made without or before a systematic recovery plan is available.

The recovery process with or without a plan is slow, lacks important data and leaves in limbo a number of projects and activities. Listen to these facts:

The February 1995 issue of *Conservation Biology* said that there were huge delays in the writing of 314 recovery plans completed through August 1991. The average time—and I repeat, the average time—it took to write a recovery plan involving an animal was 11.3 years. For plants, it took 4.1 years.

Once they were finally written, 81 percent of recovery plans lacked significant biological data. As one measure of the lack of scientific data, only 44 percent of original recovery plans bothered to estimate the target number for species the recovery plans sought to protect. Of those which did provide a target, nearly half were guesses or best estimates and were not derived from census or sample surveys.

One of the authors of this survey, Michael Scott of the University of Idaho, is with us today and I look forward to his testimony.

The National Wilderness Institute found that little good science went into several recovery plans. They quoted recognizable scientists who said, and now I quote, with regard to the Cave Crayfish, "Sufficient data to estimate population size or trends is lacking." With regard to the Knowlton Cactus, quote, "There is inadequate biological data for this cactus." The Louisiana Pearlshell Mussel, quote, "There is practically no information on the life history, population levels and habitat requirements for this species." I would ask that we now make part of the record these two reports.

While the recovery plans is being prepared, many projects and activities are left in limbo waiting for section 7 consultation by Federal agencies. Those who write the recovery plans are not the ones that implement it, often making the recovery plan irrelevant. If a landowner performs activities that are consistent with a recovery plan, that action can be challenged and stopped. Moreover, the recovery plan does not make Federal agencies accountable for their actions in recovering species.

In my mind, the recovery process ought to be the heart and soul of the Endangered Species Act, and it is not. It's a hollow shell of what it ought to be. I'll ask witnesses their thoughts for making the recovery plan process meaningful and effective, but it seems to me that changes are needed to reduce the time taken to prepare the plans, to involve peer reviewed science in their development, to give policymakers alternatives in recovery species that take into account ways to minimize effects on citizens and to involve State and local officials and citizens directly affected by recovery plans in the drafting of a recovery plan.

I know firsthand how the recovery process affects real people. Take, for example, Idaho's experience with salmon. The sockeye has been listed as an endangered species and a recovery plan is being developed by the National Marine Fisheries Service. That plan leaves out an important segment of the salmon life cycle, and that is the ocean. Salmon spend two-thirds of their lives at sea. Yet, National Marine Fisheries Service does not analyze the ocean part of the salmon habitat, nor address the challenges that face the

fish there. The writing of an adequate, effective, specific plan for the salmon is essential for the people of Idaho because jobs and livelihoods hang in the balance.

The IdaPine Lumber mill in Grangeville, ID, recently was forced to close its doors, costing 150 mill workers their jobs due to the lack of an adequate recovery plan for the salmon.

The recovery process raises the related issue of delisting or downlisting species no longer threatened or endangered. Right now we have nearly 1000 species on the threatened or endangered species list but fewer than 10 species have been delisted.

The final issue that we will look at today are the international issues of poaching and illegal trade, and the effect of the Endangered Species Act and the convention on International Trade on the management of resources. I will have more to say about this issue after we conclude testimony this morning.

With that, let me call upon Senator Chafee for comments he would like to make.

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

Senator CHAFEE. Thank you very much, Mr. Chairman, and I'm delighted you're holding this hearing today focusing on these two points—on the species recovery and on the international issues. I know you join with me giving a special warm greeting and welcome to the Director of the Fish and Wildlife Service, Ms. Mollie Beattie, who is with us today.

Ms. BEATTIE. Thank you, Senator.

Senator CHAFEE. I know I speak for all of us in wishing you the very best in the days ahead.

It seems to me during these discussions on the listings and consultations and all of that, sometimes we lose sight of the ultimate goal of the Endangered Species Act, which the chairman has spoken about, and that's the recovery. While it's true there has been what seems to be a dismal record out there, there have been some successes with whooping cranes, brown pelicans, peregrine falcons. Speaking of peregrine falcons, in Tuesday's newspaper I think everybody saw that the peregrine falcon has come back, at least two some degree. A baby one was born 75 feet up on the national shrine of the immaculate conception—that's a good place to be born, I guess.

[Laughter.]

Senator CHAFEE. It's very, very exciting about the peregrine falcon. It's interesting that they were nearly wiped out by the DDT. Then we banned the DDT and they're coming back, slowly but they are coming back.

However, as the chairman pointed out, many species are languishing on the endangered species list. Almost half of the threatened and endangered species listed in the United States are not covered by approved recovery plans, and that's what we've got to get on with.

I would like to make several points in connection with the recovery plans:

First, I think recovery efforts should focus on groups of species that are dependent upon the same habitat. The name of this game is habitat, I think.

Second, local governments—and the chairman touched on this—local governments, and landowners, and businesses, and other members of the public affected by the recovery plans ought to be involved in the development and the implementation of the plans.

Third, as stated in the National Academy of Scientists report, "No recovery plan, however good it might be, will prevent extinction or promote recovery if it is not implemented expeditiously." In other words, we've got to get on with this.

Now the second phase of today's hearing deals with the international conservation efforts. We're going to consider how our nation's obligation under CITES is proceeding.

I think we've got to bear this in mind in our country. What kind of a message would the United States be sending around the world if we were to eliminate or weaken substantially the protections of the Endangered Species Act. Our Act has been a model that's been used worldwide by nations seeking to conserve biodiversity. If a powerful and rich nation like ours can't do anything in this area, how do we expect these other countries to do something?

So we really are a role model and the role of role models is to be a model, and, therefore, that puts extra pressure on us, and I think we've got to step up to the mark. It's significant that two of our witnesses have traveled from Africa who are going to be testifying today.

So, Mr. Chairman, I think you've put together a very, very good hearing today, and if I'm sometimes coming and going, it's only because in the Finance Committee we have a hearing on Medicare, something I've been deeply involved with. So I'll be trying to ride two horses at once, probably both unsuccessfully.

Thank you.

[The statement and article submitted by Senator Chafee follow:]

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

Mr. Chairman, thank you for scheduling this hearing to consider two important aspects of the Endangered Species Act—species recovery, and international issues. I am especially pleased to welcome the Director of the Fish and Wildlife Service, Mollie Beattie, this morning.

Sometimes it seems that—during all the hours of discussion of listings and consultations, and prohibitions and permits—we lose sight of the ultimate goal of the Endangered Species Act. What's that? The recovery of the wildlife and plants that are on the threatened and endangered species list.

While many decry what they view as the dismal record of the ESA, the Act has helped achieve some extraordinary successes. Populations of whooping cranes, brown pelicans, and peregrine falcons have come back from near extinction. Grizzly bear populations have rebounded and are likely to be delisted altogether. Both the California gray whale and the American alligator have been removed from the list of threatened and endangered species. And, our national symbol—the bald eagle—has been saved.

However, many species are languishing on the endangered species list. And, almost half of the threatened and endangered species listed in the United States are not covered by approved recovery plans.

The recovery requirements under Section 4 of the ESA are quite general and open ended. Perhaps this makes sense. The factors that threaten the survival of a listed species and the economic considerations at issue are probably as varied as the species themselves. Certainly the scientific issues related to recovery—concerning such

things as population viability levels and habitat needs—are often complex and difficult.

After considering the record of the ESA, a few things do seem clear:

First, recovery efforts should focus on groups of species that are dependent on the same habitat or ecosystem in order to make the best use of our limited resources.

Second, local governments and landowners, businesses and other members of the public affected by recovery plans must be involved in the development and implementation of these plans for them to succeed.

And, third, as stated in a report of the National Academy of Scientists, "no recovery plan, however good it might be, will help prevent extinction or promote recovery if it is not implemented expeditiously."

I hope that today's witnesses will address some of these points.

Mr. Chairman, international conservation efforts are often overlooked as we consider the effects of the ESA. I am pleased that the Subcommittee is making an effort to consider how the Act works to fulfill our nation's obligation under CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora), and how our actions affect foreign species and foreign governments.

Another international concern that we should keep in mind is: what kind of message would the United States be sending around the world if we were to eliminate or weaken substantially the protections of the ESA? Our Endangered Species Act has been a model used worldwide by nations seeking to conserve biodiversity. If our powerful country will not preserve habitat necessary to maintain its diversity of wild flora and fauna, what standing do we have with foreign nations who we hope will curtail activities that destroy their natural resources?

It is significant that two of our witnesses have travelled from Africa to present their views on the ESA. I look forward to hearing from them, and from all the witnesses, and to working together toward thoughtful, relevant solutions to the problems that exist under the ESA.

Thank you.

Saving North America's Beleaguered Bats

(By Merlin D. Tuttle)

No stealth aircraft could be more sophisticated than this California leaf-nosed bat. It swoops so quietly through the desert night that it is called a "whispering bat." Its eyes can spot a sleeping insect, and its huge ears can pick up the sounds of a caterpillar's munching jaws. Only on the darkest of nights does this bat activate its ultimate detector: Through its nose it emits high-frequency, low-intensity echolocation signals created by contracting muscles in its larynx. Sound waves return to its ears after bouncing off doomed prey.

This amazing bat is one of 44 North American species studied by the author. He has long emphasized the beneficial nature of bats, which feed voraciously on insect pests that yearly cost farmers and foresters billions of dollars in losses. Bats also pollinate plants and disperse their seeds. Although many myths have been dispelled, bats still need protection from vandals and from the growing practice of sealing up caves and mines that the animals need to survive.

For a wildlife conservationist trying to make a convert, there's nothing more helpful than a good object lesson in economics—especially if the animals in need of protection have been maligned as much as bats.

In 1968 I was a young zoologist in Tennessee studying bats and attempting to change public misconceptions about them. I had banded thousands, and while observing their migratory movements, I met an old farmer near Knoxville who had a cave on his property that sheltered a large colony of gray bats, a species that had dwindled alarmingly because of persecution. When I asked permission to investigate his cave, he said, "Fine, but please kill all the bats you can find." He gave no specific objections. He simply didn't want bats on his land.

I found the cave and its bats and saw immediately why this particular colony had been little disturbed—a deep stream flowed into and through the cave.

I needed a rubber raft and chest waders to make it inside, where I found about 50,000 gray bats, mostly females nursing their young. Beneath their roost I also discovered numerous insect wings, including those of potato beetles. Next to the cave lay a large field of the farmer's potatoes.

When I showed a handful of the wings to the farmer, he knew exactly which insects they belonged to and how damaging they were to his crop. But he had no idea that the bats were eating the beetles. He suddenly realized what an asset he owned,

and it completely changed his attitude about bats. When I saw him again years later, he was still keeping a watchful eye on that cave.

Of the world's nearly 1,000 species of bats, 44 sweep across the night skies of North America. I have concentrated on many of these species the past few years, although I have studied bats around the globe. North American bats are essential to keeping populations of night-flying insects in balance. Individual bats can catch hundreds hourly, and large colonies eat tons nightly, including countless beetles and moths that cost farmers and foresters a fortune, not to mention mosquitoes in our backyards. A colony of just 150 big brown bats can eat enough cucumber beetles each summer to protect local farmers from 18 million of their rootworm larvae. This pest alone costs U.S. growers a billion dollars annually.

Bats in the deserts of the U.S. Southwest perform an invaluable service by pollinating the region's most important cactus species, feeding on nectar and transferring pollen from plant to plant by night, just as insects do by day. Bats also feed on cactus fruits and disperse their seeds in flight with their droppings.

The image of bats has become a lot more appealing since the founding of Bat Conservation International (BCI) in 1982. Many myths have been largely debunked—that bats are blind, will tangle in people's hair, and are usually rabid.

None of these statements is true.

In fact, the odds of contracting rabies from a bat are extremely remote for anyone who simply leaves them alone. Even sick bats rarely attack people or pets, although they may bite in self-defense, like any wild animal, and should be handled only by experts.

Increased awareness of bats' beneficial nature has stimulated some protection. I have often worked with pest-control operators who previously poisoned bats, instructing them on how to exclude unwanted bats from buildings by hanging netting loosely over their entrance and exit holes. This allows bats to leave but prevents their return. BCI has also worked with leaders in the cave exploration community, and many spelunkers now avoid caves when bats are present.

Yet serious threats remain, including outright killing of bats, destruction or disturbance of their cave habitats, and, recently, increased closing of abandoned mines. Six bat species in the U.S. are endangered, and 18 others are candidates for addition to the endangered species list. With 24 species out of 44 in such dire straits, bats as a group rank as the most endangered land mammals in the U.S.—even though a few individual colonies number in the millions.

Caves sometimes bring out the worst in people. In Alabama, where I did my doctoral research, Hambrick Cave once sheltered a colony of 250,000 gray bats, many of which I banded. Suddenly, in 1973, they all vanished. I discovered that visitors had built fires in the cave entrance, suffocating many of the bats, and Fourth of July revelers had exploded fireworks inside, apparently killing the rest.

My reporting of this and similar calamities helped lead to the gray bat's addition to the endangered list. Fortunately, there is a happy ending. The Tennessee Valley Authority, which owns the cave, blocked the entrance to humans but left a way for new bats to enter, and today the Hambrick Cave gray-bat colony has rebuilt to 300,000.

Disturbances need not be extreme to be fatal, for bats are very sensitive. Most North American bats use caves to hibernate, from September to April or May, and many also raise their young in them during summer. Bats reproduce at a slower rate than any other small mammal, with most females giving birth to just one pup each year. In winter even conscientious cave explorers can wake up hibernating bats. Each time a bat is awakened, it loses roughly 2 months' worth of its stored fat and thus may not survive until spring.

When nursing, mothers and pups cluster in huge colonies, warming the cave with their body heat. A disturbance often breaks the colony into smaller groups. Then the temperature drops, and the young may not grow fast enough to survive.

As their roosts are disturbed, bats are forced to move into fewer caves in greater and greater numbers, making them even more vulnerable to disaster. During the 1950's dozens of caves in Florida sheltered colonies of a few thousand bats each. I watched as one cave was buried beneath a town's new city dump and others were bulldozed shut by landowners worried about personal-injury lawsuits. One cave was opened to public exploration; another was commercialized.

By the 1980's the remaining bats were crammed into only a few caves, which were partly flooded and thus less disturbed by people. Those caves became death traps in the devastating flood caused by tropical storm Alberto in July 1994. About a quarter of a million bats drowned in just one cave.

Inexorably, bats are running out of space, funneled from natural habitat into artificial substitutes that are effective but risky, like abandoned mines. Shut down when their pay dirt played out or by hard economic times, hundreds of thousands

of these mines pit the U.S., especially in the West, the Great Lakes region, and the Northeast, as well as Canada and Mexico. For many bats, mines have become shelters of last resort. Roughly half of more than 6,000 mines recently surveyed showed signs of bat use. Ten percent of mines in the West contained important colonies; for mines in the North and East the figure is almost certainly higher.

While abandoned mines provide good shelter for bats, they pose hazards for people. Mines regarded as dangerous have long been boarded up or filled with earth by bulldozers, seldom with regard for any bats inside. Millions of bats, which create the largest colonies of any mammal, have already been buried by this practice or been forced to seek shelter elsewhere. This dilemma is becoming acute, because many States, spurred by human accidents in such mines, have stepped up the closure rate.

To protect both people and bats, over the past 5 years more than a hundred sturdy gates have been constructed at mine entrances, allowing bats to pass through but keeping people out. Millions of bats have been saved by these gates, often built jointly by BCI, mining companies, and government agencies. In fact, some closed mines previously occupied by bats have been reopened and gated. This happened near Altoona, PA, where a mine in Canoe Creek State Park now boast the State's largest hibernating bat colony, which includes five different species.

Perhaps BCI's best experience in helping to save an abandoned mine for bats came in the town of Iron Mountain, Michigan. In November 1992 local cave explorer Steve Smith had descended by rope into the 300-foot-deep vertical entrance of the Millie Hill Mine, scheduled to be closed within months. Where iron ore had once been excavated, he discovered the second largest hibernating population of bats in North America—nearly one million little brown and big brown bats. Steve immediately called BCI to help save them.

When I arrived in Iron Mountain, I sensed suspicion in the air. When Bob Doepker, a Michigan Department of Natural Resources biologist, and I telephoned city and mining officials, no one returned our calls. We were sure they feared an attack by aggressive environmentalists, so we set about trying to reassure the community. I arranged to speak to classes at two elementary schools and to introduce the children to live bats (I seldom travel without at least one for show-and-tell purposes).

The kids were immediately fascinated by the bats. I promised to show them even more if they would bring their parents to another talk I had arranged for the next night at the public library.

To everyone's surprise about 300 parents and children showed up. By the end of the evening minds were open, and bats had new friends. Businesses offered to donate materials, and volunteers offered their labor to build a heavy steel cage over the Millie Hill mine shaft. Now the people of Iron Mountain are very proud of their bat sanctuary.

Equally important, local mine inspectors are now cooperating to locate and protect other mines where bats live.

On the Federal level, last year BCI and the U.S. Bureau of Land Management jointly funded a partnership called the North American Bats and Mines Project. The goals: to educate landowners and land managers to survey for bats before mines are closed and, if important colonies are present, to construct more of those bat-friendly gates.

This is the kind of education BCI has always promoted. One of our earliest achievements was to persuade people to quit poisoning bats in Wisconsin buildings, keeping them out instead. This happened in the early 1980's, when I was curator of mammals at the Milwaukee Public Museum.

Milwaukee's phone book listed an entry under "Bats"—my number, often called by people alarmed by a bat encounter. One morning I took a call from a woman paralyzed with fear. She said she and her husband had spent the previous night barricaded in their home, blocking every possible entryway into the house against attacking bats that had nearly "gotten them."

I asked her to describe the bats. " Small and orange, " she said. Hmmm. I quickly deduced that the winged creatures that had terrified the couple were not "attacking bats" but hundreds of monarch butterflies that had paused to rest in their yard during the fall migration.

On another occasion, a county park superintendent told me that four people had been attacked by bats in one of his parks. The victims were receiving rabies inoculations and were threatening to sue the county. When I investigated, the demon bats turned out to be a female screech owl guarding her nest low in a tree. When passersby came too close, she struck their heads from behind. This happened always at dusk, and the victims blamed their ambush on the bats they saw swooping nearby, rather than the unseen owl.

Avoiding controversy and promoting partnership have always been at the heart of BCI's philosophy, and it's usually worked . . . eventually. Bats are often much easier and less costly to protect than other animals. Many live in large groups in well-defined locations, such as caves, mines, and bridge crevices, where a little protection can go a long way.

Bats just need a little kind attention, but it's hard to come by. According to a recent University of Chicago study, the Federal Government spends nearly $5 million trying to save one Florida panther, $184,000 for each grizzly bear, more than $1.5 million per California condor—and less than $3 on an endangered gray bat. Given their ecological and economic value, bats are an especially good investment.

As BCI worked to raise public awareness in Milwaukee, a greater opportunity was unfolding a thousand miles to the south in Austin, TX. Spanning Town Lake on the Colorado River, Austin's downtown Congress Avenue Bridge was renovated in 1980. Many Mexican free-tailed bats had lost their caves in the area, and it didn't take them long to find the new crevices under the bridge just the right size to let them squeeze in.

There they snooze during the day, between 750,000 and 1.5 million of them, the largest urban bat colony in North America. At night they emerge to hunt insects, creating swirling skeins visible for miles around-a spectacle as grand as Carlsbad Cavern's famed New Mexico colony, which has declined to less than a million.

At first the people of Austin saw a nightmare instead of a spectacle. As the bats took wing, all the old bat bugaboos arose from the populace. Newspapers ran headlines like "Bat Colonies Sink Teeth Into City." People eagerly signed petitions demanding that the bats be exterminated, and the Texas Department of Transportation began research into ways to evict the bats.

To me the situation represented a tremendous opportunity. In 1986 I moved BCI to Austin and began trying to reduce fear with reason. Skeptics abounded. Upon our arrival a Texas magazine joshed us with a Bum Steer award. But as I introduced Austinites to their bats through lectures, talk shows, and audiovisual programs for schools, people quickly changed their minds.

For example, the Texas Department of Transportation has come full circle. After I spoke at a bridge designers conference, the department funded major research to design more bat-friendly bridges. "We have about six million bats already living in 59 Texas bridges, " says structural engineer Mark J. Bloschock, "and we'll be building 15 to 20 new bridges a year that together will accommodate a million new bats."

Now when the bats stream out of the bridge at dusk, it's cause for celebration. Awaiting the event, bat-watchers spread blankets on the riverbank; above it, restaurants are packed with onlookers. Curious tourists come from around the world to this self-proclaimed Bat Capital of America to view the bats. Outdoor parties feature bat detectors, electronic receivers that can be tuned to ultrasonic frequencies emitted by bats. When the detectors beep, guests scan the sky.

Some Austinites who feared the bats a decade ago are among BCI's members, now nearly 13,000 strong. Our projects have been fruitful. We bought Bracken Cave, 60 miles southwest of Austin, to protect 20 million Mexican free-tailed bats, the world's largest colony of bats. We sponsor workshops nationally to teach wildlife managers and conservationists how to protect bats. We also have developed partnerships with State and Federal agencies. We're working with Mexican officials to gain better protection for several species that winter in Mexico before migrating to the U.S. for the summer.

We publish special bat-house plans for both backyard amateurs and professional biologists, many of whom participate in our North American Bat House Research Project. They share information and experiment with new designs and locations for the houses. Some individuals have attracted 2,000 to 10,000 bats apiece.

More than 10 years ago, when I was still in Milwaukee, an Oregon farmer named Tony Koch called me seeking information about bat houses. He had already reduced his need to use pesticides by building more than 800 birdhouses. He hoped to cut down the pesticides—and the insects—even more by attracting bats.

Tony built three bat houses. After 3 years, he finally found five little brown bats in one house. Then he began trying different kinds of wood, aged wood, and different locations. Now he has four bat houses of varying designs on his barn, nine nursery boxes inside the barn, and eight boxes on wooden posts around his fir trees. They are occupied by several thousand contented little brown bats.

Once Tony's corn crop was infested with corn earworms, with an average of one to four of those destructive moth larvae per ear. For the past several years he has had none. The farmer's friends have come home to roost.

Senator KEMPTHORNE. Mr. Chairman, thank you, and we appreciate whatever time you can devote to this. I will mention we've

held field hearings out in Idaho and Oregon, and again I was very delighted that Senator Chafee joined us for those hearings. During the August recess it is my intent that we will hold additional hearings throughout the United States, and again the chairman has indicated that he will join us for that.

So that's real dedication on his part.

Senator CHAFEE. Well, I must say, Mr. Chairman, I didn't consider it exactly extra arduous duty to go to Idaho. You've got a lovely State and you gave us a very, very interesting and constructive time there, and I'm sure also of the visits that we make in the August recess.

I'm so optimistic when we talk about the August recess—we're assuming there will be one.

[Laughter.]

Senator KEMPTHORNE. If not, there may be other endangered species around here.

I might note too that while we were on one of the field trips during those hearings, Senator Chafee was able to walk and see one of the dams and coming through one of the ladders, the fish ladders, was a wild steelhead stock, which is rare. But he was able to hold it, grab it with his bare hands—we have great pictures of it—and we just thank the agency that made that all possible.

Senator CHAFEE. Yes, Mr. Chairman, I wasn't exactly sure they didn't have this stored away somewhere just to wheel out just as we came through. That poor old steelhead has been through that dam, it's probably about—every time outside when a so-called dignitary comes by I think he's the one they run through.

[Laughter.]

Senator KEMPTHORNE. Well, with that, we look forward to our first panel. Certainly, we have with us, of course, Mollie Beattie, who is the Director of the Fish and Wildlife Service, the Department of Interior; Rolland Schmitten, the Assistant Administrator, National Marine Fisheries Service in the Department of Commerce—two individuals that I have the utmost respect for with the tough assignments that you have that you have been tackling, and I just appreciate the working relationship that we have. So I look forward to your testimony this morning, and your formal opening statements will certainly be made part of the record, but I look forward to any comments that you would like to make now.

So, Madam Director.

STATEMENT OF MOLLIE BEATTIE, DIRECTOR, FISH AND WILDLIFE SERVICE, DEPARTMENT OF INTERIOR

Ms. BEATTIE. Thank you, Senator. It is a great privilege to come and testify today. I compliment you on a thorough and balanced hearing this morning. I'm always happy also to be part of what we call now the Rollie and Mollie show.

[Laughter.]

Ms. BEATTIE. There was much that the Fish and Wildlife Service can agree on with your opening comments, Senators, particularly that recovery is really the soul and the purpose, obviously, of the Endangered Species Act. Within recovery we really think of there being two goals—one is short-term and one is long-term.

The short-term goal is to prevent extinction. It is very hard to tell in a statistical way how well we have done at that, but we can say that we have about 960 species, plants and animals, on the endangered species list at this time, and we certainly within that number, without knowing for how many, can take credit as Americans for having saved a good proportion from extinction.

The long-term goal, of course, is to recover those species. Of the roughly 960 species, we estimate that about 200 are currently stable or increasing, which means that at least for that 200 we have pulled them one step back from extinction.

The stark reality of recovery is that quick comebacks will be rare. If we stop and think that it has taken 100 or 200 years of balancing effectively—in other words, whenever a choice was to be made between the conservation of habitat and the species in them or economic development, for many species we have chosen economic development. To the extent that we have 10, 5, 2 or 1 percent of their natural range left, it is clear that reversing that pattern of over 100 or 200 years, at a time when the population of this country has doubled in a few short decades is quite a challenge. It involves enormous amounts of quick, scientific research; it involves partnerships with all jurisdictions, be they other Federal agencies, States, private landowners, tribes and corporations; it involves a great deal of research and public comments; and most of all, it involves turning around a very precipitous decline, a trend that is heading toward extinction in a short period of time.

One good comparison relative to the difficulty of quick turnarounds is that of 106 species that were listed at the time the ESA was passed 22 years, 58 percent of those are now recovering. But of the species listed just since 1993, only 6 percent have begun the recovery efforts and the journey back from extinction, so I think that shows that this is an arduous task. We, of course, would agree that there are many ways that the recovery process can be improved. The Senators have touched on some of those. We, for instance, would agree that once the numerical and habitat conservation goals and regulatory protection goals have been met for a species, they should be relatively automatically delisted to speed up that process. Right now the delisting process is the reverse of the listing process, which is proposals, and research and public comment. If we have set a recovery trend that sets bench marks, we should abide by them and really speed up the delisting and what we call the uplisting process, which is moving species from the endangered list to the threatened list, which has recently happened with our bald eagle.

I would actually like to point out, however, that the efforts to improve recovery would be severely hampered by the budget cuts assigned by the House for the 1996 budget. In fact, if you look at the criticisms of the Endangered Species Act, everything from the science—and we would defend ourselves hard from those criticisms, but, at any rate, they exist—criticism of the science to problems with recovery to not enough effort to avoid listing. Each of those items coming over in the House version of the 1996 budget has been either seriously debilitated or completely unfunded.

Successful recovery efforts depend on acting early, working with partners and maintaining an ongoing commitment to the effort.

Again, the recovery—those funds for those kinds of efforts have been eliminated so far from the 1996 budget.

On our international program I want to point out, as Senator Chafee did, that it helps protect and not only fulfills a sort of moral obligation on our part to have our citizens treat foreign species with the conservation care they would treat those that are within our own boundaries, but also helps to protect some of those animals that are most loved by Americans. We have consistently and I think for a very long time recorded more mail at the Fish and Wildlife Service on the African elephant than any other species, and that steady stream of mail occurs whether there is a proposal to change the management of the elephant or not. The elephants and I think close behind them, tigers, are much loved by the American people.

The vehicle by which we try to affect the conservation regime for American citizens regarding international species is through the Convention on International Trade and Endangered Species, so-called CITES, which is now the largest and fastest growing international treaty. There are 128 member countries and that seems to grow with every convention of the parties. It is implemented domestically by the Endangered Species Act. The purposes and in fact the list of species protected by CITES and by the Endangered Species Act are almost completely the same. There are some differences. Most endangered species protection stops at the border, and CITES protects species beyond U.S. borders. A lot of non-domestic species are on the domestic endangered species list, and, with that, we prohibit interstate and international trafficking in those international species and add a slightly more stringent restriction on the importation of those species than does CITES. CITES requires that we make a judgment, make a finding, that the importation of another species from another country will not be to the detriment of that species. Our requirement is actually through the Endangered Species Act and our own policy is actually that the importation contribute to the conservation of that species in another country.

The U.S. coordinates with other parties on listings. Prior to listing under the ESA for international species, our scientists consult with the affected countries. We receive comments from other countries, and those are given full consideration before final decisions are made on listing an international species under the Endangered Species Act. We are working very hard on a commitment we made at a recent convention of the parties in 1994 to improve our communications with other countries and our considerations of their views, including listings under CITES and the ESA.

I led the U.S. delegation or was the first alternate and was present at the entire convention of the parties, conference of the parties, in 1994. I can tell you that enormous steps were made at that convention to improve the communication and to listen very carefully and follow the lead of range States relative to the listing and management of species.

The United States very strongly supports the sustainable use of international species, especially where that contributes to community empowerment, community economic development and community protection—local community protection of those species.

In terms of the permit systems that we run under our international program for endangered species and CITES, we are continuously looking to improve that program. We have goals of a maximum of 90 days for permits to be given under the CITES permit process. We are adding additional changes and we are automating systems wherever we can, including 800 numbers for importers and exporters to call, fax lines, streamline processes wherever we can, and we are always pleased to consider constructive suggestions for improving those processes.

In conclusion, Senators, I would just like to say and remind all of us that our willingness to conserve species simply reflects the deep appreciation Americans hold for the richness and beauty of the natural world and an inherent understanding—and I think this is the very most point—that the fate of our plants and animals is the same as the fate of humans in the long-run, both here and abroad.

Thank you very much.

Senator KEMPTHORNE. Ms. Beattie, thank you very much.

Mr. SCHMITTEN.

STATEMENT OF ROLLAND SCHMITTEN, ASSISTANT ADMINISTRATOR, NATIONAL MARINE FISHERIES SERVICE, DEPARTMENT OF COMMERCE

Mr. SCHMITTEN. Good morning, Mr. Chairmen and members of the subcommittee. I am Rolland Schmitten, the Assistant Administrator for Fisheries, and we are a part of NOAA, the National Oceanic and Atmospheric Administration. I do appreciate the opportunity to be here and to present my agency's views on the reauthorization of the ESA, and we'll focus on what the committee has asked—recovery, delisting and international efforts. I've submitted written testimony for the record, but I do know that you have a full schedule, and I'll just summarize my testimony for you.

Just a short personal note, I've spent the last 25 years involved in research management—that includes timber, fish and wildlife—the past 15 years exclusively in fisheries as a State director of fisheries, 11 years as a Federal regional director for 11 States, and then the last year and a half as the national administrator. So I've had first-hand experience in both working—well, actually, from working both sides of the ESA issue.

As a resource manager, I would state that the ESA is our best hope for preserving a rich, national biological heritage. I certainly concur with Senator Chafee. In my discussions with resource managers from around the world, the ESA is often used as a bench mark for species preservation that other countries aspire to. I think the further need for species preservation indicating how important it is since the passage of the Act 22 years ago, it was noted in the National Research Council's report that the current rate of species extinction is at an all time high. Many scientists believe that the rate has reached a crises proportion. I would say, on the other hand, that there have been many lessons learned in the past 22 years, and it's very appropriate. The Administration and Congress look at ways to improve the Act, its effectiveness for both species and mankind.

Recovery, I totally agree it is the heart and the soul of the Act. The goals of the Act are to provide for the conservation and survival of the species, and also to recover those species that have been listed, the self-sustaining populations no longer in need of necessary protections. Likely, the most significant aspect of that goal is to base the listings and recovery on good science. The NRC found that the ESA is based on sound scientific principles. My agency believes that these scientific principles must control determinations about the listing of species and their need for recovery. To ensure that the best scientific information is available for these decisions, our services—both the Fish and Wildlife Service and the National Marine Fisheries Service—published joint policies to mandate that these high standards are now met.

For example, there is a general need to improve science by reaching outside of our agencies, and that's a simple admission that the Federal Government doesn't know everything. Further, it's our joint policy to incorporate peer review to ensure the scientific scrutiny of ESA listings and recovery plans. We also recognize that the States—and in some cases in the Northwest—tribal governments that possess broad trustee responsibility for fish, and wildlife and plants. We encourage the States to provide their data, their valuable expertise on the status of these stocks, and we encourage them as full partners so as not to be left out of the process.

Broad public participation and support is essential for successful recovery efforts, and, therefore, our agencies have expanded both Federal, local, State, tribal and other affected interests in developing strategies to implement recovery actions.

Frankly, the public has got to be involved prior to, during and after listings, and the bottom line is that communication is going to be an essential link in whether we have a successful recovery plan.

We're in complete agreement with the NRC's statement that "The protection of habitat is absolutely critical, crucial to the survival and recovery of species. Without habitat protection, a species cannot survive, it cannot recover and there is no alternative."

Delisting . . . while the immediate goal of the ESA is to prevent the extinction of species, the long-term goal is recovery to the point where species can be delisted or downlisted. For example, of those species that we manage, we recently delisted the gray whale, and we removed it from the list of threatened and endangered species, and there are a couple of steps outlined for doing that:

No. 1, site-specific management actions necessary to meet the plan's goals for conservation and survival. For the gray whale, that included no harassing, setbacks for whale watching, protections that we worked out with the Mexican Government, international cooperation, and the other criteria was objective measurable criteria that when met results in the removal of the species from the list. And, there again, each case is tailored to the species' need, and, in this case, our criteria was based on historic numbers, prewhaling. We met and exceeded those numbers. We now have a more robust population of gray whales than anytime in the history of our record keeping.

International protection for fish and wildlife, for many marine—and in our case, all species—protection on an international scale is

vitally important. Our National Marine Fisheries Service represents the largest fisheries management system in the world. We have more shoreline than any country in the world. We oversee 2 million square miles of ocean, and we have over 300 different species that are harvested. Many of these species are highly migratory and they cross international boundaries annually. Commercial fishing by foreign fleets and other foreign activities have major impacts on America's marine resources. The U.S. initiated U.N. moratorium on the use of large scale drift nets for ocean fishing is a very good example of how our government can exert influences beyond our borders.

Another example is this Nation's action to protect whales through its membership in the International Whaling Commission. Another way—a way that we're very proud to be supportive of is the Fish and Wildlife Service's lead in the conservation on international trade for the endangered species of wild Fauna and Flora CITES. We certainly commend them and support them in their efforts.

While the majority of CITES listed species are under the Fish and Wildlife jurisdiction, more recently many, many more species are coming under the jurisdiction of the National Marine Fisheries Service, including whales, and dolphins, sea turtles, seals, conch and coral, and we will continue to provide this assistance through the Fish and Wildlife Service.

In conclusion, Mr. Chairman, and members, we support keeping provisions of the ESA that protect species that occur outside U.S. jurisdictions. While treaties and conventions such as CITES provide essential protection for wildlife, they are limited in their application. Our experiences have shown that in some cases for some species we also require the necessary protections afforded under the Endangered Species Act.

I'm proud to say that my agency is becoming more efficient. I am learning in the last year and a half that I've been at the helm. Mr. Chairman, I thought you might like to know that we have completed 1,260 consultations since we last visited, and that's out of 1,343 that are out there. So I feel very good about that record, and that was because of the streamlining that we worked on together. We're committed to treating the public fairly in carrying out this responsibility, and with the policy guidelines implemented by the Fish and Wildlife Service and the National Marine Fisheries Service and the reforms suggested by the administration, we believe that the Act can work even better.

Mr. Chairman, again, I look forward to working continuously with you and the subcommittee, and I thank you for this opportunity to be here.

Senator KEMPTHORNE. Mr. Schmitten, thank you very much.

Before we begin a round of questioning, I would like to acknowledge that Senator Reid, the ranking Democratic member, is with us.

Senator Reid, do you have any comments that you would like to make?

Senator REID. No comments, Mr. Chairman. Thank you.

Senator KEMPTHORNE. All right, then what I would like to do is begin a round of questions, and we will limit it to 5 minutes. And

for all of you who will be testifying today, you will become familiar with our lighting system, but green, of course, means that we have plenty of time, yellow means we're down to one minute, red means that we're going to be concluding.

So, with that, we will begin.

I mentioned in my opening remarks the delays that have occurred in the past on preparing recovery plans, and I noticed that in Director Beattie's statement that the Fish and Wildlife Service has a goal of writing recovery plans within 2½ years.

Ms. BEATTIE. That is true, Senator.

Senator KEMPTHORNE. Mr. Schmitten, does the National Marine Fisheries Service have a similar goal?

Mr. SCHMITTEN. Mr. Chairman, we have a total of 29 listed species, so our job is not quite as laborious as the Fish and Wildlife Service who has over 800 listed species. Of those species, most have recovery plans that have been completed. We understand the need and the efficiency of moving just as quickly as possible. We do set 2½ years as our outside mark.

Senator KEMPTHORNE. So you believe that you're well within that 2½ mark?

Mr. SCHMITTEN. We strive to be well within, and we are for most of our species.

Senator KEMPTHORNE. What's your current recovery backlog?

Mr. SCHMITTEN. Of the 29 listed species—just getting my information right here—we have 10 recovery plans, eight foreign species which do not require plans, one draft and three in progress.

Senator KEMPTHORNE. Would you explain for me then the management structure you have in place for tracking these recovery plans? For example, is there a daily, or a weekly, or a monthly report on the status of these recovery plans?

Mr. SCHMITTEN. No, sir.

Senator KEMPTHORNE. OK, and given our shared concern, I appreciated your opening comments. Would you support a statutory deadline for completing recovery plans?

Mr. SCHMITTEN. I would.

Senator KEMPTHORNE. Ms. Beattie, would you also support a statutory deadline?

Ms. BEATTIE. Yes, Senator. Sometimes the delays in statutory deadlines are not under our control. So, obviously, if there were caveats that pointed to those kinds of delays, again, forming partnerships sometimes takes time and is long. But, yes, as a general goal, we would.

Senator KEMPTHORNE. OK, Mr. Schmitten, I would just note too, as you know, we came through a situation in Idaho where six national forests—a Federal judge ruled that we could not continue activity on six national forests because of the failure of the National Marine Fisheries Service and the Forestry Department to consult, and one of the aggravations that we find from the Forestry Division is the fact that it was difficult to get a consultation completed with the National Marine Fisheries Service, and this is a continual complaint that I hear about NMFS.

Any comments on that?

Mr. SCHMITTEN. Absolutely, Mr. Chairman, I hope you no longer hear those complaints, and that was why I specifically wanted to

give you our actions and consultation. Part of the process that we had talked about before was forming a team in which all the Federal agencies would sit down at one time, review these processes, review the projects, have the Forest Service or the action agency identify their priorities, and we simply will meet those.

I should indicate that the lawsuit on the failure to consult was an agreement that we had reached that we did not believe we needed to consult, and once finding out that the courts disagreed with that, we did meet their timeframe that resulted in the removal of the injunction and no jobs were delayed or lost because of that action. We, henceforth, are consulting on all actions—nearly 1,400 of those before us this year.

Senator KEMPTHORNE. I think the real dilemma there is that we have a Federal judge who says that you should have been consulting so he says that we will not allow any further activity. You have two Federal agencies then that didn't feel they had to consult. Meanwhile, the Federal taxpayers are about ready to lose their jobs because of this.

Mr. SCHMITTEN. Realizing that concern—and that was a real concern with us, as well as certainly those whose jobs are threatened—we worked around the clock, both the Forest Service and ourselves. We met and exceeded the timeframe of the court, and I think the court recognized that effort when they removed the injunction.

Senator KEMPTHORNE. OK, Ms. Beattie, I have in my possession a letter from the head of the recovery team for the peregrine falcon to the Fish and Wildlife Service, which states that the service, quote, "has damaged the credibility of the team," unquote, and that the team, quote, "vehemently opposes the actions of the Fish and Wildlife Service."

I also have a reply from the Fish and Wildlife Service that says that they realize this was very unfortunate—the actions taken by the Fish and Wildlife Service—and that the problem will be fixed, but I understand that it has not been fixed.

Any comments on that?

Ms. BEATTIE. Senator, I'm sorry, if my signature appears on that letter responding, it may have been a mechanical one.

Senator KEMPTHORNE. It does not.

Ms. BEATTIE. If you could outline for me the actions that were the target of the objections, that would be helpful.

Senator KEMPTHORNE. Sure, your signature does not. It's by a regional director and——

Ms. BEATTIE. Whew.

[Laughter.]

Senator KEMPTHORNE. No, I wouldn't surprise you like that. The issue was that the—and I'll just read you the sentence. "The Fish and Wildlife Service has damaged the credibility of the Western peregrine recovery team by circulating a highly modified version of the addendum to the Pacific Coast and Rocky Mountain recovery plans. The document carries our names but now includes views the team vehemently opposes beyond the misstatements of fact." So, again, a highly modified version still carrying the names of the team and they absolutely disagree with those conclusions.

Ms. BEATTIE. Senator, I can't give you any clarification, but I could get back to you on that. If the objection is somehow related to the improvement or the delisting of the falcon, I regret any misunderstanding with the team, but, again, we aim for fairly discreet identifiable recovery goals, which we met. If we had a breach of protocol on the way to get there, we will look into it and I will get back to you on it, but that doesn't take away from the fact that the recovery goals were met and the peregrine falcon was delisted or proposed for delisting, to be technically correct.

Senator KEMPTHORNE. I will note that a few weeks ago I was delighted to join you and Dr. Kade in that announcement of the delisting of the peregrine falcon, and Jeff Cilek, who is the program director for The Peregrine Fund, is one of the panelist today so that we can discuss this whole aspect, so I appreciate that.

Ms. BEATTIE. Thank you, and we will get back to you on that.

Senator KEMPTHORNE. Thank you.

All right, with that, let me call upon Senator Chafee to begin his questions.

Senator CHAFEE. Thank you, Mr. Chairman.

Ms. Beattie, I would ask that you take a look at a bill that Senator McConnell introduced, and he was unable to be here today to ask you about it, but the bill says it would require the Secretary of the Interior to prohibit the import and export sale purchase and possession of bear viscera or products that contain or claim to contain bear viscera and for other purposes. It's an Act that's cited as the Bear Protection Act. It's S. 968, and there is poaching taking place because this has led—apparently bear organs such as gall bladders are commonly used in traditional Asian medicine to treat everything from diabetes to heart disease. So he is interested in that legislation and I would be interested to get any comments your office could give to Senator McConnell on that.

Ms. BEATTIE. We would be happy to, Senator.

Senator CHAFEE. Now I find it difficult to understand what's taking place in the House. This isn't a totally new experience.

[Laughter.]

Senator CHAFEE. There are objections to the speed with which you are proceeding in your listing and delisting, with your recovery plans, but at the same time they eliminated all funds for listing and prelisting in the House Interior Appropriations bill. Now what's that going to do to your recovery efforts?

Ms. BEATTIE. Debilitate them rather severely, Senator, and we agree with your analysis. If the premise is that things are moving too slowly or that they're not as effective as they could be, how we get to the conclusion that therefore we do less of them is perplexing to us as well.

The prelisting money . . . we sometimes suppose that the elimination of the prelisting money may reflect some member's misunderstanding of what that is, and the term is probably misleading. Prelisting does not refer to activities that lead up to a listing. It refers in fact to activities meant to avoid a listing. In other words, when we see a bad situation coming, we try to immediately go to that State, or that landowner, or whatever partner could be and try to get a conservation plan in place that will avert the need for a listing, and that's what the prelisting money is for.

Senator CHAFEE. You know, prelisting—maybe you ought to have a happier term than prelisting because it suggests a listing is going to follow. What indeed it is is sort of a warning sign that this is a potentially endangered species coming up.

Ms. BEATTIE. That's right.

Senator CHAFEE. Sort of pre-threatened.

Ms. BEATTIE. That's right, that's the money we use—as I've said many times, the Fish and Wildlife Service regards every listing as a failure not only on our part, but on perhaps all of our society's part, and we would prefer to avoid them at all costs where they can be avoided on a biological basis.

Senator CHAFEE. Now, you've only got X amount of resources, a finite amount of resources, and you must end up in carrying out some kind of a prioritization, a de facto, in connection with your recovery efforts.

How do you make those decisions?

Ms. BEATTIE. Senator, you're absolutely right. We do triage every day of the week. Someone—and I haven't checked this out—but someone has made an equivalency between the amount of money we have to protect and recover endangered species in this country and the amount it takes to pave, I think, it's 1 or 2 miles of interstate highway, and they're roughly equivalent.

Our decision rule at the moment is the degree of endangerment. Our scientists tried to decide which species are closest to the edge and to go for those quickly. It is a question that has been asked many times in this body, and there are a number of other criteria I suppose we could use such as the role of the species in the ecosystem and make some human judgment on its significance in that ecosystem. Some suggest that we use a cost-benefit analysis, but none of us can figure out once you've assessed—which can be done with some degree, I suppose, of precision—the local economic short-term impacts of a listing, we don't know to what you are supposed to then compare that.

So the decision rule we use is the degree of endangerment, and it's based on five criteria that have to do with what protections are in place, another is what efforts are being made. It has to do with the rate of loss of habitat, it has to do with utilization—either from hunting or other types of use. So we look at those five criteria or commercial use and try to decide which ones are closest to the edge and then try to work with those first.

Senator CHAFEE. I know my time is up, but I just want to briefly say that it seems to me once the species has been recovered that the delisting procedures could be more rapid. I see—we've all seen areas where the American bald eagle is really in abundance. You haven't totally delisted that even now, have you?

Ms. BEATTIE. No, it is still——

Senator CHAFEE. From the threatened list?

Ms. BEATTIE. Yes, we propose to put it—we have just put it on the threatened list. Technically, the paperwork ended and it took a year from the proposal to put it on "threatened" and it just ended. But there still are places where the eagles are threatened either through loss of habitat or particular poisoning, but they are steadily making improvements, but it is a slow process.

Senator CHAFEE. Well, the——

Ms. BEATTIE. The place center, if I might interrupt, as I mentioned earlier, the way we could make progress in the delisting process is perhaps to truncate the process itself of delisting. In other words, if we've got those bench marks out there, why can't we have an automotive switch when the biologists say we've met it rather than go through the very long protected process of years of public comment, et cetera. So that is a place I think we could really streamline the delisting process.

Senator CHAFEE. Well, I think so but also I think you ought to have a triumphant announcement when it's over with. You mentioned building roads. When I was Governor, we were building a lot of roads and I would have a triumphant announcement every quarter mile of highway, and it really worked out very well.

[Laughter.]

Senator CHAFEE. So I think—people are saying you're not doing anything, but there was an article—I think it was in the Post last week about the total Endangered Species Act is nonsense, nothing is accomplished by it, and the only way you get a delisting is because something has become extinct.

So I think the world ought to know some of the good things you're accomplishing.

Ms. BEATTIE. We would entertain a line item for fire works, Senator.

[Laughter.]

Senator KEMPTHORNE. Senator Chafee, thank you very much.

Senator REID.

Senator REID. I think sometimes we tend to forget in this modern, political environment that the Endangered Species Act was signed by President Nixon, signed into law by President Nixon in 1973. This wasn't part of the great society. It was part of an effort that was bipartisan in nature at the time, isn't that right?

Ms. BEATTIE. Yes, it was.

Senator REID. You mentioned in response to Chairman Kempthorne that you would accept a statutory deadline. What kind of a deadline do you think would be appropriate?

Ms. BEATTIE. Well, we have proposed essentially a self-imposed deadline of 2½ years for recovery plans, and my response to the Chair is that, yes, we could institutionalize that deadline with some caveats.

Senator REID. But what kind of exceptions would you want?

Ms. BEATTIE. Well, there are many elements of coming into recovery plan agreements that are not under our control. One of them is resources, another one is that we, of course, for practical—and I guess I would call them moral reasons—we need the partnership of everyone who is going to be impacted and everyone who can contribute to the conservation of the species, and sometimes that takes a lot of time. There is also the caveat, which is one we would have to think about hard, of scientific research. Often, we will get news of a species that really has—whereas we can determine that the five factors in the law that are the basis of endangerment are applicable and operative—no other foundation of research under that species. So we really have to scramble to find out things about its life history and particularly its reproductive capabilities. Some

species only reproduce every 3, or 5 or whatever years, and that, obviously, has a big bearing on the recovery plans.

So there would have to be some caveats, but as a self-imposed general deadline we would—I'm sorry, as a statutory deadline that was general with qualifications, we would certainly accept it.

Senator REID. I've read ahead to the testimony that will be coming later today, and there is a group that will testify and they've done a lot of work on the fairy shrimp, the problem mostly in California. One of the things in reading their testimony I have trouble arriving at is a conclusion, why were these shrimp listed in the first place?

Ms. BEATTIE. For the reason that I said earlier—I agreed with the chair earlier and with Senator Chafee—that the heart and soul of the Endangered Species Act is recovery but it's other heart and soul is science. So this fairy shrimp was listed based on the best available science, as reviewed by biologists all the way up the line.

Senator REID. Would it be listed today, do you think, with science as it is now?

Ms. BEATTIE. Yes, no one has presented us any data—we are always open to additional data and have invited all of our critics to submit it. That listing was peer reviewed by academicians. I believe none of them—I should say, I believe all of them recommended the listing. The science is sound. Again, science can always be improved but the standard in the law is not beyond a reasonable doubt standard, but a best available evidence, preponderance of evidence standard, and this one met it, Senator.

The issue often I find—if I may editorialize—with the fairy shrimp is simply that people don't think the fairy shrimp is important and should not be a block for economic development. That is an important question to ask in terms of how we list species and which ones we choose or not to——

Senator REID. Why don't I ask that question then. Why is that shrimp important? Why is it important?

Ms. BEATTIE. We believe it is ecologically important. First of all, it meets the standards of the Act. The Act lists very detailed what sort of——

Senator REID. Just to a layman, why is that little critter important?

Ms. BEATTIE. A couple of reasons—one is an indicator of a very important ecosystem in California called the Vernal Pool Ecosystem, which has a number of other species associated with it, including a bunch of very sort of interesting and dwindling plant life. So it is an ecosystem that used to be very widespread in California and is gone. Second of all, the fairy shrimp itself is a good example of a creature that while not cuddly—as our biologists would say, not something with eyelashes—but it, however, is dormant in the sand, basically in the soil——

Senator REID. When it rains.

Ms. BEATTIE [continuing]. And when it rains, it comes to life. This has enormous interests to the medical community to sell biology of how in heaven's name that could work. So there is a medical reason——

Senator REID. I wanted to ask one last question. Could one of you explain what has happened with the listing that I heard about

within the last 24 hours of the Coho Salmon in California and the cost of Oregon, and why the listing here is different than other listings.

Mr. SCHMITTEN. Yes, Senator Reid, it is not a listing, and that's very fundamental and important. It's a proposal to go forward. The Act sets a couple of timeframes—one, a 1-year time in which to do the necessary science and research and to report what we would recommend. In this case we went to each one of the western States. We formed a technical biological team with the State. We used their information and then after about 1½ years—we have proposed in the six known Coho species to list three as threatened, two as candidate species and drop one from consideration. We have hopes that Congress will decide—we have a year now in which to collect public information and other science—but that Congress will decide at that point, how they want the ESA to be reauthorized. So this is strictly a proposal.

Mr. REID. Have you ever done species like this before?

Mr. SCHMITTEN. Yes, sir.

Senator REID. Where?

Mr. SCHMITTEN. We've done the very same thing for chinook salmon—and these are actually listed species. We have four listed species of salmon—one in the State of California and that's the Winter-run Sacramento chinook, and we have three salmon species in the Snake River Basin.

Senator KEMPTHORNE. Ms. Beattie, I know that you're under time constraints——

Ms. BEATTIE. I am no longer.

Senator KEMPTHORNE. Oh, good, great.

All right, Senator Craig Thomas from Montana—Wyoming.

[Laughter.]

Senator KEMPTHORNE. I'm so used to turning at this point then to Senator Baucus from Montana for his round.

Mr. THOMAS. Thank you, sir. I'm sorry that I was a little late. Let me just make a kind of a quick statement, if I may. First of all, thank you for being here and having this hearing. I probably get more contacts and more letters from constituents with respect to endangered species than any other particular piece of legislation, and I suppose it's because the law has such personal and direct impacts on people's lives in my State.

Let me say at the outset that I don't know of anyone who wants to do away with the process, and I think we have to be a little careful. The advocates are always saying they want to do away with endangered species and all that, but that's not the case and I don't think anyone wants to do that. It's too bad if we can't have a reasonable debate about how we do something better than getting accused of wanting to do away with it, so let me make that point.

Grizzly bears, a growing number in the Yellowstone ecosystem and counters with private—more bears around the area than we've ever had, some human risk there. Most of the scientists, all of them as far as I know, 2 years ago had concluded that we had reached the target. Then the group took the greater ecosystem and divided it into four and said, well, we've reached it but it isn't in this portion. At any rate, we can't seem to get out of that.

So now we have a gray wolf. We spent $10 million to $12 million reintroducing a predator that's found most many places, and so we then end up with an unfunded mandate, I suppose, to the State when they go out of Yellowstone, which they won't stay.

The black footed ferret was discovered close to where I grew up, and it's been a pretty successful program. It's at that point where it's threatened to lose $250,000 support for that, but we can still spend $10 million for the grisly bear right up the road.

The Wyoming toad, an elusive critter, in search for two summers now. The Fish and Wildlife Service has been unable to find any toads outside of Laramie, WY, in which they consider to be a great habitat. They continue to place restrictions on the ability of the local government and property owners to even control mosquitos, and threatened if they aren't allowed to come on their property that they will not let them use these chemicals and so on.

So that's where we are, you know, and we really need to find some ways to do this job a little more consumer friendly, a little more reasonable, with a little more common sense, and I hope we're in the process of doing that.

We have a limited number of dollars. Do you consider every endangered species at the same level of importance?

Ms. BEATTIE. No, Senator. We try to measure their proximity to extinction and deal with those that are most endangered first.

Senator THOMAS. So just the fact that they're most endangered. The grizzly bear and some sort of an insect would be of the same importance to you?

Ms. BEATTIE. Some insects. Obviously, the law exempts insect pests, which I always want to point out, but they might be of same importance but certainly the grizzly bear and the recovery of an insect are considerably different levels of effort.

Senator THOMAS. But isn't there a basic question? I mean, are you going to spend the money to protect every endangered species?

Ms. BEATTIE. Senator, we're not spending the money to protect every endangered species. Again, we——

Senator THOMAS. You have a policy on that then?

Ms. BEATTIE. Absolutely.

Senator THOMAS. What is your policy?

Ms. BEATTIE. The policy basically, again, reflects our consideration of the level of endangerment. We often make a finding called warranted but precluded, which we recently did on the Bull Trout, and that finding is based on the fact that there are other species that are more endangered than this one and that people are also taking conservation efforts to protect one, but with that we say warranted but precluded. Yes, it qualifies for endangered but we don't have the resources and there are situations that are far more important.

Senator THOMAS. So you will make a judgment as to what's——

Ms. BEATTIE. We do according to a policy and we can document how those judgments are made in every case, Senator.

Senator THOMAS. What about the grizzly bear thing. There is a problem with delisting and you've commented on it, but what's the solution to that?

Ms. BEATTIE. Right now we are working with the States of Idaho and Wyoming and Montana to come up with a management plan

so that we can hand each of those species at the point of delisting over to the States. That is generally the last major obstacle at this point, the delisting. As far as I know, those discussions are—they're very hard discussions because they're very technical but as far as I know, they're proceeding very well.

Senator THOMAS. What does that mean, very well? When were you going to delist them?

Ms. BEATTIE. I could get back to you on that. It is determined——

Senator THOMAS. Don't you think it's been going on a little bit long?

Ms. BEATTIE. Senator, I don't know how to answer that question. I mean, what is too long and what is too short to save the grizzly bear? I don't know. It's——

Senator THOMAS. Well, you've reached the goal. You're pass the goal of the numbers that you were going to come to.

Ms. BEATTIE. That's right, and the last step, as you know, when we delist a species is to hand it back to the State for management——

Senator THOMAS. I guess my question is there needs to be some measurement of performance based on how long things take. I mean, you know, you sort of can say, well, it's difficult. Of course, it's difficult. Well, what if it takes 10 years, is that OK if it's difficult or is there some—how do you measure performance?

Ms. BEATTIE. Senator, we now measure performance according to improved recovery plans where we set bench marks and the grizzly bear—granted we changed the bench mark at one point because we learned more—the grizzly bear is a tremendously difficult case because its reproductive rate is so slow. The females only reproduce every few years so getting the population back up takes a while.

These are tremendously difficult things, but I also point out that we—let me take another situation that I'm sure you've heard of which is the gray wolf. In that one, we are working very hard with reintroduction to get the wolf off the list as quick as possible, and we can demonstrate with the best biology that I don't think many people would argue that reintroducing wolves is the quickest way to get them off the list to give them back to the State as quickly as we possibly can. It shortens the recovery period by something like 20 years——

Senator THOMAS. Why are they on the list, are they nearly extinct?

Ms. BEATTIE. Because in the United States the gray wolf had been basically extirpated, yes.

Senator THOMAS. Minnesota?

Ms. BEATTIE. The recovery plan, Senator, which I would be happy to share with you shows that they ask again in the recovery plan—they try to answer the question, what do you consider recovered? What we consider recovered is a restoration in three parts of the original range of the gray wolf. One of them is Minnesota and one of them is the Northern Rockies, and when we hit those—certainly we're recovered in Minnesota—but when we hit the Northern Rockies, they're off the list——

Senator THOMAS. Alaska?

Ms. BEATTIE. The Alaska population is a disjunctive population.

Senator THOMAS. Yes, but they're hardly endangered then as a species, right?

Ms. BEATTIE. That's true, Senator.

Senator THOMAS. You know, I guess—and I understand and I appreciate what you're saying. On the other hand, you and your group properly are advocates for the program and should be.

Ms. BEATTIE. I believe we're——

Senator THOMAS. Perhaps occasionally overzealous a little bit. So there needs to be some kind of policy that would say there are other things to be considered as well. Other people have concerns and interests as well. I guess that's what we're seeking to do is find some balance. Do you agree with that?

Ms. BEATTIE. I always agree that we're trying to find balance, Senator. I am very reluctant to agree that we're going to be able through cost-benefit analysis to decide whether or not to save the grizzly bear, a straight cost-benefit analysis. I believe there are criteria such as the recoverability of species that we should consider. Is the investment going to get to us to the end or is this species so close to the edge we're going to let it go?

Senator THOMAS. As the budget changes, inevitably changes, then you think you will be doing any cost-benefit analysis?

Ms. BEATTIE. Well, we do cost-benefit analysis——

Senator THOMAS. Sure, you do. Everybody does.

Ms. BEATTIE. Not in the list of endangered species——

Senator THOMAS. To suggest that that isn't a reasonable thing for us to do seems to me to be out of character a bit. Don't you do that? What do you spend your money for? How do you decide how you're going to spend it?

Ms. BEATTIE. Well, I think I've answered that question. We decided, in terms of listing, based on endangerment, past that point we do cost-benefit analysis.

Senator THOMAS. You don't make any judgments as to how you spend your money then at a cost-benefit within the agency?

Ms. BEATTIE. No, we do, Senator.

Senator THOMAS. Sure, you do.

Ms. BEATTIE. I'm trying to distinguish between whether we do a cost-benefit on a listing and whether we do a cost-benefit to find the cheapest way to recovery species, which we do.

Senator THOMAS. I understand, but the fact is though we all have to make judgments as to how you spend a finite amount of money.

Ms. BEATTIE. That's right.

Senator THOMAS. That's kind of what it's all about. Thank you.

Senator KEMPTHORNE. All right, let me ask a few more questions.

Ms. Beattie, you're familiar with the Bruneau Hot Springs snail. There was a situation where the courts have gone back and forth as to whether or not that should be an endangered species. One court saying no, the science is not there nor the administrative process to justify that it's an endangered species, another court later overturning that. Meanwhile, you have a community that cannot afford to continually fight this in the courts, and, yet, the courts are disagreeing. Meanwhile, the very people that are there are notified by the Farmer's Home Administration and by the

banks that as long as this cloud is hanging over you, we can't make loans to you.

So my question to you—and if Mr. Schmitten has a response—but do the Fish and Wildlife Service and the National Marine Fisheries Service have a hard time complying with listing decisions that are imposed by the petition process and by the courts, and do you find that these listing decisions force priorities different from what you or Congress think is necessary?

Ms. BEATTIE. May I start with the Bruneau Hot Springs snail, Mr. Chairman?

Senator KEMPTHORNE. Yes.

Ms. BEATTIE. The issue in the suit that was brought was not over the science of the listing nor the listing itself on a science basis, but was brought over whether or not the Fish and Wildlife Service in missing a deadline had thereby abdicated its ability to list the species. It was over a piece of process, and it was over whether we had made a 60-day or a 90-day deadline on time and whether that was dispositive in the listing.

There was a lower court decision that missing a deadline meant the species could not be listed. There was a higher court reversal on appeal that those deadlines were simply a way to make the process move fast, even though we try to respect them as closely as we can. They were simply, the judge said, a way to make the process move faster not a reason to list or not list. So the Bruneau Hot Springs snail will go back on the list.

The second question, yes, court cases do drive the system very often. There were some particularly significant cases in the last Administration in which the judge ruled that the avoidance of listing by the government was without foundation and required us to list a certain number of backlogged species every year. That ruling has resulted in a proliferation of policies on our part on listing and moving along on deadlines and getting things moving.

So, yes, the courts have driven the system at times, and we think it has a positive effect in terms of us getting our act together, but I do in the long-run believe that our research is so few and the demand is so high that the criterion of endangerment is a pretty good one in terms of us setting priorities and keeping moving.

Senator KEMPTHORNE. Mr. Schmitten, let me ask you a different question. I have a letter here from the head of the Recovery Team of the Snake River salmon to the National Marine Fisheries Service that objects to the failure by NMFS to utilize many of the team's recommendations. My question is why is this type of letter necessary and the other letter that I referenced earlier with Director Beattie? Is this a frequent problem? We had panelists in one of our previous hearings of members of recovery teams that feel that their recommendations are not being included or not being made part of the process, and with follow-up letters I see that there is a strong sense of this.

Please respond to that.

Mr. SCHMITTEN. Yes, thank you, Mr. Chairman. I'm very proud of that team. I personally appointed them. I know every one individually—in fact, many I've known for 20 years, and like any other scientific endeavor there will always be differences. I would like to point out in that letter, because I had a chance to see it in its draft

form, its mid-term form and it's final form, which is characteristic of the team of working closely together with DMF's that they also indicate early in the letter—in fact, in the first two paragraphs—that a majority of the recovery team's plan has been accepted by the agency, and they put that a percentage of 80 or 90 percent. We certainly focused, and they wanted to call attention, to where we differed and that's healthy in this process, and there are a couple of things I would say in terms of why we differed.

Subsequent to the time that their draft plan was given to us, there have been additional science, and that was a 1½-year period of time. There were thousands, literally thousands, of pages of comments from the public when we submitted their draft plan for comment. We had a peer review of the draft plan, which also provided guidance to us. Judge Marsh, as you've indicated, the courts often come in not necessarily giving priorities, but certainly giving clarifications, overturning the hydropower biological decision. The judge certainly gave some clear direction of where changes should occur in the recovery plan.

But I'm proud again of that team. It's the backbone—their proposal is the backbone of our final draft proposal, and our differences continue to be looked at and hopefully will be minor.

Senator KEMPTHORNE. Well, Mr. Schmitten, I appreciate that response, but I'm going to ask that we make Dr. Bevins' letter a part of the record because I suppose we can both grab our excerpts, but it's highly critical in different aspects, and I just—again, I think it's interesting that the very recovery team that, as you say, you personally chose, would send a letter such as that.

Then just, finally, Ms. Beattie, if you would just clarify. You stated to Senator Thomas I believe that after the listing is complete, that you wish to hand it over to the States. Is that correct?

Ms. BEATTIE. I'm sorry, when the delisting is complete. All wildlife except for a very narrow Federal mandate are managed by the States. Part of the narrow Federal mandate is endangered species. Once they are no longer endangered, they go back to the management of the States. We negotiate a monitoring and management plan with the States before they're handed over, and that's where we are with the grizzly bear at the moment.

Senator KEMPTHORNE. Do you agree with Secretary Babbitt that there is need for further clarification——

Ms. BEATTIE. Yes.

[Laughter.]

Ms. BEATTIE. I'm sorry, forgive me, Senator—further clarification of——

Senator KEMPTHORNE. No, that's the right response. You will not become an endangered species with that response.

[Laughter.]

Senator KEMPTHORNE. He says clarification that there should be greater authority and clarification of that authority for States and regions included in the statute.

Ms. BEATTIE. Oh, yes, we have a long list of proposals for tightening our partnership with the State, giving the States more power, more participation in every aspect of the Endangered Species Act, which we would be happy to tell you about any time. We do, I must say, also despite the publicized conflicts have a number

of quite amazing success stories, which are often not publicized with States and with private landowners that are really important.

Senator KEMPTHORNE. Mr. Schmitten, do you agree with Secretary Babbitt?

Mr. SCHMITTEN. Yes, sir.

Senator KEMPTHORNE. Fine.

[Laughter.]

Mr. SCHMITTEN. By the way, let me just say that I think it is a major weakness of the Act that we don't collaborate as well with the States. Frankly, in my years of dealing with the States, they have the information most often in the northwest and the same with the tribes. The other weakness is that the Act simply is not proactive. We should be focusing on preventing listings, not spending millions and millions of dollars trying to catch up with a species that has been listed, and I hope that the shift can occur in preventing listings.

Senator KEMPTHORNE. I appreciate that.

Senator Reid, any further questions?

Senator REID. I do have a question or two. I've been reading the testimony of Dr. Robert Taylor, director of Wildlife Ecology, California Forestry Association. Here is what he says, among other things:

"I was instructed to conduct a research program on the northern spotted owl in California." Taken together these studies that he conducted indicated that the owl population was large and stable and it flourished in commercial second growth forests. "Therefore, I recommended submitting a petition for delisting. The Fish and Wildlife Service completed its 90-day review nearly a year later and rejected the petition without looking at any of the data on the theory that the owl population in California was not a delistable unit." He goes on to say that all the information that he gathered and submitted was rejected, and in his own words, "We were met with a wall of passive indifference."

How would you respond to that?

Ms. BEATTIE. To the last allegation, Senator, I would say that I know for a fact that we worked very hard and labored very long over that, and I'm sorry that Mr. Taylor saw that as passive indifference. The California range of the spotted owl is the southern most—obviously, the tip of the northern spotted owl range. It is not disjunctive except—because of a political boundary—from the rest of the spotted owl range. So the entire northern spotted owl was listed as threatened as an entire population. Our policies have good, I think, biological reasons to not allow us to delist one segment of a range.

I think what's really important to emphasize is that when a species is listed, it's for many reasons besides the sheer numbers in the population. It is for the trends in the habitat and the trend in the spotted owl habitat throughout its range were precipitously downward. It has to do with other conservation measures in place. It has to do with—there is a list of criteria so it is not just the trends in numbers, but we could see—if you look at any trend in the habitat, and I think Mr. Taylor even would not disagree—it is precipitously downward. So we realized and biologists realized they

don't have to wait to see the numbers go down further of the actual owls if the habitat is falling like that.

In California we have deferred to the California Timber Practices Act as a conservation measure for the spotted owl. So there is no practical effect of the listing in California because the California State law is perfectly adequate to protect the spotted owl, and we are also even proposing to in a 10-point plan that I believe the Secretary spoke to even go further in many ways to defer to State law on these considerations.

So for biological reasons and for practical reasons—for biological reasons the delisting of the southern tip of the range was not possible, and for practical reasons it wasn't necessary.

Senator REID. Excuse me, I'm sorry. I have one last question, Mr. Chairman. I have a meeting at 10:30 with one of the secretaries, and, therefore, I would like to ask a question. I'm impressed that we have people from outside the United States coming today to these hearings, and I apologize to them for not being able to stay and listen to their testimony because I'm interested in this. But while we have the administration witnesses here, there is going to be some testimony today indicating that the Environmental Protection Act that we have—the Endangered Species Act, I'm sorry, that we have—impacts upon economies of other nations unfairly. I see testimony and I would like to hear from you briefly on that, and we have testimony from Dr. Grandy who is with the Humane Society who give us the other bit of information. In the last reportable year Dr. Grandy indicates that we had 46,000—almost 47,000 animals who were brought back to the United States representing 250 species killed by American trophy hunters, which is an increase in just 3 years of almost 100 percent.

In 1993, 1,322 animals representing 40 endangered or threatened species under the Endangered Species Act were killed by American trophy hunters and imported to the United States, also an increase of almost—well, about 84 percent in just 3 years.

Endangered and threatened animals that were imported as trophies in 1993 included 416 African elephants, 346 leopards, and on and on with these animals.

What is your comment in regards to these people who will testify about the impact on the Endangered Species Act on the economies of their country?

Ms. BEATTIE. Senator, my first response is that the Convention on International Trade and Endangered Species, so-called CITES, is, as its title implies, a cooperative effort by 128 nations of the world to restrict the trade of endangered species. It is not directly about the conservation means within countries. It is on its face about trade.

So I would say that any signatory—and, again, becoming a party is a voluntary step by a nation—but any signatory is signing up to have its trade restricted of its endangered or threatened species. So I would not disagree that the United States or anybody else has an impact on their economy from their participation in the Convention of International Trade and Endangered Species.

By saying that we do so unfairly or that the convention does so unfairly, I would only have to guess what that means. It may mean that in many cases the United States—and I assume other coun-

tries—do not take at face value the certification of another country, that the harvest of the species is on a sustainable basis. If we have evidence or reason to believe that that harvest is not on a sustainable basis, it is our obligation, we believe, under the treaty and an obligation to our citizens to do some investigation of that and not simply take the export permit on its face. We try only to do that where there is evidence that there is not a conservation scheme in place for that species, and we try to walk that middle way of not being overly intrusive, but, on the other hand, not ignoring evidence.

So I can only speculate what the unfairness allegation means and respond to that.

Senator KEMPTHORNE. Ms. Beattie and Mr. Schmitten, thank you very much again for your good input and help in this whole endeavor as we reform the Endangered Species Act. Many things I think were brought out here in this session, and too I want to underscore the point that as both of you pointed out, we do need to fully define greater authority and responsibility to the States in this partnership, and that will be one of the key components that reauthorization will include.

Any final comment?

Ms. BEATTIE. We look forward to working with you on this, Senator.

Senator KEMPTHORNE. I appreciate that.

All right, we will take a 2-minute recess while we ask the next panel to come forward.

[Recess.]

Senator KEMPTHORNE. Ladies and gentlemen, we will continue now with this hearing. I look forward very much to the information that the second panel will be offering us as well.

Our first witness—and, again, I might say to all of our panelists on the second and third panel, we will make your formal remarks part of the record. So if you could just summarize and make the key points, and we will be running the clock with regard to your opening statements, so as you see the yellow light coming on, you could begin to conclude your remarks. But, again, we'll be very courteous because we know many of you have come from long distances.

With that, our first panelist will be Dr. Allan Egbert, who is the executive director of the Florida Game and Freshwater Fish Commission, Tallahassee, FL, who is accompanied by Gary Taylor, International Association of Fish and Wildlife Agencies.

Dr. EGBERT.

STATEMENT OF ALLAN EGBERT, EXECUTIVE DIRECTOR, FLORIDA GAME AND FRESHWATER FISH COMMISSION, TALLAHASSEE, FL; ACCOMPANIED BY GARY TAYLOR, INTERNATIONAL ASSOCIATION OF FISH AND WILDLIFE AGENCIES

Mr. EGBERT. Thank you, Mr. Chairman, for this chance to share our experiences in Florida and the prospective of the 50 State fish and wildlife agencies on the Endangered Species Act. We believe that the Act is a vital conservation tool for species threatened with extinction. However, reasonable changes will make it more effective in meeting its conservation objectives, more user-friendly, we be-

lieve, to private landowners and generally more capable of ensuring the conservation of the natural communities on which both fish and wildlife and people depend.

The 50 States have management responsibility, as Director Beattie indicated, for threatened and endangered species before they're listed. We share responsibility once they make the list, and then we reassume full responsibility once they are recovered. We, of necessity, must work with private property owners in local jurisdictions throughout this process. We believe our insights can help improve the Act for both fish and wildlife and for the citizens of the Nation.

Our recommendations for changes to the Act would, in the first place, reaffirm the role of the States with focus on preventative management, would provide certainty and incentives to private landowners, would reemphasize recovery actions to restore species, and would improve the effectiveness of the Act through administration improvements. These recommendations are underlined by three precepts:

First, provision of legislative certainty to the jurisdictional roles of the Federal and State agencies as co-administrators of the Act.

Second, a coordinated Federal–State rulemaking to define standards for certain decisions, such as when is recovery complete.

And, third, the creation of rebuttable presumptions for the validity of State information.

We at the Association reaffirm our commitment to preemptive fish and wildlife conservation so that the need to impose the rigors of the Act is minimized. The Act will play a role in our preventative management programs but should remain primarily as a tool of last resort to protect species against extinction. We especially encourage binding conservation agreements for candidate species in lieu of listing. Clarification to support such conservation agreement is needed, and, again affirmation of State authority for pre-listed species must be legislatively assured. Private landowners need legal assurances that once they commit to an agreement, no additional liabilities under section 9 of the Act would be imposed upon them. Once a species then is listed, factors which will result in the recovery of the species and its ultimate delisting must be addressed. The States, again, should play a major role in recovery planning, implementation with the assistance of local governments, private organizations and non-governmental organizations.

A case in point I would mention, Mr. Chairman, is development of the Florida panther habitat preservation plan, a document that was to be jointly developed by the service and my agency to identify ways to preserve Florida panther habitat in southwest Florida throughout and with an emphasis on retention of those important lands and private ownership.

The service assumed leadership in the development of that document, but, unfortunately, by the second draft, which was published in the *Federal Register* and thereby formalized, the preservation plan had evolved into an acquisition plan apparently in part because of commitments made by the service in an out-of-court settlement action relating to panther captive breeding. After four subsequent rewrites of the plan, it was revised to its original purpose

and to our satisfaction, and then we had a plan to pursue less than fee-simple acquisition for habitat conservation to benefit panthers.

However, to this day the landowner citizens in southwest Florida are convinced that the panther habitat preservation plan is nothing but a government land grab. In their eyes, my agency was no less responsible for the service despite our protests to the contrary. The State and fish and wildlife agencies can, we feel very strongly, if asked, assist a willing Federal partner avoid some pitfalls, frequently for our mutual benefit.

In the interest of time, Mr. Chairman—I see the yellow light already—we direct your attention to page 5 of our written comments which lays out our views of what recovery plans should include in our way of thinking. We particularly think item (i), economic incentives, is an extremely important one. The recurrent theme we hear in Florida is that government has made wildlife stewardship a liability for landowners, especially when the stewardship results in listed species being present. They ask why they should bear the financial burden individually when society as a whole and at large benefits from listed species conservation and recovery.

We look forward to the hearings next week and hope that those proceedings will help identify some practical, reasonable means of compensation of some sort. In the little time that I have left I would tell you of some our listed species recovery success stories in my State, lest you think that we see only wrong and little right with the Act.

As has been stated, bald eagles have increased in our State from only 400 nesting pairs 10 years ago to more than double that today. Recovery accomplishments have taken place in a growing Florida due in part to the application of some jointly administered bald eagle protection guidelines, which balances the protection of nesting sites with private land use. Due in part to that dramatic recovery, bald eagles have been proposed for downlisting from endangered to threatened in the lower 48.

Brown pelicans have increased from 6,000 pairs in the early 1980's to more than 14,000 pairs today. American alligators have recovered from endangered status in the late 1960's and early 1970's to a point where we now have a limited sustained harvest.

Despite controversy, we remain hopeful that the Florida panther can survive in a State of some 14 million people. To accomplish that is going to require insight, sensitivity and flexibility, a flexibility that would be hastened, we think, by these recommendations. Our panther recovery program has diverted attention from another exciting joint project, our cooperation with the service to establish a non-migratory flock of whooping cranes in the Kissimmee Valley—so far, so good.

The International Association would reemphasize that it is vitally important to secure funding support for the States for fish and wildlife conservation before the Act need be imposed to prevent extinction. Preventive management makes good economic and biological sense, we believe. The Association's wildlife diversity initiative, which would build on the very successful Pittman–Robertson and Wallop–Breaux user-pay, user-benefit programs would provide such funding from outdoor recreation user fees. The funds could be allocated to the States for conservation of fish and wildlife pro-

grams, and we think with this approach we could employ voluntary non-regulatory incentives with flexibility and creativity for private landowners in other jurisdictional entities.

We would love to have the chance to talk to you about that some time.

Thank you, Mr. Chairman, I'm sorry I ran over.

Senator KEMPTHORNE. You did fine, Dr. Egbert, and, Dr. Taylor, too I welcome you and appreciate the fact that you're here and we can direct questions to you as well.

Dr. Egbert, I just want to make this point to you and to all of the panelists. We won't be able to discuss everything we would like to and so I would invite you that if an issue is raised or a question has been mentioned that you feel there is additional information, please forward that to me because it is all extremely helpful as we work through this issue.

With that, let me now call on Dr. Mike Scott, Research Biologist, the National Biological Service, Moscow, ID.

Mike, nice to see you again.

STATEMENT OF MICHAEL SCOTT, RESEARCH BIOLOGIST, NATIONAL BIOLOGICAL SERVICE, MOSCOW, ID

Mr. SCOTT. Good to see you again, Senator. Senator Kempthorne, Senator Chafee, and members of the committee, thank you for the opportunity to speak to you today.

I have 21 years of research experience with endangered species, 19 as an employee with the Fish and Wildlife Service and the last 2 with the National Biological Service, and it's in that capacity that I speak to you today.

I would like to talk to you today about research that my colleagues and I, at the University of Idaho, have been involved with that attempted to separate myths from reality regarding the Endangered Species Act. We hear a lot of pros and cons regarding the Act, and we sought to determine what's true and what's not true. To do so, we reviewed all available recovery plans as of August 1991.

In reviewing those plans—274 originals and 42 revisions in your opening statement—we found that 81 percent of the original recovery plans identified the need for additional information as a critical part of the recovery process, and given the rarity of the species that's really not surprising. While some ecological concepts received wide mention, substantial detail was often lacking—details such as species population size, the number of populations. Less than 10 percent of the plans had that type of information. This lack of information I think only serves to emphasize the need for high quality objective data as part of the recovery process.

Regarding the criticism that the Act overprotected sub-species, we found that to be completely unwarranted when we compared the numbers of sub-species covered in recovery plans versus the number of sub-species occurring in the wild. For the recovery plans that stated recovery goals in terms of numbers of individuals, 28 percent set recovery goals at or below the number of individuals that existed at the time that the recovery plan was written. That seems counter-intuitive to me and to my co-authors, and we suspected the reasons that those recovery goals were lower than the

population size at the time of listing is that the recovery goals were being tempered by social, political, and economic considerations.

As a result, we suggested it's important to focus solely on biology when assessing the risk of extinction and setting recovery goals. Keep that to the biology alone. When we set about the task of determining the potential solutions to achieving those recovery goals, the social economic concerns can and should be incorporated. In this way, we may be able to reduce conflict and encourage consensus.

But the bottom line is that we really need more of a proactive approach to balance the Endangered Species Act. We need to protect habitat and species while they're still common so that we can avoid listings, so that we don't have to slowly watch a habitat degrade and the species associated with it become endangered and have to deal with it in the often contentious setting of the Endangered Species Act.

One way to do that is GAP analysis, which is, as you know, a program that I've been involved in Idaho for some time now, which is a means of providing geographic information on occurrence of wildlife and their habitat. It presents a scientific method for identifying the degree to which native wildlife species in natural communities are or are not represented in the present day mix of special management lands.

The information from GAP has been used widely in the west, most specifically in Idaho, California, and Utah, and it's been used for such widely diverse purposes as assessing suitability of potential sites for a lumber mill and land use planning for open spaces.

In summary, our research suggested that the Endangered Species Act is not overzealous in its attempt to protect and conserve the nation's invaluable biological resources. In some cases, it has underprotected them. We need to complement the Act with more proactive efforts to maintain viable populations of species in their habitats while they're still common, thus reducing the number of species that become endangered or threatened and combining greater chances of success with economic efficiency.

All of our land planning and wildlife conservation efforts require more high quality information than is currently available, but the bottom line is we need more proactive efforts to save the species, in addition to collaborative efforts to save the species listed under the Endangered Species Act. We really need to think more in terms of private, State, and Federal partnerships. We need to think more about working together rather than working apart.

Senator KEMPTHORNE. All right, Dr. Scott, thank you very much.

Now Dr. Robert Taylor, who is the director of Wildlife Ecology, California Forestry Association from Sacramento, CA.

Dr. TAYLOR.

STATEMENT OF ROBERT TAYLOR, DIRECTOR OF WILDLIFE ECOLOGY, CALIFORNIA FORESTRY ASSOCIATION, SACRAMENTO, CA

Mr. TAYLOR. The need for intensive planning after a listing decision is acute and is not done often enough or well enough under the existing law. I doubt that you will get testimony that disagrees with that assertion. The only disagreement will be in the form that

planning should take. I think four components should be incorporated in post listing planning:

The first is that planning should be done in a sequence of stages, first on the geographic scale of the entire species, then at the level or levels of the States and other regulatory bodies, and finally at the level of the landowner. Typically, it is now done only at the level of the landowner, at the landowner's cost, without guidelines and effective planning tools.

Second, both time and funding should be provided for necessary post-listing research. It is frequently much easier to establish that a species is in trouble than it is to figure out why it is in trouble or what can be done about it.

Third, recovery planning should be done in an open, public process employing a formal Federal advisory committee. This may be slower and more expensive than having the agencies work alone, but it dramatically improves the potential for conflict resolution and makes it much more likely that economic and social costs will be evaluated honestly.

Finally, post-listing plans should include operational guidelines for downlisting and delisting, including descriptions of delistable units and standards for population size and geographic distribution.

Without adequate post-listing planning, the wheel of listing will remain a ratchet that can turn in only one direction, unless, of course, a Secretary of the Interior wants to influence a reauthorization debate. Allow me to explain why I say this:

In 1992 I was instructed to conduct a research program on the northern spotted owl in California to assess whether a petition to remove the owl from the list of threatened species could be justified. At that time the industry had been gathering field data intensively for 3 years. Over the next year and a half my research staff combed the State for those data, which I put into a computer data base and gave to the State for validation. I conducted a study of the forests surrounding a random sample of nest trees to provide the first reliable description of owl habitat on private land. I commissioned a study at the University of Washington to evaluate theoretical methods of trend analysis, and I hired a couple of post-doctoral scientists to help me forge a computer simulation model of the owl population for a more accurate trend analysis.

As Senator Reid noted, these studies indicated that the owl population was large and stable, and it flourished in commercial second growth forests. I recommended submitting a petition for delisting. I was confident that the quality of the science was good and was prepared to have it reviewed by other scientists.

The Fish and Wildlife Service rejected the petition on the grounds that the owl population in California was not a delistable unit. I realized before beginning this project that defining a delistable unit was an issue. I questioned the service in 1992 about whether the owl could be delisted in California alone. At that time the newly released draft recovery plan recommended delisting the owl on a province by province basis and used the California–Oregon border to define three provinces. On the local level the service had no answers, noting that this was a policy question to be answered in Washington. Washington said that it was working on the

question but had no ready answer, and so I turned to legal advice, read testimony in court cases and examined past delisting and downlisting cases for a guide to how the service might respond to a petition.

This information led me to believe that political boundaries could be used in defining delistable units, particularly when, as in our case, they implied dramatically different regulatory environments. In rejecting our petition, the service disavowed its own draft recovery plan claiming that delisting could only be done for a distinct population segment. California's owl population apparently does not qualify as one.

Unfortunately, the service is not prepared even yet to tell me what portion of the owl range does qualify as a distinct population segment.

In conclusion, in California, my industry, the forest products industry, has tried to play the endangered species game by the rules. We did not sue anybody when the owl was listed, we did not hire a PR firm and lobby Congress to take it off the list, we only collected data to document what we considered to be an absurd listing decision and submitted those data through proper channels. We were met with a wall—I say passive indifference but after Mollie Beattie's testimony, I should say active hostility. Even though many of the service's field personnel agree that our data are correct, our enormous investment of time and resources has accomplished nothing other than perhaps for the service to make an ad hoc modification of its rules. If the cooperation of the business community is desired in the implementation of the Endangered Species Act, perhaps it's time to consider changing some of the rules. Thank you.

Senator KEMPTHORNE. Dr. Taylor, thank you very much.

Now Mr. David Langhorst, who is a member of the Board of Directors of the Idaho Wildlife Federation and Affiliate Representative, of the National Wildlife Federation from Ketchum, ID.

David, welcome.

STATEMENT OF DAVID LANGHORST, MEMBER, BOARD OF DIRECTORS, IDAHO WILDLIFE FEDERATION AND AFFILIATE REPRESENTATIVE, NATIONAL WILDLIFE FEDERATION, KETCHUM, ID

Mr. LANGHORST. Thanks a lot, Senator Kempthorne. I want to begin by just thanking you for having field hearings in Idaho, and, Senator Chafee, thank you very much. We were all impressed by your attendance there.

My name is David Langhorst, and I'm here to testify on behalf of the National Wildlife Federation, the Nation's largest conservation education organization. I serve as executive board member of the Idaho Wildlife Federation, a National Wildlife Federation Affiliate, and I also serve as executive director of the Wolf Education and Research Center in Ketchum, ID, where we educate people about wolves and other endangered species and develop ideas on how diverse groups of people can live and work together with all the other parts of an ecosystem.

The ESA is one of our country's most important environmental laws. It protects the biological resources on which all of us depend

for our medicines, our food supply, new and exciting products such as natural pesticides and millions of jobs and industries such as commercial fishing, agriculture, tourism, and outdoor recreation. It also helps to protect ecosystems, the life support systems that we depend on for basic survival.

A listing under the ESA provides a signal that enables us to take action before irreversible damage is done to our natural systems. The National Wildlife Federation is currently performing an extensive review of the ESA implementation and will soon be offering a series of new policy proposals. We do support reasonable change and improvements in the Act.

In the meantime, we're pleased to be able to offer today some of our ideas relating to the ESA recovery process:

The ESA has produced a remarkable string of successes. In its 22-year history it has stabilized or improved the conditions of hundreds of plant and animal species that had been in serious decline. In my own work in Idaho I have seen diverse groups of people work with the ESA to help bring about the recovery of the gray wolf in the northern Rocky's ecosystem. By educating communities about the importance of predators to the health of the ecosystem and using the ESA's flexible provisions, we are successfully restoring this wonderful animal to the wild in a manner which is sensitive to local economic interests.

Unfortunately, as we make substantial progress on wolf recovery, the recovery of numerous other listed species is being neglected. The Fish and Wildlife Service has developed recovery plans for a little more than half of the species within its jurisdiction. It is even further behind on the actual implementation of recovery plans. Clearly, we need a new recovery process, one which all biological, economic and political road blocks to planning and implementation are confronted.

The first step that Congress could take to improve the recovery process would be to increase funding. The importance of funding cannot be over-emphasized. If we refuse to invest in recovery now, we will be forced to spend much more later cleaning up the train wrecks that could have been avoided.

Recovery money could be spent more wisely. Planning effort superior often bogged down because biological and political issues become unnecessarily confused and neither of these issues is confronted head on. For example, in developing the wolf recovery plan in the northern Rockies Federal biologists spend years building scientific justifications for reintroduction where the real obstacles were political, not scientific.

This situation can be remedied substantially by creating two separate phases of recovery planning:

In the science phase, the Fish and Wildlife Service or the National Marine Fisheries Service would produce a report subject to public review and comment that sets objective bench marks for recovery and delisting, including population levels and habitat requirements.

As the recent National Academy of Sciences report makes clear, and I think someone mentioned earlier, a recovery plan must specifically confront the habitat issue if the species is to have any long-term viability. I think everybody agrees on that.

In the second phase, the implementation planning phase, a recovery team with the broadest possible representation would identify actions that would help achieve the goals outlined in the science part. Participation should be required not only by the Fish and Wildlife Service or the National Marine Fisheries Service, but also by the various Federal agencies with activities that affect species. To avoid train wrecks, Congress should direct these Federal action agencies to prepare implementation plans that identify specifically the steps that they will take to help promote recovery.

Arguably, this is already required by section 7 of the Act, but it has been neglected and clarification is needed. Congress should also strongly encourage States, tribes, local governments and especially citizens from the communities where the species reside to develop their own recovery implementation plans subject to Federal review. This broad participation in recovery planning will ensure that political road blocks to recovery are addressed as soon as possible. Once these various implementation plans are approved, States, tribes, and local communities will be in a position to assert leadership in carrying out recovery plans.

In my experience, the best method of promoting recovery is to provide opportunities for all stakeholders to come together and to devise solutions tailored to local conditions. By encouraging stakeholders to plan recovery actions, we benefit from the vast amount of information and experience that the States, tribes, and communities have to offer, and the prospects for successful implementation would improve enormously because key people who might otherwise frustrate recovery efforts will buy in.

Although incentives for private landowners will be the subject of a subsequent subcommittee hearing, I would like to emphasize now that there is a vital link between incentives and recovery. To ensure that incentives provisions work effectively to promote conservation of listed species, Congress should target incentives toward those activities that are expressly called for in approved recovery plans.

Thank you very much for this opportunity to testify today, and, Senator Kempthorne, I would like to invite you, if you have time—I know you've got other hearings—but we would like to invite you to a town meeting in Boise during the August recess to discuss ESA.

Senator KEMPTHORNE. David, thank you.

We might note that Ketchum, ID, is one mile from Sun Valley. Anyway, that's a good spot.

Mr. LANGHORST. Is that good or bad?

Senator KEMPTHORNE. That's good.

Mr. LANGHORST. All right.

Senator KEMPTHORNE. All right, let me tell you what's taking place. You hear all these bells that are going off. A vote is currently in progress over on the floor of the Senate so Senator Chafee has gone over there. I will go over in time to vote so I'm going to continue the hearing, and Senator Chafee, if he gets back, we'll do kind of a tag team where I will then quickly run over and vote. We'll keep the hearing going. If he's not back in time, we'll just take a brief recess, but, anyway, we're all doing fine with time.

Let me now introduce Mr. John Lambeth, the project manager for the Fairy Shrimp Study Group from Sacramento, CA.

STATEMENT OF JOHN LAMBETH, PROJECT MANAGER, FAIRY SHRIMP STUDY GROUP, SACRAMENTO, CA

Mr. LAMBETH. Good morning, Mr. Chairman. My name is John Lambeth, project manager for the Fairy Shrimp Study Group. Our group is an organization of California businesses and statewide associations, including the California Chamber of Commerce, the California Cattlemen's Association, Western Growers Association and several private landowners.

Our group formed at the end of last year in response to the services listing of four species of fairy and tadpole shrimp as endangered or threatened. These listings have had enormous social and economic impacts on California. Our group suspected, as did many members of the scientific community, that at least two of the four species of shrimp were not endangered. Our principal task was to gather more information and if our suspicions were correct, to initiate delisting proceedings.

Fairy shrimp are very small freshwater crustaceans with life spans of several weeks, and I have brought an example of fairy shrimp with me this morning so that the committee could see what we're talking about here. They live in vernal pools in other isolated water bodies. Each pool can contain up to 800,000 eggs. While fairy shrimp occur all over the world, the listed species are found in a 400-mile range down the central valley of California.

Our research has uncovered significant problems with the listing:

First, there was no independent objective peer review of the two major studies that served as the basis for the listing. These two studies are the Holland dissertation and the PG&E pipeline study. The Holland study concluded that there had been a 90 percent loss in vernal pools. Surveys and reviews of soil data since the listing now indicate the historic loss is approximately 50 percent with most of that loss occurring many, many years ago when the valley was first converted to agricultural uses. The PG&E pipeline study alleged to survey a 200-mile long transact of fairy shrimp habitat. We have discovered that less than 30 miles of the 200-mile pipeline intersected with the habitat. If there had been peer review of the studies, these fatal flaws would have been discovered prior to the listing decision.

The problems with the data was compounded by the second major procedural error—there were no public or scientific review of internal decisionmaking by the service. The most obvious example of this problem can be seen in the accompanying population maps, and these are in the booklets that we provided to the committee. Although the population designations were key to the listing decision, there are no studies in the record that support the services population delineations. We have repeatedly asked for such information and have been told it does not exist. There are several other significant errors associated with the listing that we do not have the time to detail today.

I will now focus on specific reforms to the listing and delisting process:

First, the listing process should include objective scientific criteria for determining endangered or threatened status. These criteria must include percentage of historical range currently occupied by the species and must specify the number of populations or individuals below which a species would meet the definition of each threatened or endangered. These criteria must be evaluated by an independent science panel.

Second, the listing process should provide for increased public participation and review. We suggest allowing independent scientists and the public to review and comment on the data and conclusions supporting the listing prior to the listing decision.

Third, management and regulatory efforts on behalf of a species should be adopted only after thorough consideration of social and economic impacts, relative risks, costs, and alternative strategies.

Next, the delisting process. The Act currently provides for a 2½-year delisting process. We believe there should be an expedited process for delisting when a delisting is petitioned on a basis other than a recovery plan. If a listing delisting was made in error or new information suggests a different result, the law should not provide for such an extended time line—2 to 3 years—to correct the problem. We recommend a maximum total timeframe of 7 months.

The second major change to the delisting process would be to clarify the criteria for delisting. Although the Act in the regulations establish the same standards for listing and delisting, the service has developed a different approach. In the services internal documents, the service indicates that a species will be listed if persuasive evidence indicates that it is warranted. Yet, the same document indicates that a delisting can occur with new data only if conclusive evidence indicates that a species should be delisted.

This difference does not appear to have any support in the law. It is clear, however, that two different standards are being applied.

Senator KEMPTHORNE. Mr. Lambeth, I'm sorry. I'll tell you what. Rather than make us all rush, let's just take a brief recess. Let me go vote and then we'll pick it up from there, OK?

Mr. LAMBETH. OK.

Senator KEMPTHORNE. Thank you.

[Recess.]

Senator CHAFEE [assuming the chair]. Please take your places everybody.

Now we'll go with Dr. Wiese. Did you finish, Mr. Lambeth?

Mr. LAMBETH. I'm sorry, Senator. I didn't have a chance. I think if I had another 2 minutes or so, I could finish the testimony, if I could.

Senator CHAFEE. Sure, OK. Let me get your testimony out here please.

All right, you go ahead. We'll give you 2 more minutes.

Mr. LAMBETH. Thank you, Senator.

We've basically told you who we are, the Fairy Shrimp Study Group, and the problems. I would like to focus specifically now on the delisting process and our suggested reforms to that process. That currently provides for a 2½-year delisting process. There should be an expedited process for delisting when a delisting is petitioned on a basis other than a recovery plan. If a listing decision was made in error or new information suggested different results,

the law should not provide for such an extended time line—2 to 3 years—to correct the problem. We recommend a maximum total timeframe of 7 months.

The second major change to the delisting process would be to clarify the criteria for delisting. Although the Act and the regulations establish the same procedures and standards for listing and delisting, the service has developed a different approach. In the services internal documents, the service indicates that a species will be listed if persuasive evidence indicates that it is warranted. Yet, the same document indicates that a delisting can occur with new data only if conclusive evidence indicates a species should be delisted. This difference does not appear to have any support in the law. It is clear, however, that two different standards are being applied.

We recommend adopting a uniform standard in the law that would apply to both listing and delisting. That standard must be a preponderance of the evidence. This change alone would bring equity into the listing and delisting processes and would provide a sound basis for decisionmaking.

We appreciate the opportunity to present our ideas before this committee today. We have submitted an addendum booklet for inclusion in the record. The Fairy Shrimp Study Group supports the protection of endangered species but does not support the current listing and delisting processes. We have an obligation to conserve our natural resources in a responsible manner and believe our suggested changes to the ESA would improve its implementation not only in the fairy shrimp example, but also as it relates to all other species.

Thank you, Mr. Chairman.

Senator CHAFEE. Well, thank you for that. Obviously, we will be looking into the listing and delisting process, and your testimony will be very helpful.

Dr. Wiese? How do you pronounce that?

Dr. WIESE. Wiese.

Senator CHAFEE. Wiese. All right, go to it, doctor.

[Laughter.]

STATEMENT OF ROBERT J. WIESE, ASSISTANT DIRECTOR OF CONSERVATION AND SCIENCE, AMERICAN ZOO AND AQUARIUM ASSOCIATION, BETHESDA, MD; ACCOMPANIED BY KRISTEN VEHRS, DEPUTY DIRECTOR OF THE AMERICAN ZOO AND AQUARIUM ASSOCIATION

Dr. WIESE. My name is Robert Wiese, and I am the assistant director of Conservation and Science for the American Zoo and Aquarium Association or AZA. Also with me is Kristen Vehrs, deputy director of the AZA.

The AZA is a professional organization representing 170 accredited zoos and aquariums in north America and 6,500 individual members. The AZA strongly supports the reauthorization of the Endangered Species Act. We believe the Act should strike a balance between the single species approach and a multispecies or ecosystem approach. States should have an enhanced role conserving endangered and threatened species, listing decisions should be based on sound and objective science, and incentives should be cre-

ated for private landowners to conserve listed species and their habitat.

Wildlife conservation is the AZA's highest priority. Our Species Survival Plan, or SSP, was created to address the conservation of endangered and threatened species. Each SSP manages a captive population as an insurance policy against extinction of the wild population. However, captive breeding is not a panacea for the endangered species problem. If captive breeding for reintroduction is required, it's only because we've already reached a crisis and species and habitat protection in the wild have proved insufficient.

Captive breeding programs should only be implemented as part of a more holistic effort to preserve species in their natural habitats, combining captive breeding with habitat protection, public education, training, scientific research and fund raising to support field conservation efforts.

In many recovery plans under the ESA captive breeding can and does play an integral role. The AZA and its members work with the Fish and Wildlife Service on a number of recovery plans including the red wolf, the black-footed ferret, and the California condor. Unfortunately, in all three cases, the Fish and Wildlife Service waited until it was almost too late to begin captive breeding programs and eventually all the animals had to be taken from the wild. Species and habitats should be protected early on when hundreds or even thousands of individuals remain.

The recovery plans highlight the partnerships that can occur between SSPs and recovery plans. The black-footed ferret SSP coordinator is an official of the Wyoming Game and Fish Department. The recovery plans for red wolves was developed cooperatively by the AZA and the Fish and Wildlife Service. Also, representatives from the SSPs are either members of the recovery team or serve as advisors to the recovery team.

There are also efforts to coordinate international programs among the global zoo and aquarium community. Worldwide cooperation requires movement of animals between regions for management and/or reintroduction. Therefore, the ESA and CITES permitting systems greatly impact the success of these international programs.

Under the Endangered Species Act, permits may be issued for the scientific purposes or to enhance the propagation or survival of the species. AZA members experience delays from time to time in obtaining import and export permits under both the ESA and CITES, and we support the efforts of the OMA and OSA to streamline the permitting processes.

Movement within the United States of non-native captive bred wildlife is handled by the Captive Bred Wildlife registration. The Fish and Wildlife Service proposed a rule to streamline this process in 1993. AZA believes that this proposal would streamline the registration system and maintain its integrity. We had some technical questions on implementation and didn't agree with all the species listed on the exempt list, but overall supported the concept of the proposal and urge the Fish and Wildlife Service to finalize it.

AZA believes there is value in listing non-native endangered species on the endangered list. Listing increases public awareness in the United States of the plight of these species and the general

need for conservation here at home. Also, our conservation efforts with foreign species can serve as models for saving native endangered species. The United States has been recognized as a world leader in ESA conservation. This might not be the case if our ESA were limited to only native species.

The Fish and Wildlife Service has proposed to delete education as an activity that enhances the propagation or survival of the species. AZA strongly believes that education through exhibition of living wildlife augments the survival of the species in the wild by increasing conservation awareness.

I thank you for this opportunity to testify before you today, and I would be happy to answer any questions.

Senator KEMPTHORNE [resuming Chair]. Dr. Wiese, thank you very much. You win the prize. You've come in under the time.

[Laughter.]

Senator KEMPTHORNE. All right, Senator Chafee, would you like to lead off with the questions?

Senator CHAFEE. Thank you, Mr. Chairman.

Dr. Wiese, in my State, AZA is participation in the—the Roger Williams Park Zoo is participating in the saving of the potentially extinct animals, and you're right. It is time-consuming and it is expensive, but it also is very, very satisfying and gets a lot of attention from our local population.

I would like to address this question to the panel as a group here, and that is—I can't say each of you in your testimony, but several of you have referred to incentives—I think Mr. Lambeth referred to it and I know that others have.

What kind of incentives do you think we ought to have for private landowners to join, and Dr. Wiese mentioned in Wyoming with regards to the black-footed ferret there is a rancher out there who has been very cooperative and helpful, but what should we do? Everybody who comes before this panel, this committee, in connection with this bill says instead of using the stick to achieve results on the Endangered Species Act, we should use more incentives. What do you suggest? Who has got an idea?

Dr. TAYLOR.

Mr. TAYLOR. Money.

Senator CHAFEE. OK, well, that's a crass thing but how? Let's suggest I'm in Idaho and I'm a landholder of several thousands of acres, and I've got an endangered species on my land. What would you do?

Mr. TAYLOR. Many of the—I would say most of the private land that is at issue here is being used for what are currently marginal economic activities—farming, ranching, timber production. These are not such highly profitable industries that a reduction of 15 or 20 percent in the total gross income from the land base can be tolerated, and that's why when people are at the edge of what they can do, a little bit of a regulation seems to them so threatening and I really do believe that sometimes even small cash incentives can turn the balance.

Senator CHAFEE. All right, Mr. Langhorst.

Mr. LANGHORST. One simple one would be to change State tax laws so that when children inherit land. They could keep it intact or a tax incentive for conservation easements that they might place

on the land. The Fish and Wildlife Service could have money earmarked to pay for conservation easements for habitat preservation. Other incentives to continue habitat preservation should also continue—conservation reserve programs, wetlands reserve programs—all of these are things that I think help endangered species. Outlined in our written testimony there is a system for citizen participation, and so this isn't a financial incentive but an incentive to participation in the process and to give more people ownership I think you get rid of a lot of the controversy.

Senator CHAFEE. Anybody else?

Mr. SCOTT. Yes, the bottom line is economic incentives and tax write-offs, payment for conservation easements, and those sort of things would be very important. I believe Defenders of Wildlife had a rather definite piece of work on this that I would recommend to you with some essays, particularly by Mark Schaffer, who is now with the Nature Conservancy, that discussed this in detail and his specific recommendations.

Senator CHAFEE. All right.

Mr. EGBERT. Mr. Chairman.

Senator CHAFEE. Yes.

Mr. EGBERT. Certainly, we think that the estate tax issue has potential. Our problem is we have no competence in that, and that's why——

Senator CHAFEE. You have no what?

Mr. EGBERT. We don't really have any competence in tax issues and so——

Senator CHAFEE. Any competence?

Mr. EGBERT [continuing]. Yes, and looking forward to the hearings next week, but certainty we think is an incentive for landowners. In Florida we have some programs going which basically deal with proactive approaches. The landowners tell us what they would like to see done with their property. We look and see how we can work that around and what can be done for endangered species and try to find common ground.

Senator CHAFEE. All right, now the next question is the States. We've had testimony here from Dr. Egbert from Florida and elsewhere, and you gave moving testimony about how your State was cooperating and on the panther the Federal Government came in and paid no attention, and we had other testimony with a lot of research having been done and nobody paying any attention.

Do you think from your experience—not just in your own State but from your association work—Dr. Egbert, do you think that the States are ready, willing and able to take on the responsibility for implementing recovery plans? Suppose the recovery plans worked out by the Federal Government in conjunction with the State's Fish and Wildlife Service. OK, would you turn it over to the States then?

Mr. EGBERT. Not in every case, no, sir, and certainly not without some changes to the Act. A lot of States would not be able to do it. A lot of States don't have the resources to do so, and that's why we proposed in our recommendations that it be an option, not a requirement, not a mandate.

Senator CHAFEE. OK, now you say—my time is up. One last question, you say something about the statute doesn't permit it. Well, we can change the statute.

Mr. EGBERT. The statute doesn't permit the States taking the lead?

Senator CHAFEE. Is that what you were saying?

Mr. EGBERT. No, I don't recall saying that.

Senator CHAFEE. I thought you said something about the law.

Mr. EGBERT. Well, the States would like the option to assume the lead in some cases.

Senator CHAFEE. OK, thank you, Mr. Chairman.

Senator KEMPTHORNE. Senator Chafee, thank you very much.

I would just mention that we have asked the Keystone Center to facilitate and to come forward with a list of incentives that we could consider because in the reform and reauthorization of the Endangered Species Act, another key element will be incentives, and also I would note that Senator Chafee serves on the Senate Finance Committee, and we will be seeking his help in trying to have jurisdiction over that type of taxing structure transferred to this committee.

[Laughter.]

Senator KEMPTHORNE. All right, Senator Warner was here with us.

All right, let me then ask some questions here and let me start the clock.

Dr. Egbert, you stated that the Fish and Wildlife administrators should be given the opportunity to take the lead on recovery plans. Have I stated that correctly?

Mr. EGBERT. You said the Fish and Wildlife administrators.

Senator KEMPTHORNE. I'm sorry, well, State fish and wildlife.

Mr. EGBERT. State fish and wildlife, yes.

Senator KEMPTHORNE. A key point, I appreciate that.

Mr. EGBERT. Yes, in some areas we understand that there is, in the first place, even reluctance to have State participation on recovery plan teams. That certainly should be addressed and in other cases where there is the will and the opportunity and the resources to do so, States would like to assume a much greater role in the recovery planning process.

Now, again, you can't do that in the absence of resources, and failure to receive some resources to do that, a lot of States—Florida included—would not be able to assume much of a role. I would say in the specific case of Florida we have a very active program and are very actively involved in a number of recovery teams—whooping cranes and the panther, just to name two.

Senator KEMPTHORNE. All right, now the administration has suggested some legislative proposals along these lines. Have you been able to review those?

Mr. EGBERT. Yes, we have.

Senator KEMPTHORNE. Would you support going beyond what the administration is recommending?

Mr. EGBERT. Well, I think perhaps in some cases we probably would, but certainly the things that the Secretary has outlined in terms of some of the things he's done already administratively, we would support that fully. In fact, I've been very much involved

through the association's work in working with the Secretary on those issues, and, yes, we do. There may be some issues in which we may hope to go further, and I think the pre-listing conservation agreement might be one that we would propose pursuing.

Senator KEMPTHORNE. All right, and just finally then with those provisions dealing with the States' roles, would the—do you feel that your fellow administrators would help in supporting the reform bill that would come forward?

Mr. EGBERT. I think they would. I don't think they would have any choice. I think the local people and the locally-elected officials are demanding it.

Senator KEMPTHORNE. Good.

Dr. Scott, you heard, Mike, in my opening remarks quoting from your work, and I want to make sure that I understand a few of the key points. Is it true that you pointed out that less than half of the recovery plans had any estimate of the species' population size?

Mr. SCOTT. True, yes.

Senator KEMPTHORNE. And that 60 percent of the species would remain in peril if the recovery goals were achieved?

Mr. SCOTT. If one uses the guidelines set up by Mace and Landy and now being adopted by the International Union for the Conservation of Nature, yes.

Senator KEMPTHORNE. OK, and that 37 percent of recovery plans had recovery goals set at or below existing numbers of populations?

Mr. SCOTT. Yes.

Senator KEMPTHORNE. OK, then from a layman's perspective—I'm speaking to a scientist—but do these then, are they justified to be called recovery plans?

Mr. SCOTT. That is what's on the title. But I think that what's happened there is people have confused what's possible in the short-term with the biological recovery goals. We laid out a two-step process to avoid that confusion. Arguably, what we have for many species today are not recovery goals that are defensible in terms of the long-term viability of the species.

Senator KEMPTHORNE. OK, and then you also—we discussed the GAP concept which identifies areas of high biodiversity then compares them with various levels of protection. Do you find that the areas protected and the areas with high biodiversity overlap a great deal?

Mr. SCOTT. What we have found—in Hawaii we found that not to be true at all, and that was where we started with the study. Most of the areas—a preponderance of the areas have been set aside as special management areas, and those are the areas that are frequently the least productive. So we have very good representation for the biodiversity found in alpine and sub-alpine habitats, for example. Western Wood Cedar in Idaho is another example of a lower elevation habitat type that pretty much occurs in special management areas, but those areas of high productive soil tend to be found outside special management areas.

Senator KEMPTHORNE. All right, thank you.

Dr. Taylor, as you know, one of our field hearings was in Oregon, and we heard a great deal of testimony that really went right along with the statements that you have made today. You made the point

that the Fish and Wildlife Service completed its 90-day review nearly a year later.

From your experience, is the Fish and Wildlife Service consistently late in meeting deadlines?

Mr. TAYLOR. Yes, I looked over a number of status reviews they conducted and 90-day reviews are routinely taking 6 to 9 months.

Senator KEMPTHORNE. OK, what about the National Marine Fisheries Service?

Mr. TAYLOR. I think they're much better but they have a much lower work load. I don't want to fault the Fish and Wildlife Service for negligence because I think they really are working as hard as they can. They simply have too big a load.

Senator KEMPTHORNE. OK, and what do you believe is stopping the agencies now from allocating the time and funding to accomplish the post-listing research that you referred to?

Mr. TAYLOR. Well, there are two barriers I think—one is adequate resources to do it thoughtfully, and the second is almost a visceral unwillingness to relinquish control over a situation once they've gained it. There is no reason in the world why they could not have helped us in California during the listing process. There is no reason now why they can't help us with the 4–D rule process because they know and they agree with us that the owl is not a problem in California, but they simply cannot bring themselves to relinquish control of the situation. So we're seeing no relief under any of the proposals.

Senator KEMPTHORNE. So no help forthcoming on the 4–D rule?

Mr. TAYLOR. That's right.

Senator KEMPTHORNE. And your thoughts about the 4–D rule?

Mr. TAYLOR. My thoughts about the 4–D rule is that in California it is almost completely a waste of time and effort. It is in no case but one a change from the status quo and in that one case—the habitat standards—it's worse.

Senator KEMPTHORNE. Could it be made to work?

Mr. TAYLOR. Certainly, it could be made to work. We've given them several proposals for how to do it. They came out initially saying that we're going to give relief to private landowners in areas where there are not real problems. I've seen no indication that they're prepared to do that.

Senator KEMPTHORNE. OK.

Senator CHAFEE.

Senator CHAFEE. Thank you, Mr. Chairman.

I found this list prepared by Mr. Langhorst to be very helpful. I think we—sometimes we forget how important in a financial way these species are to our society. Just in my State we have—on Block Island, which is a small island where not much goes on, there is in the Fall a large migration of tourists who go out there because it's on the flyway going south and there is a regular bird watching weekend there in which several hundred people come. So it's very, very important to the economy of the island, I think your listing here of the—well, just wildlife, watching the conservation and whooping crane habitat along the Platte River in Central Nebraska has generated significant economic benefit for local community, in 1991 an estimated 80,000 crane watchers. And I think it's important for us to remember that. We can't advance on a cost-ben-

efit basis for endangered species because how do you judge the benefits? How do you quantify them? How do you put a dollar value on saving a peregrine falcon? But, nonetheless, it is interesting that there is dollar value in connection with these things very frequently.

Mr. LANGHORST. Thank you very much.

Senator CHAFEE. Well, Mr. Chairman, this has been an excellent panel, and I want to thank you for putting it together, and I want to thank each of the members of the panel. We've got your testimony and we'll be looking it over, studying it and possibly be talking with you individually on occasion.

Thank you.

Senator KEMPTHORNE. Senator Chafee, thank you very much.

Mr. Langhorst, I found your written testimony very interesting, and I believe that we agree on two key points—though there may be others—but two that I'll discuss with you.

I agree with you about the need to broaden participation in planning and implementation, and I like your idea that Congress—and I'm quoting now—"Congress should encourage all stakeholders to design their own recovery implementation plans," unquote.

First, how could or should Congress do that?

Mr. LANGHORST. Well, if the Act is reauthorized in a way that allows for the formation under the parameters of the Fish and Wildlife Service recovery plans that States, tribes, and communities would be able to come up with implementation plans of their own that the Fish and Wildlife Service would sign off on, I think that you would—well, here is a good example I think. You're familiar, I'm sure, with what's going on with grizzly bears in Idaho. Despite what we heard about Wyoming, in Idaho it's a source for celebration perhaps because you've got industry groups and conservationists working together on a committee who have been together for a little over a year, I guess, and they've proposed that a committee would be given the charge by the Fish and Wildlife Service, again, with parameters. The recovery plan would set the sideboards so they wouldn't be given card blanche, but, you know, when people participate, I think you get rid of a lot of the hard feelings.

Senator KEMPTHORNE. I agree. I will note that with that grizzly plan in Idaho a recovery plan was proposed by a very diverse group. Unfortunately, their work product was not considered by the Federal Government until congressional intervention occurred. Then their suggestions were considered and judged to hold some real positive opportunities.

There is a system that seems to encourage local participation, but we need to create the environment where the Government indeed may receive it.

Mr. LANGHORST. There were several folks at the Lewiston field hearing—Laird Noh specifically, who compared it to previous recovery efforts—and though I think the wolf attempt was a great attempt to include folks, a lot of folks simply opted out, thinking it would go away but they had the option to get in. The grizzly is a little different. I think people are learning the lesson, and both sides are working together in the early stages.

Senator KEMPTHORNE. David, the other issue—and I won't discuss it with you—but, again, I think you and Mr. Egbert did bring up the incentives approach, and so those items that you would like to make part of the record would be helpful and I invite that.

Let me now ask Mr. Lambeth a few questions.

John, did the Fish and Wildlife Service before the final listing request any additional information from any of the affected industries or from scientists who did the 1993 sampling study or from any other parties?

Mr. LAMBETH. Well, in fact, what we found in looking through the listing record—first, with respect to the industries that we were involved in, the answer is categorically no. There was no reaching out to the industries to ask them or find out from them what their comments would be on the information, but more than that there is a very troublesome trend that appears as you read the final record, and that is that there were many attempts to gather information from those people supporting the listing, many records of personal communications, telephone calls, and letters that were developed by those folks that were supporting the listing but no questioning of scientists that supported data that indicated the listing was not warranted. So there was, we think, a real filtered approach to gathering science when it came to working on the listing.

Senator KEMPTHORNE. What would you attribute that to?

Mr. LAMBETH. That's difficult to say. We believe—one of the problems with this listing is that, as I mentioned in the testimony, there was this belief that there was a 90-percent loss of habitat of vernal pools, and Director Beattie mentioned the loss of habitat this morning. This was based on a 1978 doctoral dissertation that, to the best of our knowledge, has yet to be peer reviewed by other scientists. We think that that figure is completely inaccurate. We know it was a wide-held belief by many scientists. They wrote letters, they quoted it, and, yet, now they're saying we never looked at that number, and we never looked at the underlying data that that assumption was based on. Now that we're bringing up data that suggests otherwise, the scientific community really has stood up and said maybe this isn't a justified listing.

Senator KEMPTHORNE. So since the time of the listing, both your group—has it come forward with additional information and science based information and offered that to the service, and, again, what's the attitude or response?

Mr. LAMBETH. We have. The booklet that we submitted to the committee we've offered—we've been gathering additional information, we will continue to gather information and will submit all that information to the service. But we tried to do a very extensive sampling effort at the end of last year for the shrimp to show the—further document the extensive range. That effort was basically stopped by the service, and I would refer you now to the tab in the booklet that says "proposed study areas," and what this shows you in the booklet—and I'll hold it up here—is areas in yellow that we propose to survey for shrimp, the habitat. We were told by the service at the time that we were not allowed to sample because we were sampling inside known population areas. They said they already knew they existed there.

At that time we were not given the population maps. Since that time we have been. We have overlayed where we propose to study on the population maps, and you can see we intended to study in many areas that were outside the population. Of course, we didn't get the population maps until April and the wet season was over so we were unable to do sampling.

So it's really been a case where we've been frustrated. We've tried to gather more evidence. Scientists throughout the fairy shrimp community, the fairy shrimp scientists, have tried to gather more information but they have been largely frustrated by this listing because they're not allowed under the take provisions to take any specimens.

Senator KEMPTHORNE. Now in this report you have a picture of a former surface mining side, Sacramento, CA. Is that habitat?

Mr. LAMBETH. Yes, sir, it is. That brings up a very interesting question. We were told by the service in the final rule that these shrimp lived exclusively in vernal pool habitats. Well, that's not the only places they live and that's not the only places that have been regulated, and we have a whole series of photos that show the shrimp can live in roadside ditches, tire ruts. We've even found them in tires. As long as there is an area where those eggs can land and continually go through the wet-dry process, these shrimp appear to survive. They appear to be very, very hardy and live in many different areas.

Senator KEMPTHORNE. So in all of these photos, you're telling me that there are fairy shrimp here?

Mr. LAMBETH. That's correct, and this photo that you're pointing to was the site actually where proposed co-generation facilities was to be. They did that—they had to mitigate for this area—this picture is one of my favorites, as a matter of fact, because this area was created by—you can see the trucks in the background. They actually backed up and turned around in this area, and that's what created the ruts and created the indentations. The soils were the appropriate types of soils which formed ponds, and it contained fairy shrimp. The project was required to mitigate for fairy shrimp in this habitat.

Senator KEMPTHORNE. OK, and you said there can be up to 800,000 eggs in a single pool. How many occupied pools would you estimate there are in California?

Mr. LAMBETH. That's a very good question. It's a very difficult number to come by. We believe that there are approximately 1 million acres of habitat. From that million acres, there have been estimates but nobody has actually counted the vernal pools because we're dealing with such an extensive, vast area of land. But we estimate that there is somewhere in the range of four to five hundred thousand pools, and if you take that number and you go by the pipeline study, which found shrimp in half of the places they looked and you figure that half of these pools have shrimp, you're looking on the order of 80 billion eggs out there in the State and countless numbers of individuals. We literally think there are billions of these fairy shrimp in the State of California.

Senator KEMPTHORNE. OK. Now I think Dr. Egbert used the term, "but a willing Federal partner." Do you feel that you have encountered a willing Federal partner?

Mr. LAMBETH. Unfortunately, we haven't. I don't know if I want to use the word "attitude" but the Service has taken an approach since the listing. We have had discussions with the local office, the regional office, and the Federal offices. Both the office here in Washington, DC, and the regional office have said that they would look at additional information. The local office told us that they weren't interested in additional information about any sort of errors that occurred, any delisting. They said that their responsibility under the Act was for a recovery plan and they didn't want to hear about anything that would indicate that these shrimp weren't endangered.

Senator KEMPTHORNE. All right, thank you very much.

Dr. Wiese, you've given us some suggestions for improvements of recovery plans. Would you agree that peer review with an emphasis on increased non-governmental representation is especially important, and, if so, would you elaborate?

Dr. WIESE. Yes, we would agree that it's important for peer review outside the government scientists. Often there is a wide diversity of opinion. Also we've heard over and over again that the resources are not there for the government scientists, and they just don't have enough experts to cover everything that comes up.

Senator KEMPTHORNE. Any thoughts on how we make it meaningful and worthwhile for non-government scientists to participate in peer review?

Dr. WIESE. I think outside scientists would love to participate. AZA gets all kinds of requests to help us with our Species Survival Plan and all we have to do is ask, and we have an outpouring of university and other non-government organizations who have scientists that are very willing to help, and we collaborate very well with both the States and the Fish and Wildlife Service biologists.

Senator KEMPTHORNE. OK, all right, thank you.

Dr. Egbert, last question then. Again, the willing Federal partner from this State perspective, how willing is the Federal partner?

Mr. EGBERT. I have a sense that very frequently it's not necessarily that they're unwilling, but it's just that they don't realize the benefits of doing so. A lot of new people come in and they for whatever reason don't ask for our cooperation or support; I don't believe this necessarily reflects attitudes at the national level, the Washington level, but the instances in which we have difficulty tend to reflect an insensitivity to the fact that we are partners and the fact that local citizens tend to lump us resource people all together no matter where we come from. It tends to be—I don't know if it's an unwillingness so much as just not an awareness so much. Typically, it all works out in the end, but it's rocky at times, and maybe there could be a bit more direction to the local level to encourage and promote the partnership concept, which we hear a lot about at the national level. It doesn't always trickle down.

Senator KEMPTHORNE. All right, good.

Well, I want to thank all of you because——

Senator CHAFEE. Mr. Chairman, could I just ask a couple of quick questions. I know we're late in time so I will ask that the answers be very, very, quick.

On the—I think it's Title 10, section 10, you can get species for scientific reasons, and you said you were denied taking the catch.

How come you didn't proceed under that? Was it possible or what went wrong?

Mr. LAMBETH. That is what we were proceeding under, and, yet, they still denied us. What they told us was because we were serving within known populations that we weren't adding enough science to justify the take of these species.

Senator CHAFEE. OK, all right, so you tried. The next question quickly to Dr. Wiese. There is some suggestion that we don't have to worry about all these problems in ESA, that all we've got to do is have a little more captive breeding and this will straighten things out.

Now, I read—I would just like to read back to you what you said and see if you stand by it:

> Captive breeding is very expensive in terms of both time and money. So it's not feasible to initiate programs for more than a few hundred of the thousands to millions of threatened and endangered species worldwide. Ideally, ecological problems should be addressed early on so that captive breeding for reintroduction purposes is not necessary.

Is that your view?

Dr. WIESE. That is our view.

Senator CHAFEE. In other words, this is a last resort?

Dr. WIESE. Right, the ideal would be to protect the habitat, protect the species in the habitat and always keep the species in the wild and work as a cooperative group so we never have to come to the last resort of captive breeding for reintroduction.

However, captive breeding to develop husbandry techniques, educate the public, and support fundraising for protection of the wild should begin early. This needs to be done well before captive breeding for reintroduction is necessary.

Senator CHAFEE. OK, fine, thank you very much. And, finally, I would just like to say in connection with some of these species being worthwhile, and, Mr. Langhorst, there is an article in the National Geographic, August of this year—well, next month. See, we're ahead of things—and it's about saving North America's beleaguered bats and what they do for pest control. It's extremely interesting, and not only bugs that bother us humans, but bugs that are dangerous or harmful to farmers.

So it's a rather interesting article and I recommend it to everyone.

Senator KEMPTHORNE. There is also a good movie out now on bats.

[Laughter.]

Mr. LANGHORST. Could I add one thing to that statement?

Senator KEMPTHORNE. Yes.

Mr. LANGHORST. It's this—while a cost-benefit analysis may be required, there are a lot of things we don't know about the benefits of species, and there's no way to know the true costs of extinction and I just wanted to bring that up.

Senator KEMPTHORNE. All right. Well, again, thank you all. You've helped us immeasurably with this whole process and we appreciate that.

I would like to invite the third panel to come forward please.

Senator CHAFEE. Everybody please take your seats. We want to move this panel along.

Senator KEMPTHORNE. All right, I would like to welcome our third panel, and at this point also I would like to make part of the record testimony from Senator McConnell, who is unable to be with us today but is a member of the Environment and Public Works Committee, and this deals with his testimony in support of S. 968, the Bear Protection Act, which fits right in with what we will be discussing with this panel.

[The statement of Senator McConnell follows:]

STATEMENT OF HON. MITCH MCCONNELL,
U.S. SENATOR FROM THE STATE OF KENTUCKY

Mr. Chairman, I would like to thank you and the Members of the Subcommittee for holding these hearings and allowing me to testify in support of S. 968, the Bear Protection Act. I believe we have a real opportunity, if we act now, to protect the bear populations in this country from individuals seeking to profit from the slaughter and sale of the organs of these magnificent animals.

The legislation I have introduced is aimed at preventing the poaching of bears such as the American black bear, which is found in Alaska and many Western States, across the Northern Great Lakes, to New England, down through Appalachia and as far south as Florida. My bill closes several enforcement and jurisdictional loopholes that are caused by an inadequate patchwork of State laws. The current inconsistencies enable a wildly profitable underground black market for bear parts to flourish in the United States.

The booming illegal trade in bear viscera makes this bill necessary. At least 18 foreign countries are known to participate in the illegal trade in bear parts. Bear viscera are also illegally sold and traded in large urban areas in the U.S. such as San Francisco, Seattle, Portland, and New York City. These cities serve as primary ports for export shipments of these goods.

Bear parts, such as gallbladders, are used in traditional Asian medicine to treat everything from diabetes to heart disease. Due to the increasing demand for bear viscera, the population of most Asian bears has been almost totally annihilated over the last few years. This has led poachers to turn to American bears to fill the increasing demand. I, for one, cannot stand by and allow our own bear populations to be decimated by poachers.

Bear populations outside the U.S. have declined dramatically over the past several decades. In fact, many bear populations in Asia, including the panda, sloth, sun, and Asiatic black bear are threatened with extinction. All of these bear populations are listed under the Convention on International Trade in Endangered Species (CITES), Appendix I. This classification is the highest level of protection provided to an animal species. However, their existence remains threatened by the high demand and black market trade in exotic and traditional medicinal cures.

I am pleased to report that U.S. bear populations have, for the most part, remained stable. But the increasing trade in bear parts poses a serious threat. It is estimated that the number of black bears in the U.S. is nearly 400,000. Brown bear populations, which include the Grizzly, are estimated at 40,000, with less than 1,000 in the lower 48 States.

Each year, nearly 40,000 black bears are legally hunted in 36 States and Canada. Unfortunately, it has been estimated that roughly the same number is *illegally* poached every year according to John Doggett, chief of law enforcement for the Fish and Wildlife Service. This number is expected to increase as the source of Asian bears declines and the demand for bear viscera continues to grow.

According to various reports, including those from the Fish and Wildlife Service, hundreds of bear carcasses are turning up in the U.S. and Canada, completely intact, except for missing gallbladders, paws and claws.

Since 1981, State and Federal wildlife agents have conducted many successful undercover operations to stop the illegal hunting and sale of bear gallbladders. In 1988, Federal wildlife officials engaged in "Operation Smokey" in the Great Smokey Mountains National Park. These efforts uncovered 368 illegal black bear kills. As recently as last year, an investigation uncovered a group arranging illegal bear hunts for South Koreans in California. It was determined that at least 30 to 35 bears were killed as a result of these trips.

Greed is the driving force behind this heinous trade. Both the demand and the price of bear gallbladders have been driven to incredible levels. In South Korea, bear gall bladders are worth more than their weight in gold, and an average bear gallbladder can bring anywhere from $3,000 to as high as $10,000. All throughout Asia,

traditional medicine shops regularly stock bear gallbladders or gall extract for public consumption. In fact, it is not uncommon for such products to be sold on the street in downtown Seoul, South Korea.

Currently, U.S. Law enforcement officials have little power to address the poaching of bears and the sale of their parts in an effective manner. The Department of the Interior has neither the manpower nor the budget to test all bear parts sold legally in the U.S. Without extensive testing, law enforcement officials cannot determine if gall bladders or other parts were taken from threatened or endangered species. This problem perpetuates the poaching of endangered or threatened bears.

Currently, due to the patchwork of State laws, poachers are effectively able to "launder" the gall through the eight States that permit the sale of bear parts. The outright ban on the trade, sale or barter of bear viscera, including items that claim to contain bear parts, will close the existing loopholes and will allow State and Federal wildlife official to focus their limited resources on much needed conservation efforts.

The Bear Protection Act will establish national guidelines for trade in bear parts, but it will not weaken any existing State laws that have been instituted to deal with this issue. The Lacey Act, enacted in 1900, was first Federal wildlife law intended to put an end to the interstate traffic of animals illegally killed in their State of origin. Unfortunately, this legislation has been ineffective in reducing the laundering of bear parts through those States that permit the sale. As long as a few States permit this action to go on, poaching for profit will continue.

To effectively manage their own bear populations, States need a minimum level of protection. This is also true if we are to curtail the international trade in bear parts. Since a number of countries, including Taiwan and South Korea, have not signed the Convention on International Trade on Endangered Species, it is difficult to enforce this agreement. I am pleased, however, that all U.S. bears are listed on Appendix II of this agreement which regulates the international trade through a permit system.

This bill also instructs the Secretary of the Interior and the United States Trade Representative to establish a dialog with the appropriate countries to coordinate efforts aimed at curtailing the international bear trade. Obviously, efforts to reduce the demand in Asia is of the utmost importance. Efforts to encourage foreign governments to increase usage of synthetic or other natural products as an alternative to bear gall will greatly improve the situation.

Efforts to bolster protection in Canada should also be a priority. Canada has mandated fewer across-the-board protections of their bear populations and do not prohibit the sale of bear viscera in all Provinces. Canada and the U.S. share thousands of miles of open border that can't possibly be adequately monitored to stop poaching or smugglers. These actions must be stopped if were are to effectively protect our bears.

It is important to note that my bill would in no way affect legal hunting of bears. Hunters would still be allowed to keep trophies and furs of bears killed during legal hunts. I believe S. 968 is crafted narrowly enough to deal with the poaching of the American bears for profit, while still ensuring the rights of American sportsmen.

Mr. Chairman, it is estimated that Kentucky has only 50 to 100 Black bears remaining in the wild. Black bears once roamed free across the Appalachian mountains, through the rolling hills of the bluegrass, all the way to the Mississippi River. Although we cannot restore the numbers we once had, we can insure that the remaining bears are not killed and sold for profit to the highest bidder.

I would like thank the Chairman, Sen. Kempthorne, for holding this hearing. I urge my colleagues to join me in support of this much needed legislation.

I ask that the full text of the bill be printed in the record.

Senator KEMPTHORNE. With that, let me introduce the members of the panel.

Our first speaker will be Mr. Jeff Cilek, who is the program executive of The Peregrine Fund in Boise, ID. And, Jeff, let me just state that—because we were together a couple of weeks ago for the announcement of the delisting of the peregrine falcon, and just to tell you how proud all of Idaho is with the World Center for Birds of Prey, which is located in Boise, ID, and the long history that personally I have with that wonderful organization. But, again, I want to congratulate you and all the dedicated people affiliated with that. So if you would like, you can begin your comments.

STATEMENT OF JEFF CILEK, PROGRAM DIRECTOR, THE PEREGRINE FUND, BOISE, ID

Mr. CILEK. Mr. Chairman, I appreciate those kind comments on the recovery of the species. I would also like to thank you and the rest of the subcommittee and the committee for the opportunity to testify. As you stated, I'm Jeff Cilek representing The Peregrine Fund. The Peregrine Fund is a non-profit conservation organization headquartered in Boise, ID. The organization was founded in 1970 at Cornell University in response to the catastrophic decline of the peregrine falcon throughout much of North America. The effort to save this species resulted in breakthroughs in the field of endangered species research.

In addition to the peregrine falcon, we are working with other species such as the harpy eagle, California condor, Philippine eagle, Aplomaso falcon, mauritius kestrel, orange breasted falcon, Hawaiian forest birds and many other species. We are also involved in conservation projects around the world that focus on preserving endangered environments and improving local people's conservation ability. These programs exist in Madagascar, Guatemala, Kenya and elsewhere. We strongly believe in cooperative efforts involving individuals, organizations, corporations, and government and believe that it has been the cornerstone of the program to restore the peregrine falcon.

When The Peregrine Fund was founded in 1970, there were no known pairs of peregrine falcons nesting east of the Mississippi River, and they were 80 or 90 percent gone in the west. Experts from around world were convinced that DDT and other pesticides had been responsible for unprecedented population crashes of the falcon in both Europe and North America.

President Nixon's ban of DDT in 1992 provided the hope that with the proper release of captive bred falcons, the species had a chance. The other significant aspect was the extensive cooperative effort between Federal and agencies, various States, cities, counties, universities, conservation groups, foundations, private citizens, corporations, and many, many others.

As you stated, we stood on the grounds of the capitol just a few days ago and celebrated the Fish and Wildlife Service' proposal to delist the species. The population of the bird has risen from less than 50 pairs in 1970 to over 1,000 now. Essentially, there are as many peregrine falcons as there every have been. We will continue with our restoration efforts for the next few years with releases in the Northwest, as well as filling some holes back in the Eastern United States.

We learned two important lessons with the recovery of the peregrine falcon. First, the technology developed for the peregrine could be adapted for use with a variety of other species, which I mentioned earlier. And, second, the best the way to succeed in conservation is through the use of common sense, goodwill, and reason.

What I would like to bring to your attention today are some of the difficulties we are having with the Fish and Wildlife Service permitting process. Over the past 25 years, well intended laws designed to protect wildlife have been enacted. These laws and the applicable regulations are having the unfortunate side effect of

making it difficult for conservation organizations like The Peregrine Fund to obtain permits necessary to go about our business.

Let me attempt to provide a few examples:

Under the terms of the regulations stemming from the Endangered Species Act for CITES, a permit is required from the exporting country and from the importing country for each specific event undertaken. For example, The Peregrine Fund has been working with the very rare harpy eagle from South and Central America for years. The goal of the program is to return young harpy eagles hatched in Boise to areas where the species has been extirpated. Over the past few years we have built up our breeding stock of non-releasable harpy eagles to 10 pairs, mostly from Venezuela and Ecuador. This, however, has been a permitting nightmare.

An export permit from the Venezuelan Government, for instance, takes approximately 3 weeks. By comparison, an import permit from the United States takes 28 to 40 weeks, although both countries are operating under the terms of the same treaty. Now that building our breeding stock of harpy eagles is behind us, the second half of our permitting problem may just be beginning. Additional permits will be required to return the young to Central and South America.

Let me use another example:

Beginning one year in advance to return mauritius kestrels to mauritius, we were unable to obtain the necessary permits from the U.S. Government. Frustrations stemming from these delays required us to move the program to the United Kingdom where the program was successfully completed and the species recovered. We would prefer to complete work with the harpy eagle project at our facility in Boise.

Information required for every permit is similar in nature to the previous permit, especially if the permit is for the same species. On one occasion after The Peregrine Fund had waited 5 months for a permit to import a harpy eagle, the Fish and Wildlife Service contacted us and requested additional information on our breeding facilities. This information had been submitted with two previously approved applications. After several additional weeks of waiting, the service requested that the same information be resubmitted using a different size format so that it could better fit in their filing system.

CITES permits are not the only problem. Domestic permits are also extremely difficult. In December 1991 The Peregrine Fund requested a renewal of our endangered species permit for peregrine falcons. Seven months later, the Fish and Wildlife Service requested the resumés of all sub-permittees on the permit. Nine months later, the Service requested a brief description of the activity each person would be conducting under the permit and whether that individual would be working alone or under the supervision of more experienced people.

At this point, we simply told the Service if they felt The Peregrine Fund did not have the necessary qualifications to work with peregrine falcons, then they should not issue us a permit. The permit was issued soon thereafter.

I'm very confident that The Peregrine Fund is not the only conservation organization that is having these problems. If the com-

mittee had time to spend, there would probably be a line of well-meaning conservation organizations with similar problems. I would hope that these organizations have the opportunity to present written testimony.

The solution we are proposing is to provide organizations involved in conservation with a blanket permit. Such a conservation permit would allow an organization to carry out all activities permitted under the laws. The organization would be required to submit reports annually to the Service, and if the Secretary thought so, he or she could revoke such a permit for violations of the conditions set forth.

I would like to, again, thank you for the opportunity to present the views of The Peregrine Fund. As you proceed toward reauthorization of the Endangered Species Act, please keep our concerns in mind.

Thank you.

Senator KEMPTHORNE. Jeff, thank you very much.

Before we continue the opening comments from our panelists, because Senator Chafee has to leave, I would like to give him an opportunity to ask a few questions before he departs.

So, Senator Chafee.

Senator CHAFEE. Thank you very much, Mr. Chairman. My questions will be brief. Regrettably, I do have to leave. I think I can stay partially through the next witness.

Mr. Cilek, if DDT is so harmful, why do we export it?

Mr. CILEK. Sir, The Peregrine Fund is not involved with the manufacture or export of DDT. We deal strictly with the conservation of endangered birds.

Senator CHAFEE. Well, I'm familiar with the dangers and the harms it's done oversees. In Bermuda they have what they call the kahowe, which is a sea bird that lives off fish, and the kahowe has had tremendous problems because its eggs have collapsed because of the DDT in the ocean that the fish have ingested and then the kahowe gets it. I find it troubling.

The second point is in listening to your description of the permitting process both under CITES and under our laws, I can see the reason that it's there. There can be a lot of fly by-night organizations that would try to take advantage. It seems to me it has to reflect the integrity of the organization. In other words, yours is an organization that's there and legitimate and with great success and high, fine science. So I can see—I would think that you would have some standing in order to get the approval far faster than I think you said, what, 5 months to get approval?

Mr. CILEK. Yes.

Senator CHAFEE. It's worthwhile looking into all of that, and I think it's good you brought up that point.

Mr. Chairman, thank you, and I apologize. I have to leave in a couple of minutes, but I'm going to listen to the start of the next witness. Again, I want to congratulate you on the panels you've put together. They've been excellent, every single one of them.

Senator KEMPTHORNE. Thank you very much, and, too, while you're still here, Senator, I just think it's worth noting that you do have a very successful conservation organization that has really brought about the recovery of the peregrine falcon, and, yet, as Jeff

has pointed out, one of the projects they had to move from Idaho to the United Kingdom because they couldn't get the permits.

Mr. CILEK. That's correct, and it's probably not entirely the fault of the Service. The laws were enacted and there is law on top of law and regulation on top of regulation. We're just kind of backed in a corner, and I think this is an area that the Service really needs some help from Congress to get out. We would be happy to work with the Service.

Senator KEMPTHORNE. Good, all right.

Let me introduce then our next witness who is Gerhardus J. Hanekom, who is the Minister of Environment and Tourism, the Republic of Namibia; accompanied by Dr. Malan Lindeque. Is that pronounced correct?

Mr. LINDEQUE. Lindeque.

Senator KEMPTHORNE. Say that again.

Mr. LINDEQUE. Lindeque.

Senator KEMPTHORNE. Lindeque, deputy director, Specialist Support Services, Ministry of Environment and Tourism, Republic of Namibia.

Mr. Minister? That's easier.

STATEMENT OF GERHARDUS J. HANEKOM, MINISTER OF ENVIRONMENT AND TOURISM, REPUBLIC OF NAMIBIA; ACCOMPANIED BY MALAN LINDEQUE, DEPUTY DIRECTOR, SPECIALIST SUPPORT SERVICES, MINISTRY OF ENVIRONMENT AND TOURISM, REPUBLIC OF NAMIBIA

Mr. HANEKOM. Thank you. Mr. Chairman, thank you for the opportunity to give evidence at this hearing which is of great importance to my country. As you've introduced myself already, I am Gerhardus Jacobus Hanekom, the Minister of Environment and Tourism of Namibia, and I am representing the Namibian Government on this occasion. I've come all the way from Windhoek in Namibia especially for this purpose.

Senator KEMPTHORNE. We're honored to have you here.

Mr. HANEKOM. Namibia is one of the four countries which launched a formal diplomatic protest about the current structure and administration of the Endangered Species Act. I am submitting to you a formal written statement with an annexure containing detailed recommendations for revising the Endangered Species Act. Actually, Mr. Chairman, my formal written statement has already been lodged. I pray indulgence to lodge a further batch of statements received from 11 organizations which support the case of Namibia and I pray your indulgence also to accept this as evidence before the committee.

International concerns about the destruction of African wildlife and reasons for having complex domestic laws such as the Endangered Species Act and international convention such as CITES stem from the ongoing destruction of wildlife habitat. It is not hunting, or poaching or trade in wildlife that is to blame for the decline of the vast majority of species in the developing world. People and governments have no option but to use available natural resources to best effect in a region beset with enormous developmental problems. Deciding how to use the land in the best interest of people is ultimately based on simple economics.

Our region has pursued policies which retain the highest possible values on wild species and natural landscapes. Without these values and a competitive contribution from these revenues to the development and well-being of the Nation, we will not be able to stop the progressive loss of wildlife habitat to other forms of land use. It is of great importance to us that the Endangered Species Act does not have a counter-productive effect on our domestic conservation programs. We cannot afford to subject long-term conservation programs to the threat of unilateral action by a foreign agency ostensibly in the interest of protecting our species.

We know that we can count on the support of the United States when we have serious conservation problems requiring legislative action, but we want to be frank and prefer to request such support only when required to ensure that the remedy fits the ailment.

Concerning the proposed changes to the Endangered Species Act, our response, as indicated in our written statement, seeks recognition for our own policies and programs. Inappropriate forms of protection bestowed by the Endangered Species Act dictate harmful policy to Africans about some of our species. It is imperative in our view that international conservation measures should be harmonized with conservation programs in each Nation. It is equally important that the Endangered Species Act be harmonized with CITES and the mechanism for international participation in decisionmaking that are part of this convention.

Mr. Chairman, the Constitution of the Republic of Namibia provides that—and I wish to quote—

> The State shall actively promote and maintain the welfare of the people for adopting inter alia a policy aimed at the maintenance of the biological diversity of Namibia and utilization of living, natural resources on a sustainable basis for the benefit of all Namibians.

Mr. Chairman, we are committed to this idea. We are pursuing all options to maintain the coexistence between people and wildlife in a harsh and unforgiving environment.

In conclusion, Mr. Chairman, I wish to thank you for having listened to me, and I wish to invite you to visit my country to see what we are really doing there.

I thank you.

Senator KEMPTHORNE. Mr. Minister, thank you very much, and I would look forward to the future when I can visit your country. I know it would be a very wonderful experience.

Let me also acknowledge Rams Rammutla—you can call me Dirk.

[Laughter.]

Senator KEMPTHORNE. Deputy Director, South Africa National Parks Board, Republic of South Africa. Our next speaker will be Stephen Kasere who is the deputy director, CAMPFIRE Association, Zimbabwe.

Mr. KASERE.

STATEMENT OF STEPHEN KASERE, DEPUTY DIRECTOR, CAMPFIRE ASSOCIATION, ZIMBABWE

Mr. KASERE. Mr. Chairman, members of the Senate, thank you very much for this opportunity which you have accorded me. My name is Stephen Kasere, deputy director of a community-based in-

tegrated conservation and rural development program in Zimbabwe called CAMPFIRE.

Please understand why we oppose the Endangered Species Act. Although it is an endeavor to protect our species, but it really controls the safety of our economy and our people. Let me start by giving you a background of the political economy of my country, Zimbabwe.

The crisis faced by Zimbabwe today is an acute shortage of land for both human and wildlife habitation. During the colonial era, European settlers claimed the best land and forced the majority population of black people into arid and semi-arid areas which are called "communal areas." It is in these areas today where 55 percent of our people live in abject poverty. Lack of serious development commitments by the colonial governments in the past were worsened by the fact that many of these communal settlements were located near or around national parks, which take up 18 percent of our total land. The parks protect overpopulations of government-owned elephants and other species, and they destroy our crops and kill our children.

The destruction of our crops by animals that we were not allowed to control or utilize for our economic or spiritual well-being in the past has engendered strong resistance from our people. They even saw international poachers as heros for eliminating an unnecessary danger.

To end this apartheid and to bring to halt serious poaching, the government introduced the program, CAMPFIRE, which gives communities ownership and the right to utilize wildlife in a sustainable way by allowing controlled sports hunting, on a strict quota basis set up by the Department of National Parks. The quotas don't exceed 0.75 percent of the total of the species. CAMPFIRE has managed to generate income for peasants, which cushions the cost of crops which are destroyed by elephants and species. That's persuading them to tolerate species as assets and not liabilities.

Much of the income generated through CAMPFIRE has been invested into crucial development projects such as schools, clinics, game fences, which people themselves decide. About 20 percent of the income has been applied back into anti-poaching and other programs which are meant to protect our species.

Such programs include the hiring of game guards who protect the wildlife species because the people now realize that these resources are an asset. They are now a resource, and no longer a pest that we should destroy. Crops are a form of compensation too.

In Southern Africa we are involved in a lot of networking and research programs, so it is therefore not a surprise that we, in Zimbabwe, through SACIM and our Ambassadors, oppose the proposed Endangered Species Act's endeavor. It waters down our conservation strategies, which we think are the only way for the region, by emphasizing on strictness and prohibition. The Endangered Species Act has only limited benefits which compensate our people against the cost.

Sport hunting, when done in a very limited manner in a very controlled way, is the best way of controlling species population, particularly elephants. Crop destruction is costly to human beings. Adult species of wildlife also need our protection outside the Na-

tional Parks. I will emphasize, ladies and gentlemen, that we are talking of consumptive use of our resources outside the National Parks. Otherwise, no consumptive use is allowed in protected areas, but these are animals which are living with people outside the protected areas. We need to find out an economic way of protecting our people from suffering the cost imposed by this wildlife.

We think that the Endangered Species Act when it addresses the use of foreign animal species, and then paints Africans as cold-blooded exterminators of wildlife, such that we must be controlled from the outside, fails to realize that African people have a great passion and sympathy for wildlife.

As a matter of fact, there is one thing that has always been overlooked by northerners—as Zimbabweans, we have a strong cultural attachment to our wildlife. This attachment makes it imperative to utilize our game sustainably, as almost every animal has a spiritual significance. Almost every indigenous black Zimbabwean has a totem of an animal which means that he associates his survival with the survival of that particular animal, and this is a serious lesson, gentlemen. We strongly believe that if the elephant is no longer there in Zimbabwe, all the people who believe in the elephant, who enjoys the totem of the elephant, will no longer feel that spiritual protection. Therefore, it is an obligation on our part to look after the elephant and all the other species.

But all this said, we feel that we should have a stronger arena for international arrangements and control, and we strongly lobbied in support of CITES as the best instrument to articulate our sentiments and point to our development in the future.

Let me emphasize that our concern is neither to interfere with the Endangered Species Act insofar as it deals with your species in America nor to plead here to be allowed to ruthlessly massacre our wildlife for profit. We are not callous wildlife killers as the latest spate of propaganda would have you believe. We are a rational group of people whose own development is at its lowest ebb, and, therefore, trying to find out how best we can utilize our limited land for both conservation and development.

So to wrap it up, Mr. Chairman, as much as we would expect that the Endangered Species Act is your internal business and that we do not vote in American politics, it is our most profound opinion that this Act should be changed as it takes away the only benefits for poor countries of conserving wildlife without taking the heavy costs. I am sure it is not beyond your ability to accommodate a few changes, which would suit all rational individuals who wish to see Africa's spectacular wildlife survive and our people together.

I could go further, Mr. Chairman, to explain the relationship of our wildlife and the dangers, the loss of species, which is the result of political instability, political instability which has been instigated by profit. We feel that if we accommodate some economic benefit, we would reduce the chances of political instability, which alone claim a lot of wild species which go unrecorded.

Thank you, Mr. Chairman.

Senator KEMPTHORNE. Mr. Kasere, thank you very much.

Our next witness will be Dr. John Grandy, who is the vice president of Wildlife and Habitat Protection, the Humane Society of the United States here in Washington.

Dr. Grandy, welcome.

STATEMENT OF JOHN GRANDY, VICE PRESIDENT, WILDLIFE AND HABITAT PROTECTION, THE HUMANE SOCIETY OF THE UNITED STATES, WASHINGTON, DC; ACCOMPANIED BY TERESA TELECKY

Dr. GRANDY. Thank you very much, Mr. Chairman.

Good afternoon, it's a pleasure for me to be here today representing The Humane Society of the United States and Humane Society International, and our more than 2.5 million members and constituents nationwide. I'm also pleased to present today to the committee a report which we have just done on the alarming growth of the American trophy hunting industry and to have with me Dr. Teresa Telecky, who is the principal author of that report.

We have a disgraceful problem in this country that threatens the heart and soul of our national commitment to conservation and animal protection. Our citizens are destroying wildlife at a phenomenal rate, not because we are living in poverty and are forced to eke out an existence by killing wildlife for food, but for the most frivolous purposes—because we are wealthy and can afford to pursue and kill them as trophies and hang their heads on our walls.

To the HSUS it is a disturbing and embarrassing fact that America is the world's largest market for wildlife, a market that has almost single-handedly brought populations of many animal species to the brink of extinction. For over 20 years the Endangered Species Act has appropriately restricted the importation to the United States foreign species listed as endangered or threatened. However, as described in our attached report on the trophy hunting industry, even the relatively few species listed under the Endangered Species Act can be and are imported by the hundreds under certain exemptions.

Among the major findings of our report are:

In 1993 46,582 animals, representing over 250 species, were killed by American trophy hunters and imported to the United States, an increase of 71 percent since 1990. Among those are such animals as zebras, baboons, wart hogs, ostriches, African leopards, African lions, and giraffes.

Also, in 1993 1,322 animals, representing 35 endangered and threatened species under the Endangered Species Act, were killed by American trophy hunters and imported to the United States, an increase of 83.6 percent since 1990. Endangered and threatened animals that were imported as trophies in 1993 included 416 African elephants, 346 leopards, 229 lechwe, 100 bontebok, and 64 Hartmann's mountain zebras.

Mr. Chairman, the fact is that even under the current Endangered Species Act, too many foreign, endangered and threatened species are allowed to come into this country every year. Exemptions in the ESA language and the interpretation of the ESA by the Fish and Wildlife Service have already made the importation, to the United States, of trophies of endangered and threatened species easy.

For example, did you know, Mr. Chairman, that it cost only $25 to get a permit to import an elephant or a leopard and that it can take as little as 3 days to get such a permit from the Fish and

Wildlife Service? We are aware that four foreign nations—Zimbabwe, Botswana, Namibia, and Malawi—along with foreign and domestic organizations that promote wildlife exploitation, are advocating that the ESA should not provide protection for foreign species at all or that the permitting system for the importation of foreign, threatened, and endangered species should be simplified.

There is, for example, a proposal to amend section 10 of the ESA to grant wildlife importers a 10-year general import permit. This proposal, Mr. Chairman, for reasons I've explained in detail in my statement, is as ludicrous as it is destructive in both content and scope. As proven by the startling number of foreign, endangered and threatened species that are allowed to be imported under the current ESA, we do not need to change the law to allow imported animals from these nations.

The aforementioned four southern African nations have claimed that the importation of foreign species to the United States should not be addressed by the ESA, and that instead CITES alone should govern. However, as you know, Mr. Chairman, CITES allows stronger domestic measures. This is a stronger domestic measure. This is a judgment related to our national ethics and what activities we will condone.

Finally, Mr. Chairman, federally-funded projects overseas should not be allowed to directly or indirectly undermine the ESA or CITES. However, it has come to our attention that one government agency, the Agency for International Development, is subsidizing trophy hunting of elephants. This is a scandalous and detrimental situation and is a waste of taxpayer's money. Indeed, CAMPFIRE and ADMADE programs in Zimbabwe and Zambia respectively that are presumably based on local people selling wildlife to trophy hunters, benefit far less from trophy hunting than they have from U.S. taxpayers who are subsidizing this at an average rate of $2 million per year.

This is a scandal. Our citizens, apart from the special interest represented by the safari clubs or similar groups, have no interest in promoting or supporting trophy hunting in foreign nations.

Thank you, Mr. Chairman. I've included a set of detailed recommendations, which should be obvious from the content of my remarks. I would be happy to answer any questions that you may have.

Senator KEMPTHORNE. All right, Dr. Grandy, thank you very much for your input.

Now Ms. Ginette Hemley, director of the International Wildlife Policy, World Wildlife Fund, Washington, DC.

Welcome.

STATEMENT OF GINETTE HEMLEY, DIRECTOR OF THE INTERNATIONAL WILDLIFE POLICY, WORLD WILDLIFE FUND

Ms. HEMLEY. Thank you, Mr. Chairman. I appreciate the opportunity to be here today. I am Ginette Hemley, director of the International Policy at the World Wildlife Fund. WWF is the largest private conservation organization working internationally to protect wildlife and wildlife habitats. We are currently supporting conservation efforts in more than 70 countries and are privileged to support programs in the two nations represented on the panel

today. World Wildlife Fund has worked extensively with CITES since the treaty's inception and provides both technical and financial support to member nations and their CITES programs.

I would like to address some of the issues, the key issues that have already been discussed, and respond to some of the points made by previous speakers:

First, we appreciate the opportunity to hear some of the concerns voiced by our southern African colleagues over the Endangered Species Act and the United States' implementation of CITES. World Wildlife Fund recognizes that Namibia, Zimbabwe, and South Africa in particular have in many ways been pioneers in wildlife conservation, building programs that rely in part on wildlife use and international trade to provide important income for rural communities, particularly through controlled sport hunting. We recognize the value of these programs and have actively supported them.

Mr. Chairman, in looking at the complex problems of international wildlife trade, I have to say that if all we had to worry about was resolving the issues in southern Africa, our tasks would probably be relatively easy. We are very sympathetic to the need to make sure that effective conservation programs are not undermined by excessive regulation in the United States. But the international wildlife trade and all its associated problems and threats to species is much broader than just southern Africa. In addressing the concerns of these particular countries, which we should do, we must not undermine the important conservation benefits the Endangered Species Act provides for endangered and threatened species in other parts of the world.

The robust market forces of our vast economy here in the United States, the world's largest wildlife market, has wreaked havoc for many foreign species through uncontrolled trade in the recent past, from large mammals, to exotic birds, reptiles, and other forms of wildlife with commercial value. We know how the wildlife trade works. It often occurs in sudden cycles—trends can change very quickly and species that are naturally rare or vulnerable to over exploitation can experience rapid demise. Many countries in Latin America, Asia, and parts of Africa have enacted very strict wildlife export laws as a result of these trade threats. The Endangered Species Act has brought enforcement authority and commerce restrictions that have in fact *helped* many of these countries enforce their own wildlife protection laws by providing important safeguards against illegal and detrimental trade. The ESA helps provide the teeth to make CITES, the international conservation convention, work. The law enforcement record of the Fish and Wildlife Service shows ample evidence of the benefits to foreign countries of ESA actions affecting species that slipped through protection barriers of their native countries.

Just 2 days ago, after a 15-month investigation, for example, enforcement agents in New York apprehended an individual for transporting and selling illegally imported skins from the critically endangered snow leopard, in violation of the ESA. Although the species is also covered by the strictest protections of CITES and is prohibited from export in all of its native countries, it was the

interstate commerce restrictions of the Act that allowed for the individual's arrest and for this smuggling ring to be broken up.

The Endangered Species Act provides for trade control measures that do go beyond CITES, but this is explicitly allowed for in the convention. It is in fact the normal practice of most trading countries, including other major markets like many of the European Union nations. A number of countries have in fact gone well *beyond* the CITES mandate by prohibiting most wildlife imports and exports. The United States has, in our view, struck an appropriate balance. The ESA is strong, but it is also flexible.

I should also mention here, sir, that it's important to keep in mind that much of the wildlife trade as a whole, which is a multibillion dollar business, occurs outside of the purview of both CITES and the ESA. It is a very small segment of the trade that is covered by regulations. Most of it is largely unregulated.

Most of the concerns surrounding the international provisions of the ESA, as discussed today, relate in our view to administrative matters associated with just a handful of species, specifically the African elephant, the leopard, the Nile crocodile and perhaps one or two others, principally species that are important in sport hunting. Some have argued that the ESA has unduly restricted trade in these species, but I think it's important to look at the trade facts to understand just what those restrictions may or may not be.

The application of special rules under the ESA for the elephant and leopard, for example, in practice are in many ways *less* strict than CITES. The United States imports more products from these species than any other country in the world. In the last 2 years, for example, we imported at least 200 trophies of African elephants, and most of those came from Zimbabwe. A similar rule for leopards allowed for at least 600 trophies of leopards to be imported into the United States from about 10 African countries during the last 2 years.

These rules, in our mind, demonstrate the flexibility under the Act for allowing imports of certain threatened species when such trade serves conservation purposes, such as in the countries represented here today, while at the same time maintaining safeguards against detrimental trade. It is important to remember that wildlife conservation and trade control capabilities vary enormously among countries, and these differences are not always recognized or addressed through the CITES process.

There is little question that most southern African countries have good programs, but I can tell you that the situation in other parts of the world—in west and central Africa, for example—is a completely different story.

In sum, Mr. Chairman, we believe that the Endangered Species Act is sufficiently broad but appropriately flexible to implement the requirements of CITES, as well as to provide protection for foreign species not covered by the convention. These provisions should be maintained. There is, in our view, no need to change the Act to address the specific but important issues raised by our African guests here today. At the same time, implementation of the Act and its CITES measures, including accommodation of the needs some foreign countries and species, could and should be improved. This goal could be achieved in part by harmonizing the CITES and ESA list

to better follow the international standards set by the convention. This might be achieved, for example, through the establishment of a trigger of an automatic review when a CITES listing change takes place after the biannual conferences of the parties.

Another area where this goal could be achieved would be through broader and more regular consultations with the foreign countries that have specific problems, and where the United States market is important for their conservation programs.

We recognize that these actions may require an adjustment of priorities at the Fish and Wildlife Service because of tight budgets and staffing, but we do believe they are important, as we have heard today, and should be undertaken.

Thank you.

Senator KEMPTHORNE. Ms. Hemley, thank you very much.

Let me ask our panelists a few questions:

Mr. Cilek, I know in the conversations I've had with representatives of The Peregrine Fund at times their expression of real frustration with the permitting process—in fact I remember at one point—and this was not you who said this—but there was a situation where you simply could not get a permit and so in frustration really the attitude expressed was, then keep your permit and we'll just stop the program. Yet, here is a conservation group dedicated to the recovery of species.

I understand that things sometimes are so difficult that the species we're trying to save actually are in danger, and I'm thinking of the one example. Do I understand that you actually had an eagle die while you were waiting for a permit from the Fish and Wildlife Service, died because it was held in captivity as opposed to being released, as you had hoped to do?

Mr. CILEK. Well, it was a harpy eagle that we were trying to import from Venezuela, I believe, or Ecuador—I'm not sure—and we got the permit from Venezuela very quickly and we were delayed in the United States from getting the permit. The bird remained in Venezuela or Ecuador, wherever it was, and while we were waiting for the permit, it died before we could get it in. It was going to be one of our breeding birds, and actually I think we found that bird tied to a boat motor of some kid's boat. So the Venezuelans were happy to let us have it. It had a broken wing and couldn't be released into the wild anyway but it was a perfect breeding bird, and it didn't make it.

Senator KEMPTHORNE. What would have prevented that? I mean, what would keep an agency from saying, yes, bring this bird here?

Mr. CILEK. I think that the laws are very difficult for them to work through and the work load that they have, just the number of permits that they have to deal with. It's just insurmountable. So they, quite frankly, are understaffed and overworked and need relief, and the relief we've suggested is put the burden on us. Give us a permit and if we don't do things properly, then take it away.

Senator KEMPTHORNE. As a follow-up to that, you've stated that rather than requiring individual permits, you've suggested that organizations involved in conservation be provided with a blanket permit. Is that what you're suggesting?

Mr. CILEK. Exactly. There are a lot of laws that are involved here, and we don't want just one permit for each law. Give us one

permit to take care of all the laws, permits to carry out all of our activities. I know there are other organizations involved, and if you can include their written testimony at some point, that would be helpful.

Senator KEMPTHORNE. Yes, we would be happy to do so, and I look forward to your recommendations on this permitting process.

Mr. CILEK. Good, thank you.

Senator KEMPTHORNE. Mr. Minister, I noted that you were listening with great interest to what Dr. Grandy was saying. Any thoughts on what Dr. Grandy has said from your perspective?

Mr. HANEKOM. Thank you. If I might comment honestly about it, it is a very emotionally charged submission which he made, but we in Namibia cannot really buy that argument. We cannot live with that attitude looking at that. What Dr. Grandy is missing incidently in attacking trophy hunters—he is missing the basics, the basics that my government subscribes to, and that is it's interest in people and that we are committed to allow our people in a poor developing country to earn the most income that they could, and we are committed that all sources that our country has must be utilized correctly for the benefit of our people.

I sometimes get the impression that certain groups are more interested in animals than they are in people. We cannot buy that. We live in a country that has recently obtained its independence about 5 years ago. We are trying to help our people, we are trying to also promote the welfare of our people, and our people are entitled to all benefits that our country can offer. That is basically our policy—that the animals are there, the wildlife is there for the benefit to be utilized by our people and anything that brings down and has an effect on the value of the wildlife works detrimental to our policy in helping and promoting the interest of our people.

You cannot convince anybody living in the poorer areas of Namibia—and, Mr. Chairman, in certain areas the average income per capita of some of the families are $55 U.S. dollars a year. That is true. Now you go and convince that man to try and assist and conserve wildlife just for the sake of conserving it—forget about it. He will only conserve and assist you to conserve it if it is of value to him, and if the wildlife is of value, Mr. Chairman, he will.

But we have started this policy in a certain part of Namibia, and, Mr. Chairman, I'm really honest that I can say today that at the moment Namibia has the highest animal wildlife population that it's ever had this century. Our wildlife is increasing in our area because we follow the policy that wildlife is of value, and we're trying to manage wildlife correctly. We've even, in my ministry, we've changed the name of the one directory which was wildlife conservation and we changed it to wild resource management because we believe that wildlife is there to be managed by man for the benefit of the community, for the benefit of its people.

If trophy hunting—that is one of the ways that animals in wildlife are being marketed, but we are not really advocating the matter of trophy hunting, and I cannot see why we should now virtually condemn trophy hunting. It is one of the methods of marketing and of getting value out of your animals.

Senator KEMPTHORNE. Mr. Minister, if I may then, let me get some clarification. Based on what you've said, do you have programs that would prevent the extinction of these animals?

Mr. HANEKOM. Yes, we do have programs to prevent the extinction of the animals but it means that we do not shy away from the sustainable use of animals and that we have been able to stop poaching to a large extent because the animals are of value to the people. About 13 percent of our country is national parks, which are protected areas, but in addition to that, private landowners have added something like 5.5 percent of their own land which they are also using exclusively for game and for wildlife.

Mr. Chairman, that is increasing the habitat of the animals. As I've said in my short submission, it is more the decrease of the habitat that has killed the animals and not so much hunting and poaching, and we are working actively to increase and to put that back.

Senator KEMPTHORNE. Mr. Minister, I appreciate your comments.

Let me ask Director Rammutla for your thoughts, from your perspective of the Parks Board.

Mr. RAMMUTLA. Thank you very much, sir, for giving me this chance. I will talk not only from the part of being a Parks Board representative, but I will talk from the part of being a citizen and born in the rural poor areas of South Africa and the experience that goes with that and the opportunity that has been given to us to go through and manage the system itself.

First, I would like to start by highlighting the position of the U.S.A. itself. I think what we are trying to say here is there is no way to interfere with the sovereignty of this country to determine what they are regarding as their right to import, to export and everything like that. But if we look at the United States itself, I think the United States is one of the best countries which is upholding the independence and the sovereignty of other countries, and that has been demonstrated in many different ways. If you take the war, for example, in Kuwait between Kuwait and Iraq, the involvement of the U.S.A. there, but I will come back to the realities now.

What we are arguing about is that the situation on the ground is that unilateral decisions are taken of what should be listed and what should not be delisted from the least of endangered species, according to the ESA. And we say participation consultation, it's not actually happening well but if we really recognize the independence and the sovereignty of countries and the ability within those countries to actually manage their resources properly, I believe that we can be given a chance actually to determine how the people should interface with wildlife on the ground. That is the basis of the whole thing.

Previous presentations that took place here were actually a testimony to our case whereby some statements in the United States are arguing for more autonomy in their relationship with Federal agents. If the United States is experiencing that relationship between each State and the Federal agencies, what about other international countries? We are here to appeal to the Senate itself to please relook at the Act itself, that it should allow strong flexibility because when you leave it for the administrators actually to decide,

it can be said that there is a lot of permits that have been allowed to import all those trophies. But there is a very clear sign that even the Federal judge will actually intervene in the relationship, Mr. Chairman, in the previous testimonies about the forest in the United States. Actually, the Federal agency was actually requested to get out of the system there.

We are experiencing some problems irrespective of what is contained in that Act. Our suggestions today are very clear and straightforward, that the Act is impinging on the sovereignty of those States, and we believe that if you look at the populations of all those species that are claimed to be endangered without the consultation of those countries, the population is stable, they are growing and utilization is taking place. We believe that more flexibility should be built up into that to encourage it so that we can improve the core existence of those wild animals and the people that are actually in those rural areas.

At this point in time, we are deciding these issues in beautiful big buildings—here, for example, in Washington, DC. But back home poor people as we are talking, their livestocks are taken by leopards, they are taken by lions, they are taken by other species that we're talking about here, their crops are raided by buffaloes, they are raided by elephants, and we here are not experiencing the pain that is being experienced there.

I was privileged this week to look at the documentation on one of your channels, and the problem that was discussed—there was the mountain lion, and there was a question that was asked, is the problem the mountain lion or the growing population of people encroaching on its habitat? Those are some of the problems that the United States is having, but back home it's even more because people are tied in the spiral of poverty that they need to escape. One of the routes to escape there is to be able to live competitively with wildlife on the ground.

Thank you.

Senator KEMPTHORNE. All right, Mr. Director, thank you.

Just to continue this for a moment, Mr. Kasere, I noted in your testimony statement that really caught my eye you said, and I'm quoting:

> We are a people battling to find lasting solutions of dealing with elephants and other dangerous species which are constantly testing the speed of our children, and to generate a few dollars to cushion our cost of recovering decomposing bodies of those children whose speed is not good enough.

I suppose this is in line with what the other gentlemen from the neighboring country are saying, but any other aspect to that?

Mr. KASERE. Yes, Senator, and thank you for commenting on that note. In fact, I am greatly touched by the comments that have already been passed by Dr. Grandy. I am overwhelmed by those comments, and, to be honest, I feel that conservation should have a human face, and without a human face there is very little that actually will try to protect wildlife extinction because it is the people who live with those resources. You are talking about a continent which is a very poor continent which has a critical shortage of land, and that land alone is trying to generate income for both human beings as well as conserve wildlife, so this is the central point.

I do not know, Mr. Senator, but I strongly feel that if your media here in the States was to highlight sufficiently to you the number of people who are killed every day, the number of children who lose their lives because they are not fast enough—I came as the deputy director of the CAMPFIRE program, and I can do absolutely nothing. We can't even compensate those people, but the only thing that we can do is probably to list one out of every 100 elephants as an animal control elephant that can be killed just to afford the people whose children have been killed in the process. If that single elephant alone can do this—we know the U.S. dollar is strong, and what we are requesting is very, very little and that goes a long way to sustaining our people.

Thank you.

Senator KEMPTHORNE. All right, Dr. Grandy, let me turn to you. You state in your written testimony that CITES is not properly implemented and enforced. You go on to say, and I quote:

> We cannot rely on exporting countries to make proper science-based findings, that the export of endangered and threatened species will not have a detrimental impact on wild populations.

Dr. GRANDY. In a great many countries that's absolutely correct, Mr. Chairman. The fact is that a great many countries don't even have basic scientific authorities, and that's a matter of record before the CITES administrative body.

Let me go back and comment on a few things because there are a lot of issues that are floating around here, and let me start with one point based on the comments I've just heard.

The California mountain lion or the mountain lion in the west is a good example. In many States we have trophy hunting of mountain lions, but it doesn't stop depredations by some mountain lions. The fact is that trophy hunting programs are aimed at generating income for trophy hunting outfitters and things like that. They're not aimed at stopping problem animals in problem situations. Obviously, communities where those problems exist have to deal with those problems on a case-by-case basis, and we would certainly urge them to do so.

The point that I wish to make about CAMPFIRE and the other programs is that those programs are being subsidized by U.S. taxpayers. If our taxpayers had a firm knowledge base that they were sending $2 million to Zimbabwe to help develop trophy hunting programs, I frankly think there would be a public outcry over that. Indeed, our taxpayers have said time and time again if we can pay people to learn to kill wildlife, we can pay them to learn to save it.

One the speakers mentioned the $55 figure as an annual income. Poverty is a terribly distressing thing, but we're not going to balance national economies on the backs of cheetahs for nations of people who only are making $55 a year. What we need to encourage through our U.S. aid programs—through organizations like The Humane Society of the United States, Humane Society International, World Wildlife Fund and others—is the development of truly sustainable-use programs that capitalize on the value of living animals, not on dead ones. We're not going to help people by encouraging them to kill off their wildlife for short-term economic

benefit without the infrastructure to retain it and to manage it, and that's really what's being discussed here.

Finally, the last point that's been made is time and time again we've heard, pleas that these countries wish to export animals and for us to allow the importation of animals into the United States. I remind you of the figures that were in my testimony that of the endangered and threatened species that were imported into the United States last year, numbering about 1,300, fully 700 of those came from the four countries that are here and have talked to us about relaxing the restrictions of the Endangered Species Act. I submit that plenty of animals are getting in now, and that if anything, those restrictions need to be strengthened and not relaxed.

Thank you, Mr. Chairman.

Senator KEMPTHORNE. All right, Dr. Grandy, thank you very much.

Ms. Hemley, a question for you—you testified that the World Wildlife Fund would oppose changes to the international provisions of the Act. Do you believe that the United States should be able to overrule the local concerns of nations such as Namibia and Zimbabwe?

Ms. HEMLEY. We do think the Act as it stands and its international provisions are very sound. I think it's important to emphasize that the ESA only affects commerce and products imported from those nations, as I outlined in my statement. But there is a widely varying ability of countries to control exports, and we've seen it all over the world. Southern Africa has some of the best programs, but the United States needs to maintain the ability to take stricter measures when it's warranted. Too often we have seen problems get out of control because of political instability and for other reasons, and we have effectively used our measures, as have many other importing countries, to stem what would be the decline of species that could be suddenly hit by poaching epidemics and other problems.

Senator KEMPTHORNE. Are you persuaded by the testimony of our friends from Africa?

Ms. HEMLEY. We are very sympathetic to their concerns. As I said, we support the programs in those countries. The United States has provided a large market for their products, that I think has shown the flexibility of the Act to accommodate particular areas of use and wildlife trade where it serves conservation purposes. So I do think there has been a good balance struck, and we would always support looking for measures to make sure that what we do in the United States does not undermine those programs in those countries, certainly.

Senator KEMPTHORNE. OK, thank you.

Dr. Grandy, correct me—did you say that it would take 3 days to get an import permit?

Dr. GRANDY. I said that that's documented and has been documented as having happened in the Fish and Wildlife Service.

Senator KEMPTHORNE. OK.

Dr. GRANDY. I'm sure that the number of days varies on a case-by-case basis.

Senator KEMPTHORNE. Mr. Cilek, in your experience have you ever——

Mr. CILEK. No, but I would sure like that phone number.

[Laughter.]

Senator KEMPTHORNE. I think that's a good place for us to stop, and this has been very helpful. It's an aspect for the Endangered Species Act that I think perhaps has not had as much attention, but on the permitting it's critically important and with regard to its impact on other countries. I appreciate the testimony that you have given us. This is something that helps us now in viewing this whole thing, and I appreciate very much the distance you have come because I have been to Eritrea and to Somalia so I have some idea of the distance you've had to travel.

Mr. DIRECTOR.

Mr. KASERE. We appreciate our presence here.

Senator KEMPTHORNE. Thank you very much, and, again, we thank all of you and if you have additional thoughts, please provide them to us.

This hearing is now adjourned.

[Whereupon, at 12:55 p.m., the subcommittee adjourned, to reconvene at the call of the Chair.]

[Additional statements for the record follow:]

STATEMENT OF MOLLIE BEATTIE, DIRECTOR, FISH AND WILDLIFE SERVICE, DEPARTMENT OF THE INTERIOR

Mr. Chairman, thank you for the opportunity to appear before the Subcommittee on Drinking Water, Fisheries and Wildlife to discuss the Fish and Wildlife Service's (Service) role in the implementation of the Endangered Species Act (ESA).

When Congress passed the Endangered Species Act 22 years ago, it initiated one of the most important environmental programs in the Nation's history. The ESA established a set of protective measures that have contributed to the survival of species important to our living natural heritage like the bald eagle, the peregrine falcon, and the Aleutian Canada goose. These species might not be with us today but for this visionary law. Yet the ESA has a broader focus than individual species; it is equally concerned with habitat. Over 200 years of human development has altered natural ecosystems in every part of this country as well as certain countries abroad. The obscure endangered species that are often caricatured in editorial cartoons are symptoms of this alteration and loss of habitat. They are the smoke alarm that warns us that our home is on fire, because we also depend on the environment that supports our fellow species.

I would like to focus the rest of my remarks on the issues addressed in the Subcommittee's letter of invitation—recovery, downlisting and delisting, and international issues.

RECOVERY, DOWNLISTING, AND DELISTING

An immediate goal of the Act and a central focus for the Service is preventing species from becoming extinct. Our longer term goal is to recover species and remove them from the list of threatened and endangered species. Recovery is achieved when the decline of a listed species is reversed and it becomes a self-sustaining component of its ecosystem that no longer requires the protection of the Act. Species such as the whooping crane, the black-footed ferret and the American alligator are dramatic examples of the success that can result from a long-term commitment of resources and hard work. In fact, populations of well over 200 threatened and endangered species are now either stable or increasing under the Act's protection. Another measure of the success of the Act is the number out of the over 900 listed U.S. species that would no longer exist but for the efforts undertaken under the ESA's auspices. This number, although impossible to ascertain, is probably in the hundreds.

After a species is listed, the Service develops a recovery plan to give priority to species most likely to benefit from such a plan and particularly those that are or could be in conflict with construction or some other form of economic development. A recovery plan must contain objective, measurable criteria that when met will allow the species to be delisted. The recovery plan must also contain estimates of the costs and time required to carry out these objectives.

The Act also requires that once a species has been delisted, it is monitored to ensure that it has truly been returned to a sustainable condition. The Act stipulates that this monitoring be carried out in cooperation with the States, recognizing their primary stewardship role in managing resident species.

Numerous tools are available for the recovery of species, including: reintroductions of species into formerly occupied habitat; land acquisition; captive propagation; habitat protection; research; and proactive conservation. In addition, under section 7(a)(1) of the ESA all Federal agencies are directed to utilize their authorities in furtherance of the purposes of the Act to carry out programs for the conservation of threatened and endangered species. Last September, 14 Federal agencies signed a formal agreement to improve their implementation of the Act toward conservation of species with sensibility to economic and social conditions. The agreement is designed to help avoid conflicts and to increase the effectiveness of Federal recovery actions for endangered species.

The Department of the Interior has been working diligently over the past 3 years to improve the implementation of the ESA. As part of these dramatic changes to the administration's endangered species program, improvements in the candidate conservation or prelisting recovery have lead the initiative. These listing prevention activities are designed to reduce the threats a species, known to be in decline, faces in order to avoid the need to list the species—thus recovery occurs *before* listing. Actions may be as simple as building a fence to protect habitat from being used by cattle or as challenging as the development of an interagency management plan.

In January of last year, the FWS, along with the National Marine Fisheries Service (NMFS), Forest Service, Bureau of Land Management, and National Park Service entered into a Memorandum of Understanding (MOU) promoting the conservation of candidate species. The purpose of this MOU is to establish a general framework for cooperation and participation among all affected interests and agencies for the conservation of species that are declining and may require listing under the ESA. The Service also cooperates with private landowners and States to protect species before they need to be listed. Most recently, the FWS entered into a cooperative agreement to protect the Arizona willow with the Forest Service, the National Park Service, the Arizona Game and Fish Department, the White Mountain Apache Nation, and other affected land owners. Proactive efforts such as these benefit not only the species but the landowners as well.

Last July, the FWS and NMFS released joint policies to improve the recovery process. These policies require minimization of social and economic impacts, broader participation, and independent scientific peer review of draft recovery plans. In addition, wherever possible, both FWS and NMFS are developing multispecies recovery plans and have established a goal of developing recovery plans within 2½ years of a species being listed in order to ease any economic burdens.

Also, as part of the administration's 10 point plan released March 6, 1995, the Secretary of the Interior announced Congress could ensure that recovery planning:

- articulates definitive recovery objectives for populations (including levels that would initiate downlisting or delisting) based on the best available scientific information and the other requirements of the ESA;
- provides all jurisdictional entities and stakeholders an opportunity to participate in development and implementation of the plan;
- allow States to assume the lead responsibility for developing recovery plans;
- seeks to minimize any social or economic impacts that may result from implementation;
- emphasizes multi-species, habitat-based approaches;
- is exempted from NEPA if the planning process is equivalent to that required by NEPA;
- facilitates integration of natural resource and land management programs at all jurisdictional levels; and
- identifies specific activities or geographic areas that are exempt from or that will not be affected by the section 9 prohibitions of the ESA concerning "take" of species covered by a plan.

We believe that the Congress could improve the recovery planning process under the ESA by requiring all appropriate State and Federal agencies to develop one or more specific agreements to implement a recovery plan. Upon approval of an implementation agreement by each of the appropriate State and Federal agencies which recognize the need to comply with the provisions of other applicable laws, including NEPA, the National Forest Management Act and FLPMA, the agreement should be legally binding and incorporated into the recovery plan. Under this proposal, recovery plans and implementing agreements could be reviewed and updated on a regular basis. An incentive could be created for Federal agencies to approve implementa-

tion agreements by providing an easier, quicker section 7 process. Such implementation agreements should:

- expedite and provide assurances concerning the outcome of interagency consultations under section 7 and habitat conservation planning under section 10 of the ESA,
- ensure that actions taken pursuant to the agreement meet or exceed the requirements of the ESA;
- require that each appropriate agency that signs an agreement comply with its terms;
- designation of any critical habitat should occur concurrently with recovery plan approval, rather than the current requirement that it be designated at the time of listing.

Prompt downlisting and delisting. Prompt downlisting and delisting of species when warranted are critical to the success of the ESA. The Congress could give these actions emphasis equal to that of listing. Specifically:

- Downlisting or uplisting could be done administratively based on criteria in a recovery plan that meet the standards of the ESA and should not be subject to the current process required for listing, delisting and changes in status of a species.
- The delisting process could be triggered when the criteria established by a recovery plan are met.

I would like to stress that delisting is the ultimate goal for any species on the endangered species list. While we have witnessed the delisting of some species and the downlisting of many more, critics of the Act say we are not recovering enough species. Given that most species that are listed as threatened or endangered have been put at risk as a consequence of environmental decline that has taken place over a century or more, 25 years is not sufficient time to evaluate success simply by how many species have been removed from the list. Of the 106 species that were listed at the time the ESA was passed 58 percent are now recovering. Conversely, of the species that were listed since 1993, only 6 percent have received sufficient recovery efforts to begin the journey back from the brink of extinction.

For listed species that are increasing in population size and whose populations have been stabilized, significant information regarding the success of the Endangered Species Program is evident. For all of these species (over 300 or about a third of all listed species) the Service has been successful in averting their extinction. When one considers the tremendous increases in species for which the Service is responsible—106 species were listed in 1973 and by mid–1995 that number had increased to 962 domestic species—the success of the program can be more fully appreciated.

Our ability to both prevent species from being listed, and recover those which are listed is based upon the presence of adequate funding for the ESA. The Department is extremely concerned over proposals by Congress to reduce the budget for endangered species. Rather than adopt the administration's proposal to increase funds for recovery, the House proposes to reduce recovery funds below this years funding. This in concert with the House's zeroing out funds for listing prevention activities will severely impact the Service's efforts to both prevent species, such as the bull trout, from being listed and will endanger our efforts to recover listed species such as the California condor and the gray wolf. Species already in trouble will become more endangered and some may even go extinct. Ultimately without adequate funding, the price to recover species will become both more costly and we will have less flexibility to work creatively with affected parties.

I am proud of the recovery accomplishments that have been made since the ESA was enacted in 1973. In fact, populations of well over 200 threatened or endangered species are now either stable or increasing because of the Act's protection. I believe our willingness to conserve these species reflects the deep love and appreciation Americans hold for the richness and beauty of the natural world, and an inherent understanding that the fate of wildlife and humans alike is linked to the well-being of the environment about us.

INTERNATIONAL PROVISIONS OF THE ENDANGERED SPECIES ACT

The United States is the world is largest consumer of fish, wildlife and plants, and many of these species are imported from other countries. In addition, the American public has a deep concern about the fate of species beyond our borders. For these reasons, provisions recognizing endangered species worldwide became an integral part of the Endangered Species Conservation Act of 1969. These provisions were expanded into a broad-based international conservation program with the enactment of the 1973 law.

We believe the international provisions of the Endangered Species Act are even more important today, given the condition of the world's wildlife and natural habitats. Just last week, on the floor of the House of Representatives, the Speaker of the House and many of his colleagues from both parties gave eloquent statements on the reasons why elephants, rhinos, and tigers are—and should be—of special importance to the American people, as international symbols of the world's vanishing biological diversity. The inclusion of elephants, rhinos and tigers on the U.S. list of endangered and threatened wildlife and plants emphasizes the importance of maintaining biodiversity in other countries, with all of the scientific, aesthetic, social, biomedical, and economic values which these species represent.

The Endangered Species Act provides both for the implementation of CITES (the Convention on International Trade in Endangered Species) and the full integration of foreign species into the U.S. list of endangered and threatened species.

CITES was enacted because the trade in endangered and threatened fauna and flora threatened the existence of many of the world's most beloved species. Currently 128 nations are parties to CITES, making it one of the largest and fastest growing treaties. Section 8A of the Act designates the Department of Interior as the U.S. Management Authority and Scientific Authority for CITES. In fulfilling our responsibilities as Management Authority and Scientific Authority, we work closely with our colleagues in the Departments of State, Commerce, Agriculture, Justice, the U.S. Trade Representative's Office and other departments, as well as with the CITES Secretariat in Switzerland, other national and international conservation organizations, and most importantly, the other 128 countries which are also parties to CITES.

Our principal goals in implementing CITES are to provide international leadership for the protection of species threatened with extinction (species listed in CITES Appendix I), and to encourage the *sustainable* utilization of other species which are not now endangered or threatened, but which might become so unless trade is regulated (species in CITES Appendix II). To fulfill these goals, the Service has been active in CITES leadership for many years, serving on the CITES Standing Committee (the CITES executive body) continuously since 1987, and chairing it from 1987–1989. We have also chaired the Working Group on Transport of Live Animals; participated actively in the CITES Animals and Plants Committees; encouraged studies of heavily traded species to assess their status; assisted the CITES Secretariat with training courses on almost every continent; and most recently, hosted the Ninth Meeting of the CITES Conference of the Parties in 1994 in Fort Lauderdale. Now we are preparing to provide technical assistance to Zimbabwe, which will host the next CITES Conference in 1997 at Victoria Falls.

The regulatory aspects of CITES listing and permit administration within this country are closely interwoven with listing and permit provisions of the Act for foreign listed species, and therefore, I would like to address these provisions together. For foreign species, our list of endangered species under the Act approximately corresponds to CITES Appendix I (which includes species "threatened with extinction" for which trade is one of the threats); species listed as threatened under the Act overlap with CITES Appendix I and Appendix II.

One of our objectives in carrying out our programs under the Act and CITES is to harmonize, to the maximum extent legally and biologically possible, the listing of species on the CITES Appendices with the listing of species as endangered or threatened under the Act. The vast majority of listed species in fact are very similar in their listing status under the two authorities. However, there are a few situations where these classifications do not correspond. In some cases, the differences exist only because we have not yet had time to make the appropriate adjustments to the list of endangered wildlife and plants. CITES listing changes are made in large numbers every 2 to 3 years at meetings of the Conference of the Parties. Because our international staff is small and the workload is large, it sometimes takes us longer than some range countries would like to complete our internal review of CITES actions and publish the proposed and final rules necessary to effect changes to the lists published under the Act.

On the other hand, there are also a few situations where we have decided that a different status is warranted under the Act than that given to a species on the CITES Appendices. CITES lists only species which are, or may be, threatened by trade, and not even all of those; however, the Act provides broader authority for us to list species which are endangered or threatened, regardless of the cause. Furthermore, CITES decisions of necessity often represent compromises, since it takes a two-thirds vote of the parties to effect a listing, downlisting, or delisting.

The gyrfalcon, for example, is listed in CITES Appendix I, but we do not believe it is endangered or threatened, and so it purposely remains absent from our lists under the Act. In contrast, three of the large species of kangaroos in Australia were

never listed in the CITES Appendices, but they were listed as threatened species under the Act due to concerns about their overexploitation. Since then, the responsible Australian states have greatly improved their management of the species, and earlier this year we were able to delist all three species entirely from the list of threatened species. This is a case where we believe unilateral U.S. action was both appropriate and effective in helping to achieve the conservation of the species.

All decisions about listing species under the Act are made only after consultation with the affected range country or countries and consideration of all of the five factors specified in section 4 of the Act. These decisions are not easy, and communication barriers across international borders may make it even more difficult for us to understand the true situation in another country. We are now working to fulfill commitments made during the CITES Conference in Fort Lauderdale last year to enhance our communications with other countries and our consideration of their views in all of our activities, including the listing of species under the Act.

The listing of species, whether under the Act or on the CITES Appendices, is only the first step in the process designed to help ensure that residents of the United States—and in some cases Americans operating overseas—do not engage in activities which further contribute to the endangerment of species. Among the prohibitions and exception included in Sections 9 and 10 of the Act are provisions which specifically address the needs of foreign species. CITES itself only addresses international trade; it has no effect on activities entirely within the United States or any other country. Listing of a species under the Act, however, brings to it additional protections which CITES does not provide. The most important of these provisions include:

(1) a prohibition on interstate commerce in listed species (for example, U.S. mail order companies cannot sell tiger skin coats or tiger bone medicines);

(2) a prohibition on foreign commerce in listed species by U.S. citizens or companies (for example, Americans cannot serve as middlemen in the illegal trade in chimpanzees from Africa to Europe or Asia);

(3) for endangered species, the application of more stringent conditions than CITES for imports of wild-caught animals (for example, giant pandas may be imported into the U.S. from China only if the import is directly linked to projects enhancing the species in the wild, whereas CITES only requires a finding that the trade is not detrimental to the species, with no affirmative conservation obligation);

(4) for threatened species, the flexibility to develop special rules which concentrate only on those activities which need regulation to protect the species (for example, the African elephant special rule implements the U.S. ivory import ban, but makes an exception for sport-hunted trophies from countries with a conservation program enhancing the survival of the species).

Finally, to implement the protections provided by CITES and the Act—as well as other laws like the Marine Mammal Protection Act and the Wild Bird Conservation Act—the Service administers a permits program to regulate import, export, and interstate commerce. The Service's goals in administering this program are to foster activities which will enhance the conservation of species, and to prevent activities which will be detrimental or disadvantageous to the species, while imposing the minimum possible burden on the public.

These goals are not always easy to reconcile. The Service receives nearly 5,000 permit applications per year at its Office of Management Authority in Arlington, and several thousand more applications are handled at the Service's designated ports of entry. The vast majority of our permit applicants receive their permits within our target timeframe of 60 to 90 days, depending on the permit type. Within the past year, streamlining of the system has actually cut the average time for processing simpler permits from 40 days to 20 days. Delays usually are the result of incomplete applications or the need to work with the applicant on proposed activities which do not meet appear to meet issuance criteria, but which often can be modified so that they eventually can be issued.

In recent years, the Service has adopted a number of improvements to the permits system designed to reduce the paperwork burden on the public and increase our ability to focus our resources on the most difficult applications. Some of these improvements include:

(1) establishment of a toll-free permits information number, and now a fax-back system and an information service via the internet to immediately respond to information requests;

(2) increased availability of CITES Appendix II export and reexport permits with expedited processing at ports of entry (with special provisions for expedited permits for black bear trophies from Alaska since the 1992 listing of the species);

(3) development of new supervisory controls and computer tracking systems (for example, automatic flagging of all applications more than 30 days old);

(4) issuance of standing advice for broad classes of permits which preclude the need for individual biological reviews (for example, applications for sport-hunted elephant trophies from South African countries which have proven conservation programs);

(5) deregulation of controls on interstate commerce in captive-bred individuals of certain species which are bred in captivity within the United States in large numbers;

(6) extension of the duration of permits to the maximum extent possible (but CITES permits must leave mandatory expiration dates specified by the treaty itself).

These changes have helped to significantly improve our system, and we are now evaluating further changes as part of the Vice President's initiative to reinvent our government services and streamline the costs to the taxpayer and the burden on the public. Improving our permits system is a process which never stops, and we will be pleased to consider constructive suggestions to further streamline our system where they are consistent with the law and the conservation needs of the species.

Our greatest responsibilities for endangered species continue to be for wildlife inside our own borders, just as the greatest share of the responsibility for the fate of endangered species in other countries still remains with those countries. In fact, our investment in international programs is a very small part of the overall Fish and Wildlife Service budget. For fiscal year 1995, the entire international budget equalled to about 1 percent of the total Fish and Wildlife Service Budget. Furthermore, our efforts are more than matched by contributions from the other countries which are our partners in these programs, as we require that they make commitments of their own resources which at least double, and often triple or quadruple, our own investments.

Section 8 of the ESA authorizes the use of foreign currencies accruing to the United States under the Agricultural Trade Development and Assistance Act to benefit threatened and endangered species listed by the Secretary. This program is operated at almost no cost to U.S. taxpayers. The Foreign currency authority enables the Service to encourage training, management, and research programs for various species throughout the world. Using Indian rupees owed to this country, we have enhanced the conservation programs for the Bengal tiger, Siberian crane, and many other species in India. Indian rupees are not convertible into U.S. dollars; instead, we are converting them within India into remarkable wildlife conservation benefits.

Section 8 also provides authorization for international bilateral and multilateral agreements, as well as encouragement of foreign conservation, research, and law enforcement. Under this authority, the Service has conducted bilateral conservation programs for a number of years with Russia, China, and Mexico, benefiting many endangered and threatened species, migratory birds, marine mammals, and fisheries in all of our respective countries.

In conclusion, I would like to say that our willingness to conserve species reflects the deep appreciation Americans hold for the richness and beauty of the natural world, and an inherent understanding that the fate of wildlife and humans, both here and abroad, is linked to the well-being of our environment. I believe that our stewardship of the earth's resources today should ensure that future generations will not be left to view species such as the gray wolf or tiger only in zoos or museums.

A majority of Americans support saving endangered species. With the reforms suggested by the administration, the law is and can work even better. As the Congress moves toward reauthorization of the ESA, let's make sure that our goal continues to be putting out the fire—not simply disconnecting the smoke detector.

Rec. 11/29

United States Department of the Interior

FISH AND WILDLIFE SERVICE
WASHINGTON, D.C. 20240

ADDRESS ONLY THE DIRECTOR,
FISH AND WILDLIFE SERVICE

OCT 31 1995

In Reply Refer To:
FWS/LE LEG 3-019105

Honorable John H. Chafee
Chairman, Environment and Public Works
United States Senate
Washington, D.C. 20510-6175

Dear Mr. Chairman:

Enclosed are the Fish and Wildlife Service's responses to the questions submitted by Senator Mitch McConnell on the Bear Protection Act following the July 20, 1995, hearing before the Subcommittee on Drinking Water, Fisheries and Wildlife, regarding reauthorization of the Endangered Species Act and International Issues.

We appreciate the opportunity to provide this information. Please let us know if you need additional information.

Sincerely,

Deputy DIRECTOR

Enclosure

RESPONSES BY THE FISH AND WILDLIFE SERVICE TO QUESTIONS ON S. 968, THE BEAR PROTECTION ACT

Question 1. In a statement made by John Doggett, the Chief Law Enforcement official within the Fish and Wildlife Service, he estimated that 40,000 bears are poached annually: how effective has the Fish and Wildlife Service been in putting a stop to this activity?

Answer. The figure of 40,000 bears taken annually refers to the number of bears *legally* killed in the United States and Canada every year, not the estimated number of bears poached. This figure comes from a 1992 Division of Law Enforcement study of the bear parts trade. The Fish and Wildlife Service has not documented the figure of 40,000 bears poached annually, and reference to poaching must have been a misinterpretation of Mr. Doggett's comments. This figure is useful when comparing legal harvest to the total U.S./Canada black bear population of between 590,000 and 630,000 black bears (1992). The Service does not ordinarily maintain figures on black bear poaching (unless an investigation is initiated by the Service) since they are a species managed primarily by the States. The figure of 40,000 was used by John Doggett in illustrating the potential number of bear parts available for *lawful* trade in North America.

Question 2. Please inform the Subcommittee what evidence you have of poachers killing bears for their parts.

Answer. Investigations have been conducted by the Fish and Wildlife Service regarding poaching, and our analysis of the situation does not indicate that there is widespread poaching for bear parts.

Currently, there exists the widespread perception of illegal trade in American black bear gallbladders and other parts to supply the Asian medicinal market. An analysis of this perceived trade conducted by the Service's Division of Law Enforcement, included interviews with United States and Canadian law enforcement personnel, and a critical evaluation of all current intelligence information on this subject. Analysis of the information gathered does not support the perception of widespread poaching of black bears for viscera and parts. This topic has received intense media coverage in various press articles and television, and has been supported by the conservation community due, in part, to the 1990 World Wildlife Fund/Traffic Report entitled Asian Trade in Bears and Bear Parts. The perception of a threat to North American bear populations has been furthered by the listing of black bear under Appendix II of CITES, due to its similarity of appearance with endangered bear species found in Asia. The listing of the American black bear under CITES is not due to its conservation needs in the U.S.

The assumption is made by the conservation community and the media, that due to the intense trade in Asian bear parts and the severe decline of Asian bears, that the black bear population of North America is threatened by increasing demand for its parts. No direct evidence of this assumption has been documented through Service investigations. This is not to say that trade in bear parts does not occur. In many instances trade in bear parts is lawful, or does not involve poaching. The Service has no evidence of this perceived threat being of the magnitude portrayed in the media and by conservation groups.

Question 3. What investigations have the Fish and Wildlife Service done to protect U.S. bear populations against poaching, and what are the findings of these investigations?

Answer. The Service has conducted 24 investigations since 1985 involving bear poaching. These investigations have found that bear poaching activity is not driven solely by the Asian medicinal market. Sale of bear galls does occur, but this activity appears to be more a byproduct of the taking and does not motivate the taking itself. Many of the bear galls purchased in undercover investigations are from lawfully killed bears, and in some instances, galls are misrepresented as coming from bears, when in fact, they come from a variety of different animals. Bear viscera is difficult to distinguish from other types of animal viscera unless subjected to laboratory analysis. Service investigations have found that bears are killed, both lawfully and unlawfully, for a variety of reasons, with trophy hunting being the principal cause. Motives such as meat hunting, sport hunting, hunting for bear hides, or hunting with no other specific intent at all have been documented in Service investigations. Existing law adequately addresses those instances where bears are killed unlawfully for parts or for other reasons.

In four undercover investigations conducted between 1985 and 1990, 24 percent of the total number of "bear galls" purchased were determined to be from an animal other than bear (mainly pigs). The Clark R. Bavin National Fish and Wildlife Forensic Laboratory in Ashland, Oregon, reported recently (July 1995) that 48 percent of

galls submitted for analysis over the past several years belonged to animals other than bears.

There is a strong likelihood that many of the bears from which galls were sold were lawfully taken. If, however, all of the true bear galls purchased in the four investigations mentioned were assumed to be from unlawfully taken bears, they would still only account for less than 2 percent of the average North American black bear harvest each year. Even though the *sale* of the galls in these cases was in violation of existing law, the Service does not feel that the desire for bear viscera is driving any significant *poaching* activity.

Question 4. I am very interested in two undercover operations undertaken by Federal and State wildlife agents. One was "Operation Smokey" and the other "Operation Asian Ursus", which uncovered a scheme to bring hunters from South Korea to California to hunt bears. Can you provide details for the Subcommittee on what was uncovered by these investigations?

Answer. Operation Smokey was a covert investigation in the southeast United States conducted from 1986 through 1988. The investigation was a collaboration between the States of Tennessee, North Carolina, and South Carolina, and the Fish and Wildlife Service, and the National Park Service. The investigation uncovered widespread bear poaching in several States and in Great Smoky Mountains National Park. Of the 110 defendants charged federally, 66 pled guilty, or were found guilty at trial of violating or conspiring to violate the Lacey Act by entering unlawfully taken bears and their parts into interstate commerce. Sentences of these 66 individuals totaled over $137,000 in fines and over 8,000 days in jail.

According to the Special Agent responsible for Operation Smokey, bear poaching in this investigation was not motivated by the desire to sell bear parts to the Asian medicinal market. Black bears were killed for many reasons, as previously stated, with trophy hunting being the primary cause. Of the 110 Federal defendants, three were Asian and were actively seeking bear galls. Ten hunters said they were dealing in gall bladders, and virtually all of the bear hunters were aware that bear parts had some independent value. In Operation Smokey bear parts were sold by defendants as a collateral activity. Bears would have been poached regardless of the ability to sell various parts of the bear.

Operation Asian Ursus was an investigation conducted by the California Department of Fish and Game between October 1993 and June 1994. The investigation focused on the operation of the Ace Hunting Club located in Los Angeles County. The main defendant, and proprietor of the Club, would advertise in Asian language newspapers, both in the U.S. and Asia, for hunters wanting to hunt black bear in California. Residents of China and South Korea would respond to the ad, and with the help of the Ace Hunting Club, obtain fraudulent Hunter Safety Cards required to purchase a resident California hunting license. Using a fraudulent address in Los Angeles, the foreign hunters would obtain resident licenses. The investigation used existing State law to prosecute defendants, including, a State felony statute making it unlawful to sell bear parts regardless of origin.

Although the Service was aware of the investigation, no assistance was requested from Service Special Agents. For specific investigative results, we ask that you contact the California Fish and Game Department directly.

Question 5. Also, have these investigations been successful in reducing poaching or the illegal trade in bear parts?

Answer. Yes. Past investigations have succeeded by relying upon existing law to prosecute defendants. Poaching and illegal wildlife commercialization are, in most cases, of a local nature and are conducted by groups of individuals who may have a significant impact on localized wildlife populations. The impact of these unlawful activities is difficult to quantify.

The impact on numbers of a particular species from poaching will vary greatly depending upon the size of the area considered. Apprehension of these unlawful groups will always benefit local wildlife populations regardless of the motive for the illegal taking. The benefit of these investigations may be in deterring other individuals from engaging in similar illegal activity, whose cumulative effect could be devastating.

It is encouraging to note that of the 37 States with black bear populations surveyed in the study conducted by the Division of Law Enforcement, 54 percent reported having stable black bear populations, while 32 percent reported their bear populations increasing. Only 20 percent of States with black bear populations felt that illegal hunting, of any kind, reduced the number of bears available for sport hunters. The deterrent effect of past investigations such as those mentioned is at least partly responsible for these encouraging numbers.

Question 6. Please tell the Subcommittee what your agency has learned about the magnitude of this poaching problem. Specifically, what is driving this activity?

Answer. Service investigations have found that bears are more likely to be poached for a trophy than they are for sale of parts. Bears are taken unlawfully for a variety of reasons, including for meat, or hides. However, the unlawful sale of bear viscera is seen by the Fish and Wildlife Service as a collateral activity that does not motivate the taking of the bear itself. Rather than discard parts of bear viscera, galls are saved for potential sale at a later date. It is important to distinguish between the unlawful sale of bear galls and the unlawful taking of bears.

To a limited extent, the unlawful sale of bear galls does occur and constitutes a legitimate enforcement concern. However, whether the bear was taken primarily to obtain the gall is in question. For instance, some bears are lawfully taken by sport hunters and the gall is saved rather than being discarded because it may potentially be sold at a later date, perhaps unlawfully. The bear would have been killed regardless. If a bear is killed unlawfully, whether to gain access to the gall or not, it will be investigated and prosecuted under existing law. The Service has no evidence of a widespread poaching problem being motivated by the sale of bear viscera. The Division of Law Enforcement views this subject as an issue of poaching, rather than one of commercialization of black bear viscera.

Question 7. How effective has the patchwork of State laws been in reducing or prohibiting the "laundering" of bear parts through States that permit the sale of such items? And, what effect has the Lacey Act had in curtailing such actions?

Answer. The patchwork nature of State laws governing take and sale of black bear is a legitimate concern. It is important to consider that black bear are a "State managed" species. States will enact laws to protect bear populations from commercialization if it is viewed as a concern by the State. Twenty-five States have a black bear hunting season, and six of those States allow the sale of bear viscera, or do not expressly prohibit it. In addition, seven States do not have bear hunting, but allow the sale of bear parts that originate elsewhere. If trading in bear parts is lucrative, the assumption can be made that the 13 States that have no prohibition on sale of bear parts would become a "haven" for bear part dealers and poachers if their activity were not restricted. The Service has no evidence of this being the case. Under current State law, these States could be used as points of origin for the lawful export of bear parts, currently regulated by CITES. Since the black bear was listed under CITES Appendix II in 1992, the Service's Office of Management Authority has only issued three permits for the export of bear parts, and has denied one permit application. It is unlikely that all commercial use of bear parts is done clandestinely when there exists a lawful means to sell and export black bear parts.

The Fish and Wildlife Service cooperates with States in managing wildlife resources nationwide. The Service does not, however, presume to know more about managing the local State's black bear resource than the particular State resource agency. For those States that prohibit various activity involving bear commercialization, the Lacey Act has been a very effective tool in dealing with offenders who enter bear parts into interstate commerce unlawfully. For those States that have chosen not to regulate trade in bear parts, it appears that the resource managers in those States have determined that there is no threat to the resource.

Question 8. Could you tell the Subcommittee how Federal wildlife agents are able to determine if a gallbladder being legally sold in Idaho came from a black bear legally killed in Alaska, or illegally taken from an endangered Louisiana black bear? And, do you have sufficient personnel and budget resources to effectively enforce this?

Answer. Special Agents rely on the expertise at the Clark R. Bavin National Fish and Wildlife Forensics Laboratory, in Ashland, Oregon, to distinguish between bear galls and galls from other animals. But differentiating between bear species, or the origin of the bear species, is difficult and is something the Forensics Lab is currently working on with encouraging results. The latest identification techniques were presented by Lab personnel at the International Symposium on the Trade of Bear Parts for Medicinal Use. The results of a study conducted on bear bile products showed, that of 168 items submitted from Asia for study, only 2 percent of those items actually contained bile from members of the bear family.

In the field, agents cannot tell the difference between galls sold from lawfully or unlawfully taken bears, but the sale of the gall is not the issue that most impacts the bear resource. The taking of the bear unlawfully in Louisiana is the resource issue in the scenario posed. Service Special Agents will vigorously pursue the taking of an endangered species regardless of the motive for the taking, especially if that taking involves commercial activity. Assuming the bear in this scenario was not an endangered species and was killed lawfully, parts of the bear could lawfully be sold

in Idaho or other States as noted. However, the sale of lawfully taken parts is not impacting the bear resource in this scenario. It is the unlawful taking that should be the focus, because unlawful taking most impacts bear populations. This type of poaching investigation would be pursued under existing law regardless of why the bear was killed and entered unlawfully into interstate commerce. Currently, all States where black bears occur in the United States prohibit unlawful take, regardless of motive. If bear parts dealers are motivated to kill more bears for the viscera market, they would be doing so in violation of existing State and Federal laws. If, however, a hunter is motivated to hunt bear to sell the bear's gall, and the bear is lawfully taken, the hunter's motive has no impact on the bear resource.

In order to utilize the Division of Law Enforcement's resources as efficiently as possible, the Fish and Wildlife Service has established investigative priorities for Special Agents to use when making determinations of what cases to actively investigate.

Service investigative priorities place commercialization of Federal trust species at the highest level of priority, above investigations involving species managed solely by the States. Investigations of a commercial nature are, in general, a higher priority than those of a noncommercial nature. Where there has been evidence of wildlife commercialization in violation of Federal law, Service Special Agents have investigated, and we will continue to create an effective deterrent to illegal commercialization of our nation's resources.

Question 9. Please tell the Subcommittee your views on S. 968, the Bear Protection Act, and how this might help Federal and State wildlife officials crackdown on the illegal bear trade.

Answer. Considering the best available information, existing law in the form of the Lacey Act, Endangered Species Act, CITES, Marine Mammal Protection Act, State law, and foreign (principally Canadian) law are adequate to address the illegal bear trade. An unlawfully taken bear cannot currently be imported to or exported from the United States or transported, sold, received, acquired, or purchased in interstate commerce. Fish and Wildlife Service investigations have not been hindered by the lack of adequate legislation. As currently written, the proposed Bear Protection Act will not assist wildlife officials in addressing the illegal bear trade, nor will it strengthen the level of protection currently afforded to bears in North America.

United States Department of the Interior

NATIONAL BIOLOGICAL SURVEY
Idaho Cooperative Fish and Wildlife Research Unit
College of Forestry, Wildlife and Range Sciences
University of Idaho
Moscow, Idaho 83844-1136

August 17, 1995

The Honorable John Chaffee
Rhode Island Senator
US Senate
Washington, DC 20510

Dear Senator:

Thank you for the opportunity to speak before your subcommittee on August 14. I greatly appreciated the opportunity to share with you and other committee members the findings of my colleagues and I concerning the difficult task of recovering threatened and endangered species to non-endangered status. At the conclusion of the hearings, you asked for suggestions on how incentives could be used to encourage protection of species and their habitats.

The Defenders of Wildlife brought together individuals from very diverse backgrounds to address the incentives issue. Copies of their efforts are enclosed. While there were a variety of suggestions made, many found common ground in substantial incentives that would allow for action before issues become front page controversies.

I participated in a dialogue on this same issue that involved the Environmental Defense Fund. Michael Bean of the organization may be contacted at (202) 387-3500 for details concerning that effort.

In reviewing the various proposals in the collection of articles by Hank Fisher and Wendy Hudson, I found the suggestion for the enclosed economic incentives presented by Jim McKinney, Mark Shaffer, and Jeff Olson of the Wilderness Society quite defensible. They identified a series of tax incentives and disincentives that included: properly taxed credits for habitat maintenance, tax credits for habitat improvement, partial tax credit for ESA compliance expenditure by small land owners, income tax deductions for revenue from land managed to support endangered species, tax penalties for habitat conversion, prohibition of the use of federal subsidies and tax benefits for activities causing the loss or degradation of endangered species habitat, and creation of a market for development of important biological habitat. This last one,

I believe, offers tremendous potential. It has been successfully used to avoid conflicts in the Pine Barrens of New Jersey.

If you wish additional details on this issue, I suggest you contact Mark Shaffer of the Nature Conservancy at (703-841-4589). In seeking incentives to gain greater participation by the private sector in protecting endangered species and more importantly, preventing species from becoming endangered, we must ensure a great deal of flexibility in our actions before a crisis develops. Additionally, the program must be voluntary.

I hope that the enclosed material is useful to you. Again, thanks for allowing me to testify before your subcommittee on.

If I can answer any questions, please contact me at 208-885-6336 or fax 208-885-9080, or e-mail at mscott@uidaho.edu.

Sincerely,

J. Michael Scott

J. Michael Scott
Unit Leader

enclosures

Note: The full report is held in Committee files.

sm/scotlet/Chafetks doc

The following is a draft of the Executive Summary from **Defenders of Wildlife's** upcoming publication *HELPING THE ENDANGERED SPECIES ACT WORK: Private Lands Solutions.*

EXECUTIVE SUMMARY

During 1994 and 1995 Defenders of Wildlife brought together groups of industrial and non-industrial private landowners, members of the environmental community, and government representatives to discuss the Endangered Species Act and how it effects private lands and private landowners. The seven regional roundtables held across the nation were designed to:

- identify problems and successes associated with the Act and private landowners,
- familiarize participants with the existing range of economic incentives and administrative options, and
- cooperatively develop proposals to change the Act to make it work better for private landowners, resource agencies, the public and the species and ecosystems the Act was designed to protect and recover.

Roundtable Meeting Sites:

- San Ramon, CA
- Irvine, CA
- Shreveport, LA
- Orlando, FL
- Tucson, AZ
- Indianapolis, IN
- Helena, MT

Although the backgrounds, and viewpoints of the participants differed fundamentally and dramatically, the roundtables proved to be effective forums for developing mutually acceptable solutions. We found that people were more than willing to talk about their experiences, both good and bad. They were equally willing to be honest in their assessment of the Act and divorce themselves from their agency's, community's or industry's public position on the Act.

Participants in the roundtable represented the full spectrum of their respective communities. Ranchers, developers, utility operators, and the timber industry sat down with grassroots environmentalists and local government officials. Farmers, manufacturers, waste managers, and hard rock miners met with federal officials and conservationists. All interests were welcome. The only requirements for participation were being a regional stakeholder and a willingness to talk and work cooperatively with others.

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Several central findings emerged early in the process. Whereas some parties have portrayed a national climate of almost universal disdain for the Act, we found that among our participants:

- all felt we should have a vibrant Endangered Species Act,
- most felt the Act could be easily fixed,
- some had been blaming the Act for restrictions that were actually the result of local planning ordinances, and
- many who deal regularly with the Act were unfamiliar with its inherent flexibility.

Main ESA Concerns

All participants were supportive of the intent of the Act. However, there was tremendous frustration expressed about the administration, implementation, and enforcement of the Act. In general, the comments fell within the following broad categories of criticism:

- administration:
  - generally lacks flexibility,
  - focuses too much on procedures rather than results,
  - disproportionately affects small, private landowners, and
  - needs more scientific support.
- implementation:
  - lacks certainty,
  - focuses too much on single species and not enough on multi-species plans,
  - inadequately provides for preventative measures, and
  - needs to create more opportunities for local action and control.
- enforcement:
  - needs to move away from enforcement model that relies on criminal penalties towards contractual enforcement model relying on civil penalties.
- funding:
  - not adequately funded in general and
  - more monies needed for local initiatives

Fifth Amendment Takings

An interesting point, considering the focus of current national debate, was how these groups dealt with the issue of Fifth Amendment takings under the U.S. Constitution. In all meetings save one, it was either not brought up or it was a very minor part of the discussion. In the one meeting where takings were discussed, there was considerable disagreement on who would be eligible and how to assess damage. Views on takings varied but generally participants felt that national takings law would:

- present insurmountable administrative problems,
- require establishment of a large, costly monitoring and implementation infrastructure,
- increase litigation, and
- essentially create many more problems than it solved.

In addition, when discussing takings, participants could not identify a single circumstance or grievance that could not be addressed more cheaply, more efficiently, and more equitably through judicious and targeted use of economic incentives.

Consensus Recommendations and Proposals

Upon reviewing the roundtable-generated list of problems, and the relative merit and feasibility of the proposed solutions, several consensus themes became apparent. Participants in this process favored an integrated approach with the following key elements being the most ecologically beneficial, economically feasible, and politically expedient:

- promote rational administrative reform,
- provide an array of economic incentives,
- develop equitable, dependable, and adequate funding, and
- develop mechanisms that encourage voluntary, private sector efforts.

Administrative Reform

The majority of the comments on the Act were focused on administrative problems. Participants called for increased flexibility and an injection of certainty into the process. As indicated by FWS's current emphasis on habitat conservation planning, the "No Surprises" policy and "Safe Harbors," much of this desired change is already being instituted. In addition, participants wanted to:

- incorporate more and better science into the implementation and enforcement functions of the Act,
- provide a mechanism for agency outreach similar to the Natural Resource Conservation Service (formerly Soil Conservation Service) model, and
- encourage local conservation action and bioregional planning with federal oversight.

Economic Incentives

Although some of the recommendations for economic incentives on the local level were linked to administrative reform such as the implementation of collective or community habitat conservation planning concept of "virtual landowners", most would require legislative action. These latter in turn focused primarily on landowners capable of providing significant benefit to endangered species, yet lacking the economic or management flexibility to accommodate conservation goals. Recommendations linked to endangered species management included:

Federal Proposals:

- provide estate tax deferral,
- create a critical habitat reserve program,
- allow qualifying conservation expense deductions,
- adjust timber harvest capital gains taxes for small landowners,
- re-target farm conservation program monies,
- streamline the land exchange process, and
- create Office of Technical Assistance and Bioregional Coordination.

State and Local Proposals:

- create conservation banking and tradeable development rights standards,
- develop "virtual landowner" protocol, and
- establish a revolving loan program for local bioregional planning activities.

Funding Programs

Although the recommended federal, state, and local proposal were designed to minimize costs to everyone, additional funding must be secured or redirected to pay for federal components and new funding sources must be developed to pay for local components. The main recommendations included:

Federal Funding Options:

- switch funding from programs that degrade natural resources on public lands to programs that enhance natural resources on private lands and
- increase user fees on natural resources.

Local Funding Option:

- create modest real estate transfer tax to pay for local bioregional planning efforts.

Voluntary and Extra-legal Options

Most participants noted that it was not solely the government's responsibility to come up with solutions to the problems. Two proposals targeted at private landowners would promote voluntary programs that either benefit private landowners through cost-savings and public recognition or through directed incentives that make endangered species assets rather than liabilities.

- promote and publicize voluntary incentives and
- develop and promote eco-marketing options.

Concluding Comments

The Endangered Species Act has recently been the target of significant criticism, some of which is valid and much not. The positive results of the regional roundtables suggest to us two general conclusions:

- The ease with which consensus was reached among diverse participants and the successes of various demonstration projects strongly indicates that problems with the Act are solvable.

- Consensus agreement on the roundtables' proposals and near unanimous disapproval of Fifth Amendment takings legislation favors economic incentives as the most logical solution to current private property takings problems.

The Endangered Species Act has been a highly successful and widely popular piece of legislation. The recommendations in this publication for administrative and legislative reforms will keep this important act functioning and, should contribute greatly to solving the majority of its problems.

STATEMENT OF ROLLAND A. SCHMITTEN, ASSISTANT ADMINISTRATOR FOR FISHERIES, NATIONAL MARINE FISHERIES SERVICE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, DEPARTMENT OF COMMERCE

Mr. Chairman and members of the subcommittee, I am Rolland Schmitten, Assistant Administrator for Fisheries, National Oceanic and Atmospheric Administration, Department of Commerce. I appreciate this opportunity to discuss reauthorization of the Endangered Species Act (ESA). I represent the National Marine Fisheries Service (NMFS) which functions as the steward of America's living marine resources including valuable commercial fisheries, marine mammals and sea turtles.

NMFS is responsible for the protection of 29 marine and anadromous species under the ESA. These include whales, sea lions, seals, sea turtles, various West Coast chinook and sockeye salmon, and Gulf and shortnose sturgeon. Although I cannot overemphasize that the ESA is meant to protect all animals, large and small, NMFS' listed species are truly magnificent animals. They have a special place culturally, aesthetically and biologically in our world.

Most of the marine species listed by NMFS are highly migratory. Managing the recovery of species that travel through multiple jurisdictions including local, State, tribal, Federal and international waters, requires an enormous amount of planning, flexibility, and coordination.

Mr. Chairman, protecting species facing extinction is more important today than it was 20 years ago when Congress overwhelmingly passed the ESA. As noted in the recent National Research Council (NRC) report on the ESA, the current rate of extinctions is at an all time high and many scientists consider it to have reached crisis proportions. Legal protection for endangered species is the "safety net" to protect species when other conservation efforts and good intentions have failed.

The NRC found that the ESA is based on sound scientific principles. These scientific principles should control determinations about the listing of species (whether it is threatened or endangered) and what is needed for a species to recover. NMFS is in complete agreement with the Council's statement that habitat is absolutely crucial to the survival of species. Without habitat conservation, a species cannot survive, and it cannot recover. There is no alternative.

Over 20 years of ESA activities demonstrate that the law can work. We see a need to fine tune the ESA to make it more efficient and fair. These adjustments are in the administration's 10-point plan to improve the ESA.

There have been success stories. For example, the gray whale has recovered and we have removed it from the endangered list. But the pace of recovery is often slow, and most efforts take a great deal of time before progress can be shown.

LISTING AND RECOVERS

I want to stress that it is essential for listing decisions and recovery goals to be made solely on the best science available. To ensure that this information is available, NMFS and USFWS published joint policies that identify procedures, criteria and guidance.

There is a general need to improve science by reaching outside the agency. Therefore, it is our policy to incorporate greater peer review to ensure scientific scrutiny of ESA listings and recovery plans.

Our policy also recognizes that States possess broad trustee responsibilities for fish, wildlife, and plants. State agencies often have scientific data and valuable expertise on the status and distribution of species. Our policy is to use this expertise in making decisions concerning prelisting (candidate species) and listing. For recovery, NMFS also solicits the participation of States in implementing recovery plans. A similar joint policy has been drafted for tribes.

To minimize the social and economic impacts of recovering species (without sacrificing science) we have expanded opportunities for Federal, local and State agencies and other affected interests to develop strategies to implement recovery actions.

For listing, it is our policy to identify, if possible, what will or will not constitute a taking of the species at the time a final listing decision is made.

For all ESA actions, it is our policy to establish criteria, procedures and guidelines to ensure that decisions of NMFS and FWS are based on the best available scientific and commercial data.

SPECIFIC LISTING AND RECOVERY PROGRAMS

Science should control determinations about listing species and what is needed for a species to recover. However, once these determinations and requirements are made, we provide the public with this information, and actively involve them in the development and implementation of recovery plans.

For example, to carry out the scientific recommendations of the Northern right and humpback whale recovery teams, NMFS established implementation teams composed of representatives from county, State and Federal agencies, private organizations, and scientific researchers.

The emergency listing of the Stellar sea lion was supported by a variety of interests including commercial fishing groups. Immediately following listing, NMFS appointed a Stellar Sea Lion Recovery Team that included representatives from State and Federal agencies, the fishing industry, native Alaskans, private groups, academics and researchers to address all aspects of research and management needs for the species. All actions taken on behalf of the Stellar sea lion by NMFS have been discussed and commented upon by the Recovery Team prior to implementation. Since the final listing, NMFS has worked with the fishing industry and the regional fishery management council to develop additional fishery management regulations under the Magnuson Fishery Conservation and Management Act (MFCMA) for further reduction of the effects of commercial fisheries on Stellar sea lions. NMFS established management measures through the appropriate fishery management council to ensure that the Gulf of Alaska pollock fishery would not jeopardize the continued existence or recovery of Stellar sea lions. For example, the fishery management council established buffer zones around rookeries to reduce the effects of groundfish trawling on the foraging success of Stellar sea lions. All of these actions were based on the best available scientific and commercial data and were done with participation of the fishing industry and the appropriate regional fishery management council.

SALMON

NMFS knew that the potential listing of Snake River salmon was of significance to many groups in the Pacific Northwest. To ensure that the best science available was used, NMFS assembled a biological review team of scientists and other experts, from within and outside the agency, who were familiar with Pacific salmon. The team provided scientific information to NMFS to use in reviewing the status of the species. We believe this process guarantees that the best science is used from the initial stages of the ESA listing process.

NMFS also appointed a seven-member scientific recovery team. The team consisted of three fisheries scientists, one economist, two engineers, and one ecologist, comprised mostly from the academic community, to develop a Snake River salmon recovery plan. The recovery team submitted its draft recommendations to a scientific group for peer review.

The Recovery Plan addresses all of the causes for the decline of salmon including dams, harvest, habitat alteration, water withdrawals, and the effects of hatchery fish on the survival and genetics of wild fish and predation. The comment period on the draft recovery plan is being reopened in order to provide the public with an opportunity to review the economic analysis of the recovery recommendations.

However, I must emphasize that the recovery of salmon depends on the cooperative efforts and commitment of multiple agencies. For example, the Interior Columbia Basin Ecosystem Management Project collects and synthesizes critical information on quantity, quality, and needs for salmon tributary habitat. This kind of information is crucial for developing reasoned and scientifically sound recovery tasks for spawning and rearing habitat.

SEA TURTLES

NMFS' comprehensive program to recover endangered and threatened sea turtles has been expanded beyond the southeastern United States into the mid–Atlantic and the Pacific Basin. This has been necessary because sea turtles are highly migratory, traveling great distances between nesting and foraging habitat, and because of increasing evidence of incidental capture in commercial fisheries and other threats in those regions. We have published updated recovery plans for all species of sea turtles, and have always involved the public in decisions concerning the recovery of sea turtles.

PREVENTING LISTINGS

NMFS agrees with the NRC and believes the most efficient, effective and economically viable way to conserve species is to prevent species from becoming threatened or endangered in the first place. As Congress has stated in previous years, the ESA should be a means to protect non-listed species as well. The ESA provides for identifying candidate species and developing habitat conservation plans that include both listed and non-listed species. In addition, other laws—including the National Environmental Policy Act, the Fish and Wildlife Coordination Act, the Magnuson Fishery

Conservation and Management Act, the Clean Water Act, and the Marine Mammal Protection Act—provide important mechanisms for conserving species before they are listed. When all else fails, the ESA serves as a final tool to prevent the extinction of species.

INTERNATIONAL

Protection on an international scale is vitally important for many marine and anadromous species. NMFS represents the largest fisheries management system in the world, overseeing two million square miles of ocean where 300 different species are harvested. Many marine species are highly migratory and often cross international boundaries. Commercial fishing by foreign fleets and other foreign activities can have a major impact on America's marine resources. For example, although there is a moratorium on the use of large-scale drift nets for ocean fishing, it was recently reported that ships are still engaged in the practice. Incidents of large-scale drift fishing were reported last week in both the Atlantic, in the Bay of Biscay, and in the Pacific, 600 miles north of Midway Island. This type of fishing can impact protected as well as commercial species for which NMFS is responsible.

Sometimes our government can exert influence on the nations which register these ships and others which hunt protected species or harvest precious marine resources in a destructive and indiscriminate manner. NMFS works with other appropriate Federal agencies and Congress to initiate international moratoriums. NMFS is one of the administration's leading agencies in activities to protect whales through U.S. membership in the International Whaling Commission.

Another way to protect species in international or foreign waters is to eliminate the market for those species. The Endangered Species Act designates the Fish and Wildlife Service (FWS) of the Department of the Interior as the lead agency for implementation of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). CITES allows the government to control the import, export, reexport, and introduction from the sea-of convention animals through a series of permits and enforcement.

The majority of CITES-listed species are under FWS jurisdiction. However, many species under the jurisdiction of NMFS—including whales, dolphins, sea turtles, seals, queen conch and hard coral species—are listed, in either Appendix I or II of CITES.

NMFS draws on the considerable expertise of its regional offices and science centers in order to participate fully in inter-agency meetings concerning scientific and management issues in CITES. At the most recent Conference of the CITES Parties, NNFS officials, as members of the U.S. delegation promoted U.S. initiatives concerning new listing criteria, developed resolutions on illegal trade in whale meat and international trade in sharks, and produced stringent guidelines for regional marine turtle ranching.

Current NMFS activities include contributing to studies on significant international trade in corals, narwhal and queen conch, in addition to coordinating for submission to CITES a worldwide review of all available information concerning the biological status of sharks and the effects of international trade on them.

Commerce and Interior successfully concluded negotiations with the Japanese in 1990 to end all trade in hawksbill and olive ridley sea turtles by the end of 1992. Japan has been the major importer of turtle products worldwide. This negotiation was based on a cooperative investigation between the two agencies and certification of Japan under the Pelly Amendment of the Fishermen's Protective Act of 1967, for diminishing the effectiveness of the Convention on International Trade in Endangered Species of Wild Fauna and Flora. This collaboration was largely responsible for Japan's subsequent withdrawal in 1994 of its reservation to CITES prohibitions on the trade in hawksbill sea turtles. It further contributed to the successful development of the stringent regional turtle ranching guidelines mentioned above. Development of these guidelines now appears to be even more important since the governments of Cuba, Indonesia, and perhaps other CITES member government appear ready, with the assistance of Japan, to propose CITES approval for trade in hawksbill turtles.

Also, the Department believes that it has an important role to play, along with the Department of the Interior, in administering CITES. Within the Federal Government, NMFS is the agency with experience and expertise in protecting living marine resources. At the most recent CITES Conference of parties, several issues related to marine species were resolved by the parties.

CONCLUSION

NMFS has become more efficient in implementing the ESA. We are committed to treating the public fairly when carrying out our responsibilities. Significantly reducing funding for ESA activities will place additional species at risk of becoming extinct. It is shortsighted not to fund activities that avoid listings and, therefore, lessen, impacts on the public. Our ability to implement fairly and effectively the ESA depends on the funding we receive.

Because CITES is limited in its application, NMFS' experience has shown that many migratory species require the protection of ESA, as well as CITES.

NMFS looks forward to working closely with the subcommittee over the coming months as it considers the ESA. Thank you, Mr. Chairman. This concludes my statement. I would be pleased to answer any questions that you or other members of the subcommittee may have.

The Colorado College

Department of Biology

23 May 1995

Mr. Michael J. Spear, Director, Region I
U.S. Fish and Wildlife Service
Eastside Federal Complex
911 NE 11th Ave.
Portland, OR 97232-4181

Dear Mr. Spear:

The Fish and Wildlife Service has damaged the credibility of the Western Peregrine Recovery Team by circulating a highly modified version of the Addendum to the Pacific Coast and Rocky Mountain recovery plans. The document carries our names (Enderson, Harmata, Hunt, Kiff, White) but now includes views the Team vehemently opposes, beyond the misstatements of fact. As Team Leader, I have talked with the other team members and we are greatly offended that your agency would alter the document we carefully produced in light of the best scientific information and our considered judgement. The fake Addendum states we cooperated in the final version. This is a lie.

The Team specifically considered certain reproductive criteria (shell thinning and young per pair) as peripheral to the goal of achieving a secure population. Our last version of the Addendum (Fall 1992) now seems vindicated in view of the sweeping increases seen through 1994 in the western population.

What now matters is our reputation, and yours. We want you to notify the FWS personnel who have responsibility for peregrines in the west, and all members of the regional "working groups", that the fraud is not ours. Please send a copy of this notice to the Team members. We deeply regret this matter, but our intent is to assure our co-workers on this species do not think us incompetent and devious. We are good scientists all; the FWS service selected us to do our best. The original Addendum is still sound.

We would have strongly supported your intention that the western peregrine be de-listed. Now you have a document in circulation that completely contradicts this position. The Service, under the "lead" of Region 1, has badly bungled the recovery process since 1989. We hope you can turn this around, beginning in a timely way, with a statement separating us from the bogus "addendum". For the Team:

Sincerely yours,

James H. Enderson

James H. Enderson
Professor of Biology

cc: Team members
registered mail

14 East Cache La Poudre, Colorado Springs, Colorado 80903-3298 • 719-389-6395

United States Department of the Interior

FISH AND WILDLIFE SERVICE
911 NE. 11th Avenue
Portland, Oregon 97232-4181

IN REPLY REFER TO:

JUN 1 6 1995

Dr. James H. Enderson
Western Peregrine Recovery Team Leader
The Colorado College
Department of Biology
14 East Cache La Poudre
Colorado Springs, Colorado 80903-3298

Dear Dr. Enderson:

I am writing in response to your letter of May 23, 1995, concerning the Addendum to the Pacific Coast and Rocky Mountain/Southwest American Peregrine Falcon Recovery Plans (Addendum) I agree it was unfortunate that this version of the working draft Addendum became available and was mistakenly considered to be a final document. This version of the Addendum had not received official approval by the U.S. Fish and Wildlife Service (Service) and was not meant for distribution. Had the Service decided to pursue finalization of this document, the Team would have received adequate opportunity to review and comment.

Let me assure you, the Service intends to rectify this situation in a timely manner to avoid any further misunderstanding. The Service plans to contact those involved in the peregrine recovery effort and explain that the Addendum in question did not reflect the recommendations of the Team. The Service will further indicate that this version of the Addendum was a draft document without official sanction.

The Service acknowledges the Team's scientific expertise and appreciates each member's contribution toward the peregrine recovery effort. We look forward to further work on this species. If you have any questions, please contact Robert Mesta, Ventura Field Office, 805-644-1766.

Sincerely,

Regional Director

Socioeconomics and the Recovery of Endangered Species: Biological Assessment in a Political World

J. MICHAEL SCOTT,* TIMOTHY H. TEAR,† AND L. SCOTT MILLS†

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Murphy et al. (1994) recently articulated 12 reasons for a strong and effective Endangered Species Act (ESA). At the same time, they pointed to the threats facing reauthorization of the ESA. These conflicts between conservation mandates and the political climate bring us to the sticky question: What role should politics play in endangered species management?

The ESA states that the determination of a species' status as threatened or endangered is to be made "solely on basis of the best scientific and commercial data available . . ." (ESA § 4(b)(1)(A), emphasis added). In addition, recovery plans are to provide "objective, measurable criteria" by which a species could be delisted (ESA § 4(f)(1)(B)(ii)). However, the strict emphasis on biological criteria to establish recovery goals can result in goals that are not necessarily achievable, practical, politically acceptable, or even expedient. While it is inevitable that politics, economics, psychology, and sociology also play a role in establishing and implementing recovery plan goals for endangered species, it is not clear how these "nonbiological" concerns should be incorporated into the biological decision making process.

A conflict of opinion has emerged from this uncertainty, whereby some argue for incorporating socioeconomic and political realities into recovery goals, while others urge species recovery based strictly on biological criteria. In addition, lack of distinction between "political" and biological goals has been suggested as a reason for setting low recovery goals (Tear et al. 1993). Similar debates have surfaced with such high-profile species as the Northern Spotted Owl (Thomas & Verner 1992; Yaffee 1994), the Red-cockaded Woodpecker (McFarlane 1992), and the Dusky Seaside Sparrow (Walters 1992). This issue over how to incorporate biological and nonbiological factors may also lie at the center of the current debate over whether to accept or reject the 1993 revision of the grizzly bear recovery plan.

All involved in the conservation of endangered species would agree on the most basic of points: recover the species rather than compromise its chances for survival. Common ground must be sought between the opposing points of view that pit biological estimates of viability against the constraints of social, political, and economic realities. Toward that end improvements have been made in the recovery process evident in the 1988 "recovery plan amendments" (Fitzgerald 1989) and policy guidelines (U.S. Fish and Wildlife Service 1990*a*). The following suggestions are based on the premise that the separate but relative influences of biological and socioeconomic factors should be explicitly stated when a species' probable path to recovery is estimated.

Recovery plans are supposed to provide estimates of the time and expense of achieving recovery (USFWS 1990*a*). We recognize that forecasting the future of any species is a difficult task. However, some guidelines for making informed predictions have emerged from population viability analysis (PVA) which may help improve the process. We start with the suggestion that recovery goals be considered for both the short- and long-term. Establishing a specific time frame for each of these levels will vary among and within taxonomic groups. For example, large mammal recovery efforts might target 10–20 years for the short-term and 100 years or so for long-term goals, while much shorter intervals might be more applicable for invertebrates.

Second, the recovery team will need to agree on some acceptable probability of persistence for each time period in order to evaluate and compare recovery options. In addition to the traditional extinction threshold of zero individuals, we recommend that other thresh-

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olds be considered. For example, there may be some management threshold or thresholds below which current conservation strategies would be altered, such as population size at which a threatened species would be reclassified as endangered (see Ginzburg et al. [1990] for discussion of quasiextinction thresholds). It is important to acknowledge that these two key but subjective decisions ("acceptable" time periods and probabilities of persistence) may be guided by science but are essentially rooted in society's values (Shaffer 1987). Therefore, the criteria used by the recovery team to reach these initial decisions should be identified and clearly stated.

Short- and long-term recovery goals will differ in the way that nonbiological considerations are handled, and these differences will be reflected in the specified probabilities of persistence. First, long-term recovery goals will be based solely on biological considerations (see Schemske et al. 1994), including habitat restoration and protection (Murphy et al. 1994; Noss & Cooperrider 1994). Predictive models will have relatively low precision at these longer time scales, a problem exacerbated by limited, variable information available for most threatened and endangered species. Consequently, we propose that long-term viability assessment of management options could tolerate reduced probabilities of persistence in comparison with most currently being suggested. For example, 80–90% probability of persistence (as opposed to the conventional 95–99%) for more than 100 years might be adequate for many large vertebrates. Reducing the probability of persistence to this degree could decrease the minimum population sizes estimated to meet recovery criteria, which in turn might decrease the number of tasks identified or the sequence of implementation reported in recovery plans.

In contrast to a single, long-term goal based solely on biological considerations, the short-term, or interim, management goals would be presented as a range of options. Foremost would be a biologically based goal which led to a high probability of persistence in the short-term (e.g., for large mammals a 99% probability of persistence above a management threshold over 10–20 years). In addition, nonbiological influences would be recognized in an explicit fashion by presenting a set of alternative strategies that show how probabilities of extinction change as social/political/economic factors are incorporated. For example, the biologically based viability assessment might determine that 100 individuals were required for the desired probability of persistence. However, social/political/economic considerations might indicate that a lower population size was more immediately achievable. All else being equal, the probability of persistence for the lower population size would consequently decrease, perhaps below the desired level. Thus, more "politically feasible" scenarios are presented as alternatives to the short-term biologically based one, with the biological costs clearly presented as a change in expected persistence probability. Formal sensitivity analysis, which is a method for determining the effect of changes in survival and fecundity on a population's growth rate, will help in developing such alternatives because it can identify the variables that will provide the greatest probability of recovery with the least increase in management effort or social cost (Crouse et al. 1987; Wootton & Bell 1992; Schemske et al. 1994).

Importantly, the chosen interim plan is next compared with the long-term, biologically based goal. Under this procedure, short-term recovery goals are evaluated with respect to how well they are proceeding toward the ultimate goal of recovery, which is "to restore listed species to a point where they are viable, self-sustaining components of their ecosystem" (USFWS 1990*b*). In essence, public input is incorporated into choosing short-term management strategies, but the ultimate success of the interim strategies is judged against the yardstick of the long-term, biologically-based goal (Harrison et al. 1993). Reassessing the validity of initial biologically-based, long-term predictions encourages the incorporation of new information obtained during the recovery process.

It is important to realize that detailed information for this sort of viability analysis is available for only a handful of species (Dennis et al. 1991; Foley 1994). As the quality and quantity of data increase, so too do the reliability of population forecasting attempts and the subsequent assessment of recovery potential. In these cases, adopting more generalized criteria, such as those developed for the World Conservation Union threatened categories of the International Union for the Conservation of Nature and Natural Resources (Mace & Lande 1991), provides one alternate means for assessing probability of recovery. For those species for which population estimates are not even possible, expert systems and decision analysis (see Maguire & Servheen 1992) or model simulation (Foin & Brenchley-Jackson 1991) may provide some measure of probability of persistence. In all cases, it is crucial that two distinct recovery goals are established that separate biology from politics—a long-term, biological goal that estimates viability of the species, and a short-term, interim goal that considers socioeconomics en route to attaining viability.

Why should we consider going through this more detailed process? First, by clearly discussing biological and socioeconomic factors in an open forum—the recovery plan—we can be more realistic in our assessments, more informed in our choices, and more confident in our actions. Second, by distinguishing between the effects of biological and nonbiological factors (in-

cluding socioeconomic concerns and political realities) on the recovery of a species, we will be better able to evaluate the reasons behind the success and failure of recovery efforts. In this way we can gain insight into the relationship between the science of viability assessment and the effects of management decisions on the survival of endangered species. By following this approach, biologists may begin to bridge the perplexing and potentially divisive gulf between biological expectations and social, economic, and political realities.

Acknowledgments

We thank Ernest Ables, Peter Brussard, Dan Doak, Debbie Forester, Reid Goforth, Ren Lohoefener, Jim MacCracken, Dave Mattson, Reed Noss, Jay O'Laughlin, Jim Peek, Fred Samson, Mark Shaffer, David Wilcove, and one anonymous reviewer for their thoughtful and candid comments on this manuscript. While we did not agree on all points, discussions were very useful in our deliberations on this difficult and controversial topic.

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POLICY FORUM

Status and Prospects for Success of the Endangered Species Act: A Look at Recovery Plans

Timothy H. Tear, J. Michael Scott, Patricia H. Hayward, Brad Griffith

Reauthorization of the 1973 Endangered Species Act (ESA) will occur during a time when the system for protecting threatened and endangered species in the United States is in question (*1*). While some claim that the ESA was originally intended to save just a few of the charismatic megafauna (*2*), others now look to the ESA for the protection of all biological diversity (*3*). To some, the ESA overprotects (*4*), particularly subspecies and populations rather than full species (*1*); to others, the protection is not aggressive enough (*5*) and often results in too little protection too late (*6*).

Our objective was to assess the validity of recent criticisms regarding the level of protection provided by the ESA and the recovery process. We focused on recovery plans because they are a crucial link between classification as an endangered species and actual recovery. We chose to evaluate criticisms that recovery efforts attempt to save too much and that subspecies and populations are overemphasized in recovery efforts. We reviewed all 314 available recovery plans approved by the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) as of August 1991 (*7*).

Recovery plans have been required by law since 1978 for all of the ESA's threatened or endangered species. The ESA identifies an endangered species as that "in danger of extinction throughout all or a significant portion of its range" and a threatened species as that "likely to become endangered within the foreseeable future" (*8*). Recovery plans are intended to identify specific tasks necessary to recover a species to a stage where it can be downlisted from endangered to threatened status or removed from threatened status (delisted). The ultimate goal is to "restore the listed species to a point where they are viable, self-sustaining components of their ecosystem" (*9*).

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Setting Recovery Goals: Pinpointing the Target

In order to evaluate the level of protection proposed for threatened or endangered species in the recovery plans, we analyzed the recovery goals for species from original recovery plans that were stated in terms of population size and the number of populations. Out of the 54 threatened and endangered species for which population size data were available, 15 (28%) had recovery goals set at or below the existing population size at the time the plan was written. For example, the original recovery plan for the endangered California condor (*Gymnogyps californianus*) (*10*) estimated that there were 60 birds in the wild and targeted a population of 50 birds for recovery. Only 3 of these 15 species were classified as threatened species under the ESA. Threatened species are not necessarily in immediate danger of extinction because of low population size, an argument used to explain why the recovery plans for the spotted owl (*Strix occidentalis caurina*) (*11*) and desert tortoise (*Gopherus agassizii*) (*12*) set population size goals lower than the current population size estimates. However, for the remaining 12 endangered species this argument is not valid, as endangered species are at immediate risk of extinction.

Of similar importance to population size in estimating the chances of survival of a species is the number of distinct population groups and their metapopulation structure (*13*). Yet, recovery goals for numbers of populations were even less ambitious than those for population size: 60 out of 163 species (37%) had recovery goals set at or below the existing number of populations, whereas only 28% had recovery goals set at or below the current population size. With the exception of invertebrates, these high proportions occurred in all taxonomic groups.

In some cases, habitat destruction may have been so severe that recovery goals within the existing habitat were set below viability. For example, loss of habitat was so extreme in the case of the Morro Bay kangaroo rat (*Dipodomys heermanni morroensis*) that it was given a "remote chance of recovery" (*14*). If this occurs, more emphasis needs to be placed on early intervention and habitat restoration to ensure that there is enough suitable habitat in the wild for viable populations to be established and maintained.

Few species have actually recovered because of the ESA (*15*). Setting recovery goals for population size and numbers of populations at or below what exists in the wild at the time the recovery plan is written is counterintuitive to the concept of recovery. The ESA requires recovery plans to incorporate "objective, measurable criteria which, when met, would result in a determination . . . that the species be removed from the list" (*16*). Yet, our analysis of recovery goals in relation to current population size implies that roughly 28 to 37% of the threatened and endangered species are being "managed for extinction."

Though no universally accepted criteria for endangerment exist, Mace and Lande developed criteria for ranking levels of extinction risk for vertebrates (*17*). Using their criteria, we calculated that 18 out of 30 (or 60% of the total number of species for which estimates were possible) of the ESA's threatened and endangered vertebrates had recovery goals below what Mace and Lande set for endangered status, the second most risky of their categories. According to these measures, even if population goals were achieved, 60% of the ESA threatened or endangered vertebrate species would remain in peril, with roughly a 20% probability of extinction within 20 years or 10 generations, whichever is longer.

In more recent plans, the tendency to set low recovery goals in relation to current estimates has declined. The number of species with recovery goals at or below existing population levels decreased for population size from 13 of 42 (31%) before 1988 to 2 of 12 (17%) after 1988 and for numbers of populations from 44 of 111 (40%) to 16 of 52 (31%). The same temporal trend held with Mace and Lande's criteria; the percentage of plans for vertebrates with recovery goals that would leave the species endangered decreased from 63% before 1988 (15 of 24) to 50% after 1988 (3 of 6).

Therefore, our analysis does not show that recovery plans attempt to save too much, but instead that recovery goals have often been set that risk extinction rather than ensure survival. Crucial to the success of the recovery process is that recovery goals depict biologically defensible estimates that will ensure population viability. Apparently, this has not been done in many cases. Such discrepancies suggest that political, social, or economic considerations may have been operating that reduced recovery goals so that they were below what might have been set if they had been developed strictly on biological

based estimates. This issue has been identified in such landmark cases as the northern spotted owl (*18*) and the red-cockaded woodpecker (*Picoides borealis*) (*19*). We suggest that it occurs more often than previously believed and represents a fundamental problem in recovery efforts.

The Protection of Species, Subspecies, and Populations

We found the criticism that recovery plans overprotect subspecies and populations (*4*) unwarranted. The ratio of subspecies to full species in North America is approximately 6.9:1 for mammals (*20*) and 4.9:1 for birds (*21*). However, the ratio of subspecies to species in recovery plans is 1.28:1 for mammals and 0.49:1 for birds. Underemphasis of recovery efforts for subspecies may be even greater than these numbers suggest, as we expect populations and subspecies will become jeopardized before full species. In fact, we found that median population size (M) in subspecies and population-level plans was significantly smaller (M = 630) (P = 0.0177) than in species-level plans (M = 1552), which suggests that this expectation is correct.

However, concerns that the inclusion of populations and subspecies could overwhelm the ESA are well based. For example, 22 different subspecies of the pocket gopher (*Thomomys umbrinus*) and 15 subspecies of tui chub fish (*Gila bicolor*) are currently proposed for protective status. Such large numbers of distinct taxonomic units provide a compelling reason to protect species, subspecies, and populations within ecosystems while they are still common, rather than singly as we discover that they are at risk of extinction.

Improving the Recovery Process

Recovery plans all too often "manage for extinction" rather than for survival. If the ESA is to be effective, we need to be more realistic in setting biologically defensible recovery goals. We suggest that, as a first priority, USFWS and NMFS establish guidelines in terms of population size, number, and probabilities of persistence over specific periods for use in distinguishing between threatened and endangered species and setting recovery goals. Such guidelines may supply the basis for objective, measurable criteria outlined by the ESA. Until this is done, we suggest emphasizing appropriate population goals in relation to current population size and continued support for protection and recovery of populations and subspecies as well as full species. If suitable habitat is severely limited, habitat restoration should be included as a necessary component of recovery efforts to ensure that recovered populations can be large enough to be viable.

The ESA states that species should be recovered within their ecosystems. However, recovery solutions have frequently included translocation (70%) and captive population establishment (64%), which suggests that recovery within an ecosystem often may not be done. Extreme management actions such as translocation and establishment of captive populations suggest that recovery may have been initiated too late, a criticism often directed at the ESA (*1*, *6*). Recognizing that our ability to save endangered taxa is limited, we propose initiating an aggressive, proactive effort to save species while they are still common, viable parts of their self-sustaining natural ecosystems. One step in that direction would be to ensure that a minimum of three viable representatives of each vegetation cover type are preserved in each ecoregion in which they occur (*22*). In this way, viable foundations for terrestrial biodiversity may be set in place before it is necessary to invoke the ESA.

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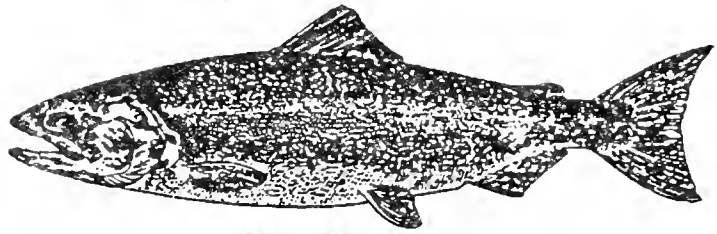
SNAKE RIVER SALMON



RECOVERY TEAM

May 30, 1995

Mr. William Stelle
Regional Director
National Marine Fisheries Service
7600 Sand Point Way N.E.
Seattle, WA 98115

Dear Will,

The Snake River Salmon Recovery Team (the Team) has reviewed the March version of the Proposed NMFS Recovery Plan. This letter is to convey the Team's more important comments on NMFS' proposed recovery actions.

The Team supports much of the draft Recovery Plan. Your Plan embraces most of the Recovery Team's final recommendations that call for the use of independant scientific reviews to design and evaluate recovery methods and implement the concept of adaptive management. Under the plan we should obtain significant new information that will allow us to understand more fully flow augmentation, spill, transportation, in-river migration and the benefits of surface collectors.

Our general support should not be understood to negate the seriousness of some of our differences. Moreover, some of the differences between our submission of Final Recommendations and the current proposals from NMFS have been exacerbated with more recent scientific information and continuing analysis.

We recognize that some of our recommendations are not popular with some, but that does not deter us from seeking improvements in the NMFS Plan that we believe will benefit the listed salmon.

Our major differences are these:

- **Summary Tables (Duration Column):** Time scales need to be shortened for various activities.

- **Institutional structure:** The Scientific Advisory Panel should handle research oversight and resolution of scientific disputes.

- **Drawdown:** We have not seen a reasonable experimental design to test drawdown. Until the problems of downstream and upstream passage for both juveniles and adults, which we believe will increase salmon mortality, are addressed there should be no drawdowns.

- **Flow augmentation:** We do not accept the Plan's wording that implies that there is a known flow-survival relationship. We cannot concur with a shift in priority to spring flows as described in the NMFS Plan. First priority should be given to summer flows. We are concerned that the NMFS Plan appears to discredit the NMFS/University of Washington 1993-1994 Snake River survival studies.

- **Spill:** Spilling at collector dams is not in our judgment a viable recovery method even without gas bubble mortality.

- **Harvest:** We do not believe that giving harvest management responsibility to the Pacific Fishery Management Council and the Pacific Salmon Commission will result in recovery.

- **Habitat:** Some specific actions the Team recommended (i.e., an immediate moratorium on further non-fish-related development of critical habitat areas), and which were included in earlier NMFS Plan drafts, became "watered down" in the final draft to the status of federal agency guidelines rather than ESA-mandated specific actions.

Proposed Recovery Plan Summary Table and the Duration Column at the end of Chapter VI

The duration column of the tables should be reviewed and the time scales revised to shorter more reasonable ones. For example, over a year is suggested for the establishment of the Implementation Team and the Scientific Advisory Panel. The State of Idaho, responsible for insuring that water diversions are screened, is allowed 8 years to complete the task. The Conservation Districts and the irrigators are given two years to eliminate illegal "berms."

The Team is aware that it takes time to make fundamental changes in the status-quo but the proposed time frames are too leisurely given the crisis that is occurring in the basin. It will be increasingly difficult to advocate aggressive implementation of the expensive mainstem measures while simultaneously going slowly with other critical elements elsewhere in the basin.

Institutional Structure

The Institution section is the place to stress the importance of setting priorities. Some groups hold the mistaken view that we have unlimited resources to recover salmon. We know that funding will be limited and NMFS with the help of the Implementation Team and the Scientific Advisory Panel (SAP) must set priorities that will improve survival over the interim while generating additional information through monitoring and evaluation that will enhance our prospect of making significant improvements in system operations or reconfigurations.

The new institutional structure is needed to bring order out of the present chaos. We cannot recover the salmon without a single and accountable decision point to implement recovery. The Team recommended that NMFS, because of its responsibilities under ESA, become the decision maker with regard to matters that affect the listed Snake River salmon. In order to develop the infrastructure and operating procedures NMFS requires the resources for it to proceed.

The section on data collection, managing and disseminating of data is well done and needs to be implemented immediately. These activities should be carried out through an open public process. We support using a distributed system such as the World Wide Web currently being developed on Internet. The Team strongly recommends that NMFS use an open public process to stimulate research and debate on the effectiveness of salmon recovery measures.

We question the NMFS' proposal that the Implementation Team should be an administrative identity that will "direct research" and the dispute resolution discussion is incomplete and inadequate. In the U.S. v. Oregon process unresolved disputes escalate to a district judge. This seems to be in conflict with statements elsewhere in the Plan that NMFS will make final decisions.

The Team's recommendation was that the Scientific Oversight Committee, (SOC) now your SAP should provide a process for resolving disputes and assessing scientific validity. The Team further recommended that the SOC should establish research priorities and review and approve research designs. In this way the SOC would handle research oversight.

Drawdown

The Team's final recommendations to NMFS were negative about drawdown however, we left open the possibility of a test if a reasonable experimental design was developed that would not put fish at significant risk. As of this date we have yet to see an experimental design that would successfully test drawdown as a recovery strategy. We note that you will make a decision on whether to conduct a short term drawdown in 1996. There are a number of problems with near-term spillway crest drawdowns such as: the loss of the collection facility, dipping fish out of the gatewells or removing screens, the operation of turbines at off-peak efficiency, the installation of rock weirs to protect the spilling basins and the passage of adult salmon past the drawdown experiment. These problems will, in our opinion, be detrimental and result in increased mortality to salmon. Until the problems of fish passage are resolved there should be no spillway crest drawdown.

Flow Augmentation

As we have commented before, we do not know how much water is needed for fish and there is large uncertainty about the relationship of flow to survival. The Team has acknowledged that there is a flow survival relationship that is yet undefined for presently existing river and reservoir conditions. We did not accept a specific flow survival relationship as implied by your wording: "[the Team] acknowledged the validity of the flow survival relationship." We have recommended that the amount of flow and its allocation needed careful testing. The plan is silent on the details of testing and we suggest that a more detailed plan of operations be developed.

We are concerned that the NMFS proposed plan recommends spring flows as the highest priority for use of available reservoir storage. The NMFS plan relegates what we believe to be the highest priority, the use of reservoir storage for augmentation in the summer, to "conserving *some* water for flow augmentation in July and August."

The Recovery Team has recommended that first priority be given to augmenting flows in the summer to aid fall chinook salmon juveniles because: (1) there is some evidence that flows of 50 kcfs aid fish passing through the reservoirs in the summer, (2) flows are likely to be below 50 kcfs during much of the summer migration season in years with average or below average runoff, (3) flows during the spring migration are both cooler and higher than in summer and (4) the warm reservoir temperatures in the summer could be reduced by drafting cooler water from reservoir storage. There is evidence that flows may be adequate during the spring migration in most years and that much of the water that is currently drafted in the spring could be better used to benefit adults and fall chinook juveniles in the summer. Only in years of extremely low runoff would significant amounts of augmentation be needed in the spring.

We believe the NMFS Plan for use of stored water to augment flows is not adequately described. We agree with the general goal of using flow augmentation to attempt to increase survival, but when and how much to augment is left to the Technical Management Team (TMT) with unclear guidance on priorities, interpretation of inconsistent recommendations and application of flow objectives. Flow augmentation in the spring should be minimized and used, if needed, primarily during the later part of April and May when most of the salmon and steelhead are moving downstream. If large numbers of chinook arrive at Lower Granite Dam in April and flows are low, it may be necessary to augment flows until natural runoff increases. The Team recommends that the highest priority for the use of the water in Dworshak Reservoir should be for fall chinook in late June, July and August. For this reason, the Team recommends that NMFS maximize the refill probability for Dworshak Reservoir so that the full storage capability is available during the summer.

We recognize the importance that NMFS places on the reach survival study and believe that the Plan should reflect that emphasis more strongly. The Proposed Recovery Plan seems to discredit the NMFS/UW survival studies conducted in the Snake River during 1993 and 1994 by claiming the studies cannot be used to assess mortality and condition of fish at the estuary. These studies were not designed or intended to measure survival in the estuary. The Plan should stress your belief that survival studies are critical to gaining an understanding of how juvenile salmon are surviving as they emigrate out of the system. The Team recognized that the studies were the best available information on downstream passage survivals even though they were limited to the Snake River. The Team recommends that the Plan more clearly express NMFS's support for the continuation and extension of reach survival studies down to, and including, the estuary.

The results of the first two years of the NMFS/UW studies have caused interested fishery scientists to rethink some of their assumptions on reach survivals. When the Team began the development of our Recovery Plan Recommendations, over three years ago, it was commonly thought that smolt survivals were exceptionally low in the first reservoir encountered as they migrate out of the system. For this reason, recovery recommendations were focused on decreasing water-particle travel time and presumably fish travel time. It was believed that this would reduce exposure to predators and increase survivals.

The first two years of the NMFS/UW survival study have not confirmed previous conventional wisdom. In fact, the results were similar in both years and showed reservoir survival in Lower Granite that approached 100 percent over a wide range of flows during the out-migration. This is precisely the type of information that is absolutely necessary for anyone to design and implement a recovery plan. With a better understanding of reach survivals, recovery measures can be tailored to reduce mortality as fish move through the system.

The NMFS Recovery plan states that NMFS/UW studies were made during a "very narrow range of flow condition and so cannot be used to compare survivals at different flow levels." The studies were conducted over the last two years and because the flows vary significantly during each season they were able to collect survival data over a wide range that varied from low to relatively high flows. The relationship of flow to survival will come from repeating these studies over many years. While the limitations of the data leave considerable

uncertainty and unknowns, the Team has not seen a relationship between survivals of yearling chinook and flow in the upper two reservoirs.

Spill

The Team believes that the role of spill as a component of the interim operations of the hydropower system merits reexamination, and recommends to you that you undertake such a review .

In our February letter to you and in our extensive earlier discussions of this topic, we supported the conduct of a spill program at all non-collector projects and at collector projects under certain terms and conditions to create in-river conditions for a transport vs. in-river survival evaluation.

The Team has further considered its earlier view and is concerned about the risks of elevated dissolved gas concentrations associated with spill at all the dams. It appears to us that the risk to migrating fish may outweigh the benefits of spillway passage. We are still learning about what level of spill is appropriate and how we can evaluate the impacts of spill and high dissolved gas levels on migrating fish.

We now believe that a more limited use of spill will allow for the continued scientific evaluation -- which we support -- while minimizing the risks that excess spill may pose to listed salmon. We therefore recommend that the NMFS review the core elements of the spill program based upon the new information being collected. We believe that such a review would be the best example of applied adaptive management and would reflect your continuing commitment to the use of the best science available in the conduct of the recovery effort.

This recommendation is based on the Team's analysis of the likely changes in survivals due to the spill program. The Team has developed these estimates using assumptions from your staff for mortalities through the three possible dam passage routes and through the reservoirs. The three ways that fish pass a dam are over the spillway, through the turbines or via the bypass system. Using the survival assumptions that we received from NMFS staff, it appears that for those fish emigrating in the river, less than 40 percent of the fish that reach Lower Granite dam will survive to below Bonneville Dam. This is with an assumption of **no increased mortality** due to nitrogen supersaturation. With a small 2.0% increased mortality in each reservoir due to gas bubble disease the survival of fish emigrating in the river with spill will be less than without spill. The survival of fish that emigrate in the river is low because of the cumulative

mortality of emigrating through eight reservoirs and over or through eight dams. With such low in-river survivals, spilling at the collector dams is not a viable recovery method even without a gas bubble disease problem.

Figure 1 illustrates the survivals that the Team calculated using NMFS assumed survival estimates for each reservoir below Lower Granite and for all passage routes through each dam. These survival calculations are based on the percentage of fish that pass each dam by the three alternate passage routes. During spill, at a dam with a bypass system, the fish will either go over the spillway, into the turbines or be captured in the bypass system for collection and transport or in some cases returned to the river. Figure 1 illustrates the in-river survival conditions with and without spill at all projects. The in-river survivals without additional spill are 37 percent to below Bonneville and with spill at all projects as recommended by NMFS the in-river survivals increase to 40 percent. This is a very small increase that probably cannot be measured and again assumes no increase in mortality caused by increased dissolved gas.

Figure 1 also illustrates the projected survival of fish to below Bonneville taking into account the fish that are collected and transported. The current transportation system when combined with fish emigrating in the river will result in approximately 78 percent of the fish that approach Lower Granite surviving to below Bonneville. Under the NMFS proposed spill program this survival is reduced to 74 percent because fewer fish are collected for transport and therefore more fish are exposed to the cumulative mortality of emigrating past eight dams and reservoirs. Again, the difference between these survival estimates is probably too small to measure but the general level of survival under the proposed spill program is likely to reduce survivals of listed salmon to below Bonneville dam.

The Team believes that spill is not a viable downstream passage solution. The current spill program will result in such a small change in survivals that it will be impossible to measure while at the same time presenting substantial survival risks due to gas bubble disease. While the Corps of Engineers (Corps) and NMFS are doing their best to manage dissolved gas levels, it is apparent that technical and management failures have led to gas supersaturation that exceeds the NMFS standards of 115% forebay and 120% tailrace. The result is that we do not have the ability to control gas concentrations to precisely set levels and the impacts of gas bubble disease could exceed the possible benefits of avoiding turbine mortality. Our analysis has shown that the reductions in mortality in passing dams with spill are more than offset by the increased risk of supersaturation and the cumulative mortality of passing multiple reservoirs and dams.

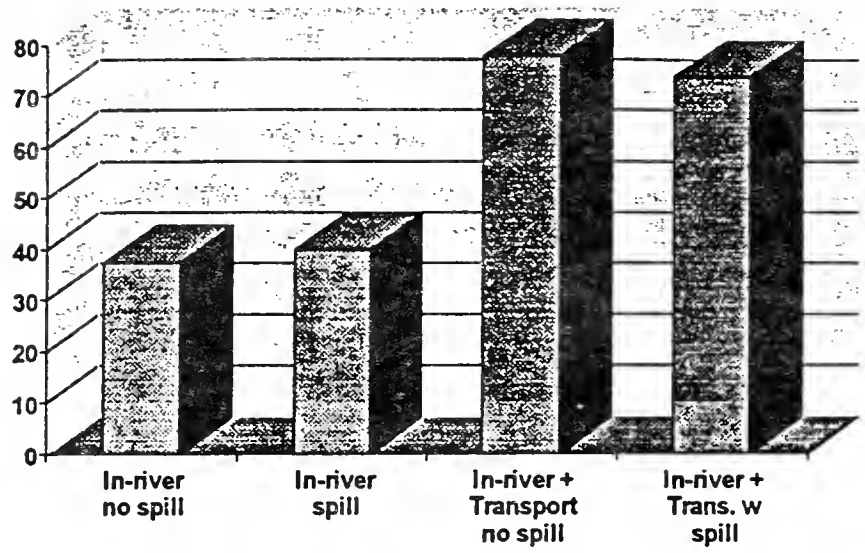


Figure 1 – Calculated survivals based on NMFS survival estimates

The Team continues to support the development of efforts on alternative surface collection and bypass systems because they offer the opportunity to move fish past a dam without creating gas supersaturation problems. Given the existing configuration of spillway gates and stilling basins, spill must be limited to reduce the impact of dissolved gas on survivals. In the future, reconfigured spillways may be able to safely pass greater amounts of spill than is presently prudent but there must be substantial amounts of research and engineering before this will be a reality.

Surface collection and vertical slot bulkhead gates at spillways currently hold promise of increasing the portion of the fish that avoid the turbines while increasing the numbers of fish spilled per volume of water spilled.

The Team has followed development in surface oriented bypassing and collection since publishing our Final Recommendations in 1994. We are now even more optimistic that preliminary prototype tests will show the ability to increase survival past dams. We suggest that efforts and expenditures for testing surface collection be increased, perhaps at the cost of de-emphasizing other alternatives such as installing extended length screens at the mainstem dams.

NMFS should follow closely the surface collection work by the Corps at Ice Harbor and Lower Granite; and by the PUD's at Rocky Reach and Wanapum.

Flood Control

The recent incident of mortality in fish pens below Ice Harbor Dam suggests that we should reconsider spring flood control and flow augmentation strategies. In hindsight, it seems that both the Team and NMFS concentrated on the situation when the years were dry and we needed to maximize the use of flow augmentation. Our recent experience with involuntary spill that results in high levels of gas supersaturation, shows that NMFS needs the ability to reduce river flow. The recent fish kill below Ice Harbor is an example where in-season management decisions could have reduced the flow augmentation and spill levels above Ice Harbor dam sooner when the turbine problem caused high gas levels below the project. As gas saturation levels increased into the lethal range, flow augmentation should have been reduced sooner to decrease the amount of water that needed to be spilled at Ice Harbor. Also the spills that were ordered above Ice Harbor contributed to the saturation level of the water in the forebay. This added to the amount of supersaturation below the project. With the present forecast of large involuntary spill at the end of May, it is a delicate balance to determine how much nitrogen we take over the short term in order to reduce the peak total dissolved gas in late May taking into account of the number of fish in the river. These types of operational decisions are precisely what is implied by the term in-season management.

The high gas levels at Ice Harbor emphasizes the importance of turbine maintenance and gas abatement measures such as "flip lips".

Dissolved Gas Levels

With your recent request to the Departments of Environmental Quality we recognize that the numbers in the NMFS Proposed Recovery Plan have been superseded. We have not seen data to indicate that 115% TDG should not be applied at all monitoring stations and the use of 120% as the limit in the tailrace concerns us. We understand that internal monitoring of gas bubble trauma will be carried out by the National Biological Service. We feel that last year's recommendations of NMFS's Expert Panel on Dissolved Gas should be fully implemented as soon as possible. This will require internal monitoring in order to determine the state of vascular tissue. The Expert Panel called for examination of fish obtained from the collector systems as well as the forebay so we can determine if bubbles are removed by decompression in the collector system.

Techniques that will not introduce bubbles, (i.e. examination of gill lamellae), will be used with salmon as well as steelhead. We also recommend that hatchery steelhead be sacrificed for internal samples and that similar live samples be held in the river to provide a measure of mortality. With the almost certainty of high dissolved gas in the next few weeks we should obtain as much information as possible to resolve the uncertainties for planning future monitoring.

Transport

The NMFS decision to rely primarily on the collection and transportation systems to get most of the smolts past the dams and the reservoirs, until in-river migration has been proven as a better option, is a wise choice in our view.

Harvest

Much of the harvest section of the draft Recovery Plan is very well done. The Harvest section should point out that since reductions in Harvest can have immediate effect on returning adults it is imperative that actions be initiated as quickly as possible. This will initiate the recovery process until other measures begin to take effect.

The draft Plan should specify that phasing out of the lower river gillnet fleet is required because of intermingling of Snake River fall Chinooks with healthy up-river brights and hatchery stocks. The Team is disturbed that some harvest alternatives have been removed from the latest NMFS Proposal. Specifically the Pacific Fishery Management Council (PFMC) and the Pacific Salmon Commission (PSC) are given the responsibility of recovering Snake River Salmon by controlling harvest. The Pacific Council does not have a management record that demonstrates a high concern for weak stocks. NMFS seems to propose that the Pacific Salmon Commission meet their Chinook rebuilding schedule that has not shown a trend toward rebuilding since it was started in 1984. This requires an assumption that the Commission will change their past harvest rules and adopt an immediate rebuilding schedule. The Team does not believe that the Commission will adopt the changes necessary to establish a rebuilding schedule. In fact, the Commission has repeatedly ignored its own bilateral scientific reports recommending that chinook harvest be reduced in order to meet the rebuilding schedule. The Team doubts that the Commission will develop, adopt and implement a rebuilding schedule that will meet the needs of coastwide Chinook populations in a timely fashion.

It would be desirable to manage harvest of Snake River Chinook within the framework of the overall PSC chinook rebuilding program. If that cannot be accomplished we must have a fall back position that places the burden on fisheries subject to U.S. jurisdiction. We agree that the sacrifice required to save a very small number of Snake River falls, most of which will be caught in Canada, is not practicable; hence the greatest reductions must occur in the entire in-river harvest plus the ocean catch off Oregon and Washington. We are encouraged by your report that the PMFC recognizes this need. The in-river harvesters must also be convinced of its critical importance.

If we cannot maintain tight control over the harvest of the endangered Snake River Chinook, many of the gains from other recovery methods will be lost.

Habitat

The Team commends the Plan's strong support for the our recommendations on the coordinating role of the Habitat Committee, emphasis on the effective monitoring of habitat protection and restoration progress; and the need for management agency and stakeholder participation in development of long-term sub-basin habitat management plans.

However, the Team is disappointed that the specific actions the Team recommended (e.g., an immediate moratorium on further non-fish-related development of critical habitat areas), and which were included in earlier NMFS Plan drafts, became "watered down" in the final draft to the status of federal agency guidelines rather than ESA-mandated specific actions. As a result, implementation of the proposed habitat protection and recovery measures will depend upon NMFS ability to persuade cooperative supportive action by other federal agencies, without the certainty of ESA-mandated directives. The Team urges NMFS to be strongly proactive in driving toward that essential multi-agency cooperative action.

I have sent copies of this letter to the two members of Congress who have asked us to review the NMFS Recovery Plan.

As we have said before, we appreciate the time and effort that you have made to attempt to bring the NMFS Proposed Recovery Plan into agreement with the Team's final recommendations.

We continue to hold the view that we expressed earlier. Time is not on our side and the continuation of argument or legal challenges, regardless of merit, will surely damage the Snake River sockeye and chinook salmon.

If you need further information or explanations of our comments please call upon us.

Sincerely yours,

Donald E. Bevan, Ph.D.

For the Snake River
Salmon Recovery Team

cc:
Senator Mark Hatfield
Congressman Norm Dicks

STATEMENT OF ALLAN L. EGBERT, PH.D., EXECUTIVE DIRECTOR, FLORIDA GAME AND FRESHWATER FISH COMMISSION

Thank you, Mr. Chairman, for the opportunity to appear before you today. I am Allan Egbert, Executive Director of the Florida Game and Freshwater Fish Commission and I am accompanied by Gary Taylor, Legislative Counsel of the International Association of Fish and Wildlife Agencies (IAFWA). I appreciate the opportunity to share with you the experiences of Florida, and the perspectives of all 50 State fish and wildlife agencies, on the Endangered Species Act. We believe that the Act is a vital tool in the conservation of fish, wildlife and plant species threatened with extinction. However, we also believe that improvements to the Act will make it more effective in meeting its conservation objectives, more user friendly to private landowners, and, in general, more capable of ensuring the conservation of the natural communities on which both fish and wildlife and people depend.

The International Association of Fish and Wildlife Agencies, founded in 1902, is a quasigovemmental organization of public agencies charged with the protection and management of North America's fish and wildlife resources. The Association's governmental members include fish and wildlife agencies of the States, provinces, and Federal Governments of the U.S., Canada, and Mexico. All 50 States are members. The Association has been a key organization in promoting sound resource management and strengthening Federal, State, and private cooperation in protecting and managing fish and wildlife and their habitats in the public interest.

The State fish and wildlife agencies have broad statutory responsibility for the conservation of fish and wildlife resources within their borders, including on most Federal public lands. The States are thus legal trustees of these public resources with a responsibility to ensure their vitality and sustainability for present and future citizens of their States. State authority for fish and resident wildlife remains the comprehensive backdrop applicable in the absence of specific, overriding Federal law.

During the last 20 years, a number of congressional enactments have expanded Federal jurisdiction over certain species of fish and wildlife traditionally managed by the States. However, except for certain species of marine mammals, under these congressional enactments, State jurisdiction remains concurrent with Federal authority for endangered and threatened species, migratory birds, and anadromous fish. All 50 State fish and wildlife agencies have Section 6 cooperative agreements with the USEWS for the conservation of vertebrate species and some invertebrates, and several have agreements for plants.

As you can thus see, Mr. Chairman, the States have statutory responsibility for threatened and endangered species before they are listed, share responsibility with the Federal agencies once they are listed, and assume full responsibility again for species once they are recovered and delisted. The State fish and wildlife agencies work closely with private landowners and local jurisdictions throughout this process, and we believe that our insights can improve the effectiveness of the Act for both fish and wildlife and the citizens of the Nation.

The Association's fundamental recommendations for legislative improvements to the Act are generally embodied in these five areas: (1) affirmation of the role of the States; (2) focus on preventive management; (3) providing certainty and incentives (including assistance) to private landowners; (4) reemphasizing recovery actions to restore listed species/habitat sustainability; and, (5) improving the effectiveness of the Act through administrative improvements.

These recommendations are underlain by three key precepts: (1) the need to provide legislative certainty to the jurisdictional roles of the Federal/State agencies as co-administrators of the Act; (2) the need for a coordinated or joint Federal/State rulemaking to define standards for certain decisions; and, (3) and the creation of rebuttal presumptions for the validity of State information.

The need for the rebuttable presumption precept was brought into focus for me with the publication of a recent biological opinion prepared by the Fish and Wildlife Service's Vero Beach staff on the potential impacts on Florida panther of recreational access to public lands from Alligator Alley, now Interstate 75, and the impacts of the recreational activities such access would allow. The only information sought from the Game and Fresh Water Fish Commission by the USFWS was for a computer printout of locations of radio-instrumented cats in the area. At no time did the USFWS solicit our comments, assistance, opinions or interpretations of the data our scientists have collected in the region over the past 15 years. It should come as no surprise that we absolutely and categorically reject the findings and conclusions of the biological opinion and register our frustration at the USFWS's unwillingness to ask for or consider our input and recommendations which we believe,

based on our data, would provide the appropriate balance between conservation of panther habitat and properly regulated public recreational use.

The Association appreciates the steps announced and being administratively implemented by Secretary Babbitt which are consistent with our thinking regarding appropriate reform to the ESA. As you may know, we worked closely with the Secretary on these changes. The Association also strongly encourages the Congress to legislatively endorse the changes administratively made by the Secretary, and to accept also those recommended legislative changes advanced by the Secretary in March 1995.

I would like to focus the remainder of my remarks on prevention and recovery activities.

As you are aware, Mr. Chairman, reversing the decline of species should occur before these species reach a level where it is necessary to impose the ESA in order to protect these species from extinction.

The Association reaffirms its commitment to prudent conservation of fish, wildlife and the natural communities that they depend on, so that the need to impose the rigors of the ESA is minimized. We do not advocate avoiding the application of the Act; rather, we advocate addressing species and habitat declines before a crisis situation is reached. We need, where possible, to anticipate impacts (from development and other projects) on species and habitats, and address those comprehensively, rather than reacting to them.

The ESA can and will play a role in our preventive management programs, but should remain primarily as the necessary tool of last resort for protecting against extirpation. Through the use of preventive management actions, the ESA could then fulfill a more appropriate role of dealing with species undergoing precipitous decline.

Federal and State conservation agencies should cooperate in coordinating the application of the many existing Federal statutes relating to public lands management (NFMA, FLPMA, etc.), habitat conservation (CWA, CAA), and project impact review (NEPA, etc.); comparable State laws (State nongame and endangered species laws; State environmental review statutes and programs); and county and local land use planning ordinances and programs. A more comprehensive integration of the relevant statutes at all levels will enhance their utility for the conservation of fish and wildlife and their habitats, ensure the sustainability of ecological communities, and preclude the need to list species.

Further, there needs to be a major thrust (distinct from ESA reauthorization) to broaden the highly successful user-fee concept under the Pittman–Robertson and Wallop–Breaux programs to meet today's broader conservation challenges, enabling State/Federal programs for the conservation of the vast majority of non-game fish and wildlife currently receiving less than adequate attention, and thereby providing the means to prevent species from becoming endangered. Based programmatically on the highly successful Sportfish and Wildlife Restoration Programs under the Wallop–Breaux and Pittman–Robertson Acts, the Fish and Wildlife Diversity Funding Initiative, supported by the LAFWA, by all 50 State fish and wildlife agencies, and by a growing grass-roots coalition across the country, is designed to secure permanent, dedicated funding, based on user-fees, to provide among other things, the prevention of species becoming endangered, through the provision of routine fish and wildlife management practices.

Finally, the Association encourages the use of legally binding Conservation Agreements for declining or candidate species in lieu of listing as threatened or endangered, where management actions specified under such an agreement remove the threat(s) to the species, and where the Agreement is enforced. Comprehensive habitat based agreements should be encouraged. Clarification of the Endangered Species Act to support such Conservation Agreements is required and affirmation of State authority for pre-listed species must be legislatively assured. The role of the State fish and wildlife agencies in this process must be affirmed and institutionalized. By requiring the Secretary to concur with Staled conservation agreements involving affected jurisdictional entities and private landowners (where appropriate), the Secretary will be legally shielded from a requirement to impose certain regulatory implications through suspension of the consequences of listing. Private landowners should be given legal assurances that, once they commit to certain responsibilities under the agreement, no additional liabilities under Section 9 will be imposed upon them. The incentive for Federal agencies to participate is that they obviously incur no liability under Section 7 if actions to recover declining species are taken prior to listing.

Once a species is listed we need to make every effort to address those factors which will result in the recovery of the species and its ultimate delisting. The intent of the Act is to *recover* species not just list them. The States can and should play

a major role in recovery planning and implementation with the assistance of local governments, private organizations and non-governmental organizations.

State fish and wildlife agencies must be given the opportunity to take the lead on recovery plans, or in the absence of an appointed recovery team, to provide professional review of draft recovery plans prepared by a FWS or NMFS staff or contractor. The utility of a team approach not only provides for application of a broad base of knowledge and perspectives, but also better intergovernmental coordination regarding biological, social, economic and environmental factors. State fish and wildlife agency participation brings in experience in working with both private landowners and local land use regulatory agencies (county Planning & Zoning agencies, for example) both of which are vital to the success of recovery programs.

A case in point is the development of the "Florida Panther Habitat Preservation Plan," a document that was to be jointly developed to identify ways to preserve panther habitat in southwest Florida with an emphasis on retention of those lands in private ownership. The Fish and Wildlife Service offered, and subsequently assumed, to be the lead in the development of that document. By the second draft, a draft that was published in the Federal Register, the preservation plan had become an acquisition plan, apparently in part because of commitments made by the Fish and Wildlife Service in an out-of-court settlement action relating to captive breeding. We endured at least four subsequent rewrites of the plan before it was revised to its original purpose, and to our satisfaction, a plan to pursue less than fee-simple habitat conservation to benefit Florida panthers. However, the landowner citizens of southwest Florida to this day remain convinced that the Panther Habitat Preservation Plan is nothing but a government land-grab.

As one might expect, the local people turned to the agency they considered most responsible for wildlife management in Florida, the Game and Fresh Water Fish Commission. In their eyes, the Commission was no less responsible than the FWS despite our protests to the contrary. State fish and wildlife agencies can, if asked, assist a willing Federal partner avoid some pitfalls.

We believe, Mr. Chairman, that recovery plans should be more than just discretionary blueprints for recovery which end up on a shelf. Recovery plans need to become the compelling focus of efforts which ultimately coordinate actions among jurisdictions and private landowners to bring the listed species and habitat to levels where they are self sustaining. We envision recovery plans, where appropriate, to be implemented by binding implementation agreements which will detail the responsibilities and actions of the parties to the agreement, and also provide certainty for those parties once the agreement is executed. We believe that these certainties, plus clear authority or exemptions for actions consistent with recovery plans, will provide great incentive to private landowners, other Federal agencies and affected jurisdictions to participate in the recovery planning/implementation process.

In short, we believe that recovery plans should:

(a) be binding on all jurisdictions through implementation agreements;

(b) identify population and habitat objectives which, when attained, would trigger down- or delisting;

(c) contain, if appropriate, designation of critical habitat, which designation should remain the discretion of the Secretary or the State involved; designation during recovery planning can generally be much more enlightened and science-based than at listing;

(d) provide expedited Section 7 approval for Federal agency actions that are consistent with recovery plans;

(e) provide "short form" HCPs for private landowners for certain activities, and (where appropriate) exemption from Section 9 and 10 restrictions for others;

(f) provide certainty to cooperating landowners regarding their land management activities under the ESA;

(g) be exempt from NBA if States assume recovery plan lead and if comparable State process is satisfied;

(h) satisfy plan amendment requirements for ESA under NFMA, FLMPA and other Federal land management acts if actions are consistent with the recovery plan; and

(i) identify opportunities to offer cooperating private landowners economic incentives in exchange for conservation easements or leases.

A recurrent argument we have heard expressed in Florida is the government collectively has tended to make wise stewardship a potential liability for farmers and ranchers, especially when the stewardship results in listed species occupying the properties. Listed species are increasingly not welcome in some quarters as a result. Our landowners ask why should they individually bear financial burdens of sustaining, rather than developing, listed species habitat when they see society at large as the beneficiary of listed species conservation and recovery. We look forward to the

hearings scheduled for next week in the hope that those proceedings will identify practical, realistic means of financial compensation or other incentives for recovery contributions made by private property owners.

The Association suggests that additional focus and attention on recovery planning and achievement will lead to species population status commensurate with down- or delisting. As we have previously indicated, legislative criteria linking the *process* of down- or delisting action to meeting objectives in approved recovery plans, should be mandated. Incremental down- or delisting by State or geographic population should proceed with much greater attention than it now receives. De-listing must be maintained and activated based solely on biology, and should not be delayed because of other objectives. Monitoring should continue (by the State(s)) for a period of time to ensure confirmed recovery.

The Association recommends that the States be authorized to design and develop monitoring programs on delisted species with recognized (by the Federal agencies) full legal responsibility for species conservation. The Secretary's emergency authority to relist would remain, after consultation with affected States, upon determination of a significant decline of any species which has recovered and been subsequently delisted.

Further, Mr. Chairman, while we support enhanced appropriated funding for all aspects of the ESA, we realize that Federal budgets are shrinking, and that we can't expect a windfall of Federal dollars to come to the States as we appropriately assume greater responsibility under the ESA. We would, however, strongly urge a refocus of appropriated dollars so that Section 6 funding can be significantly increased. The amount available in recent fiscal years to the States is both grossly inadequate, and not at all proportionate to the responsibility of the State fish and wildlife agencies for listed species. We also suggest that as States assume a greater lead in administering the ESA, Congress should redirect some of the other Federal appropriations now going to USFWS and NMFS to the States for funding implementation of the Act.

At the same time, we believe that existing funding needs to be more effectively spent, and alternative funding sources explored. The Association suggests that continuing to spend substantial money on species that are essentially recovered, at least in part of their range (as the bald eagle), should be from sources other than those available under the ESA. The USFWS, NMFS, and the State fish and wildlife agencies all need to explore the process for assigning funding to listed species to ensure that those in the most significant need of recovery attention (and not those that are the most charismatic) are addressed first.

Before I conclude, I must tell you of some of our listed species recovery success stories, lest you conclude that we see only wrong and little right with the ESA.

Bald eagles have increased in Florida from 350 to 400 nesting pairs 10 years ago to more than 800 pairs today. The bald eagle population distribution has also expanded in our State. No nests existed 10 years ago in northwest Florida, but nests now occur in seven Panhandle counties. Recovery accomplishments have taken place in a growing Florida due in part to the application of jointly developed bald eagle protection guidelines: a land management tool that effectively balances the protection of nesting bald eagles with private land use. The Florida population has increased while providing eggs to seed bald eagle population recovery in many other parts of the nation. Due in part to the dramatic recovery in Florida, the bald eagle is scheduled for removal from the Federal list of endangered and threatened species this year.

The brown pelican serves as another successful example. Their numbers have increased in Florida from 6,000 to 7,000 nesting pairs in the early 1980's to more than 14,000 pairs now. The American alligator has recovered from endangered status in the early 1970's to the point that a substantial sustained yield harvest is now regulated, and provides alligator products with an estimated wholesale economic value of $32 million per year from Louisiana and Florida.

Despite controversy, we remain hopeful that we can find a way for panthers to continue to survive in a State with 14 million people. To accomplish that will require insight and flexibility, a flexibility that would be hastened, we believe, by these recommendations.

The Florida panther recovery program has diverted attention from another existing project, our joint Federal–State effort to establish a nonmigratory flock of whooping cranes in the Kissimmee River Valley. So far, the cranes are adapting well and we expect to be successful.

Finally, the Association reemphasizes that it is vitally important to secure funding (separate from ESA) for the States to provide support for conservation programs for nongame fish, wildlife, and their habitats in order to facilitate a conservation

safety net *before it is necessary to impose the ESA to prevent species extinction.* This preventive management just makes good biological and economic sense.

The Association's fish and wildlife diversity initiative, which broadens on the tremendously successful Pittman–Robertson and Wallop–Breaux user pay-user benefit programs for wildlife and sportfish, would provide such funding from user fees on other outdoor recreation products. These funds would be allocated to the States for conservation, recreation, and education programs relating to fish and wildlife and their habitats. If we can address the limiting factors causing a species decline before they reach a stage where the ESA is the only protection against extinction, we can employ a series of voluntary, nonregulatory approaches which provide more flexibility and creativity in our conservation programs with private landowners and other jurisdictional entities. We would appreciate the opportunity at some time in the future to bring the details of this initiative before you.

Thank you, Mr. Chairman, for the opportunity to share our perspectives with you today, and I would be glad to address any questions you might have.

STATEMENT OF DR. J. MICHAEL SCOTT, RESEARCH BIOLOGIST, NATIONAL BIOLOGICAL SERVICE

Senator Kempthorne, Senator Reid, members of the Committee, thank you for the opportunity to speak with you today. I have 21 years of field experience working with endangered species. Nineteen of those were as a research biologist with the Fish and Wildlife Service, and the last two were with the National Biological Service. I want to make clear today that I am testifying as a research biologist and not as a representative of the administration on the Endangered Species Act.

The National Biological Service has a broad mission-to work with others to provide the scientific understanding and technologies needed to support the sound management and conservation of our Nation's biological resources. As part of that mission, the National Biological Service works on a range of species that are declining or otherwise of concern—including those that are listed under the Endangered Species Act. However, working with endangered species is a relatively minor portion of the National Biological Service's activities; the majority of the National Biological Service's budget is dedicated to providing information needed by a wide range of land and resource managers within the Department of the Interior and to others, such as State fish and game agencies. When the National Biological Service works with declining or listed species, the agency focuses more on providing early information that will allow conservation work to begin before species are listed and on developing a comprehensive understanding of complex biological systems that is needed to craft successful solutions. In essence, the National Biological Service actions are directed at avoiding the need for listings where possible and providing solid scientific information for good solutions when necessary.

As an employee of the National Biological Service, an agency devoted to providing high-quality, rigorous science, I will speak today about research that my colleagues and I have been involved with that has attempted to separate myths from reality regarding the Endangered Species Act recovery process. In addition, I will describe one approach to biodiversity conservation planning that works in conjunction with the Endangered Species Act. In both research efforts we are striving to develop accurate information bases for use by those making management and policy decisions regarding our Nation's biological resources.

There is solid, scientific evidence we are at risk of losing critical components of our Nation's natural wealth and beauty. Many of our species and ecosystems are in peril. In addition, many habitat types and their associated species are left outside special management areas. This has occurred despite an extensive network of special management units, including national parks, national forests, wildlife refuges, wilderness areas, and more.

Research has shown that in order to protect the Nation's living resources, its biological diversity, we need to protect the key to its survival. In almost all cases, this boils down to providing habitat of adequate quality and quantity to ensure the long-term survival of species and the processes of the ecosystems in which they are found. Some claim the Endangered Species Act overprotects; to others the protection is not aggressive enough. In our research, we sought to address the validity of these claims.

As constructive evaluation of the Endangered Species Act recovery process, our research focused on recovery plans because they are a crucial link between classification of a species as threatened or endangered and the management steps required to recover the species. We reviewed all 314 available recovery plans approved by the

Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) as of August 1991.

Not surprisingly, given the rarity of species discussed in recovery plans, we found that 81 percent of original recovery plans identified additional data needs. While some ecological concepts received wide mention, substantial detail was often lacking. For example, limiting factors were noted in 97 percent of the plans, yet only 8 percent of the plans distinguished between proximate factors (causal factors or mechanisms that act on individuals) and ultimate factors (survival or adaptive factors responsible for the decline of the species).

More specifically, less than half of the species in original recovery plans had any estimate of species' population size, and less than 10 percent had any information on survival or home range. These basic data are critical to the success of any recovery effort and their absence is of concern if the recovery program as a whole is to succeed. We need more sound and objective science, not less, if we are to save species from unnatural extinctions.

In order to assess the claim that the Endangered Species Act and, hence, recovery plans attempt to save too much, we looked at two key issues. The first was whether the Endangered Species Act overemphasized subspecies as opposed to full species. The second was if the actual goals set to recover species were realistic.

We found the criticism that recovery plans overprotect subspecies to be unwarranted. In North America, there are approximately seven subspecies for every species of mammal and five subspecies for every species of bird. In recovery plans the ratio is much less: approximately the same number of species and subspecies of mammals and birds are addressed by recovery plans.

The underemphasis may be even greater than these numbers suggest, as we expect subspecies will become imperiled before full species.

The ultimate goal of recovery is to restore the listed species to a point where they are viable, self-sustaining components of their ecosystem. In this sense the term viability can be loosely interpreted to mean long-term persistence. We assessed recovery goals using two different measures of a species' abundance which are often used as indicators to assess viability: the total number of individuals and the total number of separate populations. For the recovery plans that stated recovery goals in terms of numbers of individuals, 28 percent set recovery goals at or below the number of individuals that existed at the time the plan was written. Recovery goals for numbers of populations were even less ambitious, as 37 percent had recovery goals set at or below existing numbers of populations.

We also assessed recovery goals against one widely used standard for endangerment which revealed a similar but even more severe discrepancy. According to that criterion (using the same estimates for numbers of individuals and populations), approximately 60 percent of the Endangered Species Act's Threatened and Endangered species would remain in peril if their recovery goals were achieved.

We propose that setting recovery goals at or below what currently existed at the time the recovery plan was written is counterintuitive to the concept of recovery. Presumably, if a species is in peril, as listing confirms, then recovery should increase the number of individuals. In fact, our results suggests that this does not always occur. While some of these cases may be explained by the removal of threats and stabilization at a lower level, it is clear that as a general rule, recovery plans do not overprotect.

There are a variety of reasons-including cost, practicality, and political feasibility-that may influence the ability to move toward a biologically established recovery goal.

Our findings suggest that it is important to focus solely on biology when assessing risk of extinction and setting recovery goals. Then, when we set about the task of determining the potential solutions to *achieving* recovery, social and economic concerns can and should be incorporated and, in fact, the Fish and Wildlife Service has adopted this approach as part of their policy on recovery plans. In this way, we may be able to reduce conflict and encourage consensus. More specifically, we have suggested setting recovery goals in two timeframes: (1) a long term goal based exclusively on biological criteria and (2) a range of short term solutions that explicitly state the relationships between biological and non-biological concerns that depict a variety of possibilities that will eventually achieve the long term goal.

I would like to take my National Biological Service hat off for a moment to make some personal observations that spring from my 21 years of observation and study of the ESA, many of them with the Fish and Wildlife Service. Despite successes, such as the bald eagle, the peregrine falcon, the brown pelican, the Aleutian Canada goose, the whooping crane and the grey whale, the focus on single species has become burdensome, largely because the magnitude of the number of species at risk was never envisioned. We wait too long to initiate support and protection, which re-

sults in greater costs and increased conflicts. It is a reactive strategy which has been unable to keep up with the rate at which species are becoming threatened.

The Endangered Species Act needs help to achieve its full potential for preventing unnatural extinction. I propose the best way of doing this is to augment the important strengths and successes of the Endangered Species Act at the species level, with a more proactive focus on conserving our Nation's biological diversity, one that focuses on habitat—the homes of the species. The key to recovery and long-term viability is maintaining habitat. To illustrate this concept, take for example the coastal sage scrub ecosystem of southern California. When I was a boy growing up in San Diego, coastal sage was common and widespread. At present, it contains two listed species, the threatened California gnatcatcher and the endangered Stephens' kangaroo rat. However, there are 53 associated candidate species awaiting evaluation for listing. If we had taken steps to protect this ecosystem years ago while it was still common and its associated species were not in peril, then we would have had much more latitude to work out solutions that were economically acceptable and biologically defensible. The Fish and Wildlife Service has taken steps to incorporate this strategy, as it is concentrating more on preparing multiple species recovery plans that stress supporting entire communities as an integrated unit rather than one species at a time.

I believe that taking a proactive approach and attempting to protect the habitat that species require, while these communities and ecosystems are still common, will provide a more cost-effective strategy for protecting our Nation's diverse biological resources and effectively complement the actions of the Endangered Species Act at the species level.

I will put my NBS hat back on this time. The Gap Analysis Program (GAP) provides the information needed for just such an approach. GAP has already been effectively initiated in 43 States, in which collective private, State, and Federal partnerships operate as the economic backbone of each project, with substantial funding coming from many of the partners including the private sector. While GAP is a national program, its objectives and data sets are driven in large part by local needs. GAP is a means of providing geographic information on occurrence of wildlife and their habitats. GAP presents a scientific method for identifying the degree to which native wildlife species and natural communities are or are not represented in our present-day mix of special management lands. Those species and communities not adequately represented in areas that are being managed for the long-term maintenance of native species constitute "gaps" in the maintenance of our Nation's biological diversity. GAP presents information in an easily understandable format, i.e., maps that provide a much needed common information base upon which to build negotiations and eventual solutions.

One of the greatest strengths of GAP is that it is a grass roots approach to planning and management of our Nation's biological diversity, providing information to State and county governments that meets some of their planning needs. Perhaps the best examples of this are from Utah where GAP has been completed. The information has been used by State and Federal agencies as well as private businesses for land use planning, ranging from assessing potential sites for a lumber mill to land use planning in several counties. GAP data sets have been used in California and Idaho for similar efforts.

In summary, our research suggests that the Endangered Species Act is not overzealous in its attempt to protect and conserve our Nation's invaluable biological resources. Instead, in some cases it has underprotected them. We need to complement the act through more proactive efforts to maintain viable populations of species and their habitats while they are still common, thus reducing the number of species that become endangered or threatened and combining greater chances of success with economic efficiency. All of our land planning and wildlife conservation efforts require more high quality information than is currently available. Successful recovery efforts also require that we work together through State, Federal, and private partnerships to solve natural resource issues of mutual interest.

Thank you again for the opportunity to speak to you today.

STATEMENT OF DR. ROBERT J. TAYLOR, DIRECTOR OF WILDLIFE ECOLOGY, CALIFORNIA FORESTRY ASSOCIATION

My name is Robert Taylor. I am the wildlife ecologist for the California Forestry Association. I work almost exclusively on research, management, and policy problems with threatened and endangered species. I have been asked to provide my perspective on the recovery planning process, on downlisting, and on delisting. I will begin with a set of changes I would like to see made to procedures for post-listing

planning and then conclude with an example from California that explains why I ask for these changes.

The need for intensive planning after a listing decision is acute and is not done often enough or well enough under the existing law. I doubt that you will get testimony that disagrees with that assertion. The only disagreement will be with the form that planning should take. Four components should be incorporated in post-listing planning.

1. Planning should be done in a sequence of stages, first on the geographic scale of the entire species, then at the level or levels of the States and other regulatory bodies, and finally at the level of the landowner. Typically it is now done only at the level of the landowner, at the landowner's cost, without guidelines and effective planning tools.

2. Both time and funding should be provided for necessary post-listing research. It is frequently much easier to establish that a species is in trouble than it is to figure out why it is in trouble or what can be done about it.

3. Recovery planning should be done in an open, public process employing a formal Federal advisory committee. This may be slower and more expensive than having the agencies work alone, but it dramatically improves the potential for conflict resolution and makes it much more likely that economic and social costs will be evaluated honestly.

4. Finally, post-listing plans should include operational guidelines for downlisting and delisting, including descriptions of delistable units and standards for population size and geographic distribution.

Without adequate post-listing planning, the wheel of listing will remain a ratchet that can turn in only one direction, unless, of course, a Secretary of the Interior wants to influence a reauthorization debate. Allow me to explain why I say this.

In 1992 I was instructed to conduct a research program on the northern spotted owl in California to assess whether a petition to remove the owl from the list of threatened species could be justified. At that time, the industry had been gathering field data intensively for 3 years. Over the next year and a half my research staff combed the State for those data, which I put into a computer data base and gave to the State for validation. I then conducted a study of the forests surrounding a random sample of nest trees to provide the first reliable description of owl habitat on private land. I commissioned a study at the University of Washington to evaluate theoretical methods for trend analysis. And I hired a couple of postdoctoral scientists to help me forge a computer-simulation model of the owl population for more accurate trend analysis.

Taken together, these studies indicated that the owl population was large and stable, and it flourished in commercial second-growth forests; therefore, I recommended submitting a petition for delisting. I was confident that the quality of the science was good and was prepared to have it reviewed by other scientists. The Fish and Wildlife Service completed its 90-day review nearly a year later and rejected the petition, without looking at any of the data and theory, on the grounds that the owl population in California was not a delistable unit.

I realized, before beginning this project, that defining a delistable unit was an issue. I questioned the Service in 1992 about whether the owl could be delisted in California alone. At that time, the newly released Draft Recovery Plan recommended delisting the owl on a province-by-province basis and used the California–Oregon border to define three provinces. On the local level the Service had no answers, noting that this was a policy question to be answered in Washington. Washington said that it was working on the question but had no ready answer. And so I turned to legal advice, read testimony in court cases, and examined past delisting and downlisting cases for a guide to how the Service might respond to a petition. This information led me to believe that political boundaries could be used in defining delistable units, particularly when, as in our case, they implied dramatically different regulatory environments.

In rejecting our petition the Service disavowed its own Draft Recovery Plan, claiming that delisting could only be done for a distinct population segment. California's owl population apparently does not qualify as one. Unfortunately the Service is not prepared even yet to tell me what portion of the owl's range qualifies as a distinct population segment.

In conclusion, in California my industry has tried to play the endangered species game by the rules. We did not sue anybody when the owl was listed. We did not hire a PR firm and lobby Congress to take it off the list. We collected data to document what we considered to be an absurd listing decision and submitted those data through proper channels. We were met with a wall of passive indifference, even though many of the Service's field personnel agree that our data are correct. Our

enormous investment of time and resources has accomplished nothing, other perhaps than to spur the Service to make an ad hoc modification of its rules.

STATEMENT OF DAVID LANGHORST, EXECUTIVE BOARD MEMBER, IDAHO WILDLIFE FEDERATION

Good morning. My name is David Langhorst and I am here to testify on behalf of the National Wildlife Federation, the Nation's largest conservation education organization. I serve as Executive Board member of the Idaho Wildlife Federation, one of NWF's 45 affiliated conservation organizations throughout the United States. NWF and its affiliated organizations have an active and longstanding commitment to ensuring the conservation of our Nation's wealth of biological resources. We are currently performing an extensive review of the Endangered Species Act's record of implementation and will soon be offering an array of new policy proposals. In the meantime, we are pleased to be able to offer some of our ideas relating to the ESA recovery process here today.

The ESA has produced a remarkable string of successes. In its 23-year history, it has stabilized or improved the conditions of hundreds of plant and animal species that had been in serious decline. In my own work as Executive Director of the Wolf Education and Research Center in Ketchum, ID, I have seen large numbers of concerned citizens work with the ESA to help bring about the recovery of the gray wolf in the Northern Rockies ecosystem. By educating communities about the importance of the wolf to the health of the ecosystem and using the ESA's flexible provisions, we are successfully restoring this wonderful animal to the wild in a manner sensitive to local economic interests.

The gray wolf recovery effort is a model of how diverse groups of local citizens can work together and achieve results using the ESA. However, as a result of delaying tactics by narrow ranching interests, wolf recovery is taking too many years and is generating inordinate costs to the Federal taxpayer: the delay was intentional. Meanwhile, during the period of the wolf recovery effort, the recovery of numerous other listed species is being neglected.

NWF believes that the ESA can and should be revised to make the law work better for both people and endangered species. In a moment (Section II), I will recommend revisions to the ESA that would expand public participation in recovery and greatly enhance the prospects that threatened and endangered species will recover and no longer need the protections of the Act. But first (Section I), I would like to address the central purpose of the ESA—to protect and recover all of the Nation's imperiled plant and animal species—and discuss the enormous benefits to people that the law provides.

I. THE NEED TO SAVE ALL SPECIES

Certain regulated industry groups are now advocating that the ESA's goal of protecting and recovering all of the Nation's imperiled plant and animal species be abandoned and that the fate of each species be left to the discretion of the Secretaries of Interior and Commerce. Such an abandonment of the ESA's goal would be unwise for at least two reasons. First, conserving the fullest extent of our natural heritage provides enormous benefits to people, benefits that greatly exceed the costs of protection measures. Second, the alternative—separately deciding the fate of each species using a cost/benefit analysis—is simply unnecessary, unworkable and would be extremely wasteful considering the numerous ESA procedures already in place to ensure that economic consequences are considered before the law is implemented.

Congress established the goal of protecting and recovering all imperiled species when it first enacted the ESA in 1973. This ambitious goal was not chosen carelessly, but was arrived at after Congress determined that the rapid loss of biodiversity in the U.S. and abroad posed a direct threat to the well-being of the American people. When the law was reauthorized in 1978, 1982 and 1988, Congress reaffirmed that recovering all threatened and endangered species was essential.

The scientific evidence that motivated previous Congresses to set the goal of recovering all species has only strengthened in recent years. Today there is no dispute in the scientific community that human activity has brought about a loss of biodiversity not witnessed since the cataclysmic changes ending the dinosaur era 65 million years ago. Edward O. Wilson, the eminent Harvard biologist, estimates that the current extinction rate in the tropical rainforests is somewhere between 1,000 to 10,000 times the rate that would exist without human disturbances of the environment. According to the recent study of the ESA by the National Academy of Sciences (at p. 29), the "current accelerated extinction rate is largely human-caused and is likely to increase rather than decrease in the near future."

This rapid loss of biodiversity is occurring not just in the tropical rainforests. In the nearly 400 years since the Pilgrims arrived to settle in North America, about 500 extinctions of plant and animal species and subspecies have occurred—a rate of extinction already much greater than the natural rate. According to recent calculations by Peter Hoch of the Missouri Botanical Garden, over the next five to 10 years another 4,000 species in the U.S. alone could become extinct. This evidence of increased extinctions provides sad testimony to the need for improving the ESA rather than scaling back its fundamental goal.

A. The Benefits to People of Saving All Species

It has become more apparent than ever that stemming this tide of biodiversity loss is essential for the well-being of the American people. Species are essential components of natural essential materials, regulate local climates and watersheds, and satisfy basic cultural, aesthetic and spiritual needs. Below are six examples of how endangered species protections help people.

1. New Medicines to Respond to the Health Crises of Tomorrow

Wild plant and animal species are an essential part of the $79 billion annual U.S. pharmaceutical industry. One-fourth of all prescriptions dispensed in the U.S. contain active ingredients extracted from plants. Many other drugs that are now synthesized, such as aspirin, were first discovered in the wild.

Researchers continue to discover new potential applications of wild plants and animals for life-saving or life enhancing drugs. In fact, many pharmaceutical companies screen wild organisms for their medicinal potential. Yet to date, less than 10 percent of known plant species have been screened for their medicinal values, and only 1 percent have been intensively investigated. Thus, species protections are essential to ensure that the full panoply of wild plants and animals remains available for study and future use. Below are three examples of pharmaceutical benefits.

- More than three million American heart disease sufferers would find their lives cut short within 72 hours without digitalis, a drug originally derived from the purple foxglove plant.
- The endangered Houston toad, on the verge of extinction due to habitat loss, produces alkaloids that may prevent heart attacks or act as an anesthetic more powerful than morphine.
- The National Cancer Institute is now studying four plant compounds—from a Malaysian tree, a tropical vine in Cameroon, a bush from Western Australia and a Western Samoan tree—that show promising results in stopping replication of the HIV–1 and HIV–2 viruses, the precursors to AIDS, in laboratory tests.

2. Wild plant species that safeguard our food supply

The human population depends upon only 20 plant species, out of over 80,000 edible plant species, to supply 90 percent of its food. These plants are the product of centuries of genetic cross-breeding among various strains of wild plants. Continual cross-breeding enables these plant species to withstand ever-evolving new diseases, pests and changes in climatic and soil conditions. According to a recent study, the constant infusion of genes from wild plant species adds approximately $1 billion per year to U.S. agricultural production.

If abundant wild plant species were unavailable to U.S. agriculture companies for cross-breeding, entire crops would be vulnerable to pests and disease, with potentially devastating repercussions for U.S. farmers, consumers and the economy.

- As noted by the Archer Daniels Midland Company in a September 1994 letter to the U.S. Senate in support of the Convention on Biological Diversity, today's U.S. wheat crop is under siege from a Russian wheat aphid. The only four known sources of resistance, which will enable the agricultural industry to create aphid resistant wheat strains, come from wild species found in Southwest Asia.

3. Renewable Resources for a Sustainable Future

At existing levels of consumption, nonrenewable resources such as petroleum will inevitably become increasingly costly and scarce in the coming decades. To prepare the U.S. for the global economy's certain transition toward renewable resources, Congress must ensure the health of the U.S. biological resource base. Fish, wildlife and plant species could potentially supply the ingredients for the products that drive the U.S. economy of the 21st century.

- According to a 1992 Newsweek article, "Potatoes—not to mention beetle carapaces, iridescent blue mussels, abalone shells, apples and other natural bounty—could well form the basis of the next revolution in what the world is made of. Having taken petroleum based plastics and fabrics just about as far as they

can, researchers in materials science are looking to nature for inspiration. The idea is not to fabricate bulletproof vests, tanks, and jet wings out of lowly tubers, but rather to study natural products for clues to making materials stronger, more durable, more flexible." The substance that holds mussels to rocks through stormy seas, for example, may hold clues for a better glue to use in applications from shipbuilding to dentistry.

- The jojoba plant is a promising source of oil similar to that derived from the sperm whale. The guayule shrub is rich in natural rubber and complex resin. Both plants grow in southwestern deserts and could become significant cash crops in an area unsuitable for most other agricultural purposes.

4. Early Warning of Ecosystem Decline

Scientists have long known that the loss of any one species is a strong warning sign that the ecosystem that supported the species may be in decline. A recent study in the widely respected journal *Nature* reported that loss of species could directly curtail the vital services that ecosystems provide to people. A subsequent study in the same publication suggests that destruction of habitat could lead to the selective extinction of an ecosystem's "best competitors," causing a more substantial loss of ecosystem functions than otherwise would be expected.

Negative impacts in wild species often portend negative impacts for human health and quality of life. For example, some animal species are critical indicators of the harm that heavy chemicals can cause in our environment.

- The bald eagle served as an environmental indicator of the dangers of the pesticide DDT. Efforts to stabilize the endangered bird's condition led to the discovery of the harmful shell-thinning effects of DDT on eagles and other species. DDT, which was banned in 1973, is also thought to be linked to higher incidences of breast cancer in humans.
- A National Wildlife Federation report released last year, *Fertility on the Brink: The Legacy of the Chemical Age,* demonstrates that hormone-mimicking industrial chemicals and pesticides buildup in concentration as they rise up the food chain. The result is disastrous effects on multiple species, including behavioral abnormalities in lake trout, gender blurring in alligators and gulls, and an increased incidence of cancer and low sperm count among humans.

5. Ecosystems: Life-support Systems for People

Our society has become so alienated from nature that sometimes we forget that we rely on ecosystems for our survival. Ecosystems carry out essential natural processes such as those that purify our water and air, create our soil, protect against floods and erosion, and determine our climate. For example:

- The Chesapeake Bay, the nation's largest estuary, not only supports 2700 plant and animal species, but also plays a major role in regulating environmental quality for humans. Rapid development around the Bay has sent countless tons of sediment downstream, landlocking communities that were once important ports. The construction of seawalls and breakwaters in some areas has led to rapid beach erosion in others. In addition, as of March 1993, the flow of industrial and agricultural toxins into the Bay was responsible for 13 advisories and four outright bans on catching or consuming certain fish and shellfish. This degradation jeopardizes important food sources, recreational activities, and numerous other benefits.

6. Ecosystems: Industries and Jobs Depend on Them

Healthy ecosystems enable multi-billion dollar, job industries to thrive. Examples of industries that are on the health of ecosystems are:

- *Tourism.* In 1993, tourism brought in $396.7 billion to the U.S. economy. Tourism is the fastest-growing industry in the West and the largest private employer in seven of the 11 western States.
- *Commercial Fishing.* Apart from providing a key component of the U.S. diet, commercial fishing is a $3.9 billion industry. The Pacific Coast Federation of Commercial Fishermen, a trade association based in the Pacific Northwest, has emphasized the importance of the ESA to the future of this vital industry and has urged Congress to strengthen the ESA's essential habitat protections.
- *Recreational Fishing.* Nearly 36 million Americans fish for sport in the Nation's fresh and salt waters, resulting in $24 billion in consumer spending, one million jobs, and $3 billion in State and Federal tax revenues.
- *Hunting.* Annually, over 14.1 million Americans spend 236 million days hunting a variety of game animals and migratory birds. Hunting activity results in annual consumer spending of over $12.3 billion.
- *Wildlife–Watching.* The conservation of sandhill and whooping crane habitat along the Platte River in Central Nebraska has generated significant economic

benefit for local communities. In 1991, an estimated 80,000 crane-watchers infused more than $15 million into the local Platte River economy. The cities of Rearney and Grand Island have both initiated festivals targeting crane-watchers.

- Sauk City, Wisconsin (population 4000), a primary winter roosting area for bald eagles, draws approximately 50,000 eagle-watchers each winter, generating an estimated $1 million in revenues for local businesses.
- The Kirtland's warbler, unique to Michigan, provides direct economic benefits to local communities. FWS tours of warbler nesting areas increased 7 percent in 1992, drawing 775 people from 38 States and six foreign countries. The Holiday Inn of Grayling has begun marketing to warbler-watchers and the Oscoda County Chamber of Commerce held its first Kirtland's Warbler Festival in June 1994.

When ecosystems are degraded, the result is economic distress. Here are just a few of the countless examples:

- Destruction of salmon runs on the Columbia and Snake river systems in the Pacific Northwest led to the near collapse of that region's multi-billion dollar commercial and sport fishing industries. In New England, overfishing and the resultant crash of the fishery has cost the regional economy roughly $350 million annually and the loss of 14,000 jobs.
- New York and New Jersey lost more than $4 billion in the late 1980's from beach closings due to pollution. Across the country, polluted waters have led to more than 7700 beach closings in the past 5 years.
- Every day in Florida, an average of 450 acres of forested or vegetated land is cleared, a deforestation rate about twice that of Brazil's rainforest. Meanwhile, Florida Bay and the Everglades are in serious decline due to agricultural runoff and other environmental abuses. According to the *Tampa Tribune*, such environmental degradation is jeopardizing the future of the State's multi-billion dollar tourism industry.
- The Laredo, Texas health department recently concluded that polluted water was responsible for the death of a boy who had been swimming in the Rio Bravo river. Nearly forty percent of U.S. waters are currently unfit for recreational use.

B. Industry–Backed Cost/Benefit Proposals are Unworkable, Unnecessary and a Recipe for Mass Extinction

Anti–ESA advocates propose to replace the goal of saving all species with a cost/benefit analysis to determine whether to save each species. The details of this approach can be found in S. 768, the ESA reauthorization bill introduced earlier this year by Senator Gorton. Under this bill, which Interior Secretary Babbitt has appropriately characterized as a "repeal" of the Endangered Species Act, the Secretary of Interior or Commerce would have complete discretion to allow any endangered species to go extinct if they find that the economic costs of saving the species would exceed the benefits.

Such cost/benefit analyses would likely produce an extinction of hundreds of endangered species due to human disturbances of habitat. In the absence of any legal obligation to recover species, the Secretary of Interior could ultimately succumb to political pressures and choose meager objectives for any species that dare to get in the way of industry and development. For most species, any objective short of full recovery would effectively perpetuate the continued slide toward extinction.

Even if the cost/benefit analysis could somehow be insulated from political manipulation, its outcome would still be totally unreliable. The information available to the Secretary about the costs of protecting the species in question would be extremely incomplete, because no one could know at the time of the cost/benefit analysis what human activities would ultimately threaten the species and whether those activities could be modified through the ESA consultation process to avoid or reduce economic losses.

Equally important, the Secretary would also have incomplete information about the benefits to people provided by the species. Despite years of research and development, we have only just begun to discover the beneficial uses of species. Of the estimated five to 30 million species living today on Earth, scientists have identified and named only about 1.6 million species, and most of these have never been screened for beneficial uses. As species become extinct, we simply don't know what we are losing. The species that become extinct today might have provided the chemical for a miracle cancer treatment or the gene that saves the U.S. wheat crop from the next potentially devastating disease.

Before adopting the cost/benefit approach, Congress ought to consider how such analyses would have affected our ability to produce today's miracle drugs. For exam-

ple, a cost/benefit analysis of the penicillin fungus in the years prior to the discovery its antibiotic qualities would have been a surefire recipe for extinction because no one could foresee its future role in the development of wonder drugs that would save and enhance the lives of millions of people.

There is yet another reason why we should not attempt to decide the fate of species based on a prediction of their future benefits. Species within an ecosystem are interdependent, and thus the extinction of one species potentially disrupts other species and the functioning of the entire ecosystem. As reported by the Missouri Botanical Garden, the loss of one plant species can cause a chain reaction leading to the extinction of up to 30 other species, including insects, higher animals, and other plants. Like pulling a single bolt from an airplane wing, we cannot know beforehand what effect the loss of a single species might have on the entire ecosystem.

A final flaw with the cost/benefit approach is that it is based on a false premise that the ESA lacks opportunities for consideration of economic and social impacts of listings. In fact, numerous ESA provisions require that economic and social consequences be balanced with species protection goals. Only in the decision of whether to list a species does the ESA limit consideration to biological factors. This is perfectly justified because the viability of a species is a purely scientific question. Once a species is listed, the ESA provides for the consideration of socioeconomic factors in the designation of critical habitat, the development of special regulations for threatened species and experimental populations, the issuance of incidental take permits, the development of reasonable and prudent alternatives during Federal agency consultations, and the existence and operation of the Endangered Species Committee. The Endangered Species Committee is explicitly designed to resolve any conflicts between conservation and economic goals in the unlikely event that normal ESA procedures fail.

II. IMPROVING THE ESA RECOVERY PROCESS

NWF believes that improving the recovery process should be one of the highest priorities of this Congress as it prepares to reauthorize the ESA. Recovery of imperiled species is the fundamental purpose of the ESA, and yet often the recovery process takes a "back seat" to other concerns when the ESA is considered. We are grateful that this subcommittee has chosen to focus its attention on the recovery process for a substantial part of today's hearing.

Anti–ESA advocates often contend that the ESA is a failure because few species have been removed from the Act's threatened and endangered lists due to recovery. These critics ignore two important facts. First, they ignore the fact that hundreds of species have benefited enormously from the Act's protections—many of them might be extinct today if the ESA had not been in place. Second, they also ignore the fact that species usually become threatened or endangered due to a powerful combination of biological, economic and political forces. The measures needed to bring a species to the condition where it no longer needs the protections of the ESA can often be daunting. The 22 years of progress under the ESA have been remarkable in addressing problems that have been developing for hundreds of years.

On the other hand, it is a legitimate cause for concern when each year, far more species become imperiled (and thus need the protections of the Act) than are recovered and no longer need the protections of the Act. At the present time, FWS has developed plans for only 513 of the 927 listed species within its jurisdiction. Even where recovery plans are prepared, implementation often suffers from long delays. It is clear that a new recovery process is needed—one in which all biological, economic and political roadblocks to planning and implementation are confronted.

Set forth below are NWF's key recommendations for reformulating the ESA recovery process, which were developed after careful consideration of what has worked and what has not in past recovery efforts.

1. Create a Two–Phase Planning Process

The first step that Congress could take to improve the recovery process would be to increase funding. (See discussion of funding below.) But moneys devoted toward recovery efforts could also be more wisely spent. Today's recovery planning efforts are often bogged down in discussions of implementation strategies that avoid biological and political realities. Often the discussions produce a recovery plan that contains no clear goals and inadequate explanation of the steps that will need to be followed to achieve recovery.

This situation can be remedied substantially by disentangling the two objectives of recovery planning: the setting of recovery goals based on a scientific evaluation of needs of the species; and the designing of implementation strategies to achieve those goals. Because the recovery plan the document against which all subsequent actions affecting the listed species are measured, it is essential that the scientific

evaluation of species' needs be as objective as possible. Congress can help achieve this goal by creating a "science phase" of recovery planning that precedes any planning of implementation strategies.

To ensure that the product of the scientific evaluation is meaningful, Congress should require that FWS or NMFS produce a report (subject to public review and comment) that sets objective benchmarks for recovery and delisting, including population levels as well as habitat requirements. As the recent National Academy of Sciences study of the ESA makes abundantly clear, any recovery plan that does not directly address the habitat needs of the species is likely doomed to failure. According to the study (at p. 26–27), "For most species in decline and for most of those on the edge of extinction in the U.S. today . . ., the most serious threat appears to be habitat degradation or loss."

The recovery benchmarks in the science report should be based on the best available data, gathered after consultation with States, tribes and other entities with scientific information and expertise. Again, the importance of sound science cannot be overemphasized: once the science report is finalized, its benchmarks will be the central focus of subsequent efforts to design implementation strategies.

In the second phase, the implementation planning phase, Congress should direct the recovery team to identify actions that would help achieve the specific goals outlined in the science report. To ensure that the final recovery plan is realistic in light of the constraints of the Federal agencies that will be required to carry it out, Congress should require participation not only by the biological agency (FWS or NMFS), but also by any Federal agency whose activities affect the species, especially agencies with land or water that provides habitat for the listed species.

2. Broaden Participation in Planning and Implementation

NWF has participated in a wide variety of recovery efforts for a host of threatened and endangered species, such as the grizzly bear, the wolf and the black-footed ferret. From these experiences, we have learned that the best method of promoting recovery is to provide opportunities for all stakeholders to come together and to devise solutions tailored to local conditions.

A problem with the current framework of recovery planning is that it is too often carried out by Federal agency personnel who do not have a full grasp of local concerns and the potential contributions of local stakeholders. Stakeholders ordinarily are not invited to participate in recovery planning efforts. In the absence of stakeholder participation, the wealth of information and experience that they have to offer is often lost. Moreover, the final recovery plans have little prospects for successful implementation because key people who might have assisted in implementation have not "bought in."

Congress should broaden involvement in the design and implementation of recovery plans by encouraging participation by State, tribal and local governments, as well as from conservation groups, industries, landowners with habitats of listed species, and other stakeholders in the communities where endangered species reside. This involvement can be encouraged in a number of ways.

First, Congress should encourage States and tribes to design their own recovery implementation plans. Although the ESA currently imposes no recovery obligations on States and tribes, nothing in the Act precludes these entities from taking voluntary, proactive measures to conserve species. States and tribes currently have some incentive to take such measures, because once delisted, a species falls within the jurisdiction of State or tribal wildlife laws. However, these entities are not likely to be willing to carry out a plan designed for them by the Federal Government. Congress should explicitly authorize these entities to design their own recovery implementation plans, subject to public review and comment and the approval of the Secretary of Interior or Commerce.

Second, Congress should encourage stakeholders from communities where endangered species are located to design specific recovery implementation strategies (elaborating on State plans). Local community stakeholders should also be encouraged to assist in implementation of these strategies. NWF has given considerable thought to the need for increased citizen involvement and we expect to be coming forth with more specific suggestions in the near future.

3. Increase Federal Agency Accountability

Under Section 7(a)(1) of the current ESA, all Federal agencies have an obligation to carry out their programs for the conservation of listed species. Unfortunately, Federal agencies have often neglected this responsibility to assist in recovery.

As suggested above, Congress should require Federal agencies with land or water that provides habitat for the listed species to develop implementation plans that can be incorporated into the overall recovery plan. Other Federal agencies with pro-

grams that affect listed species should also be required to prepare implementation plans. Each of these agencies should be required to commit to specific actions, with self-imposed deadlines, that will assist in bringing about recovery. Before approving any recovery plan, the Secretary of Interior or Commerce should ensure that the planned activities in the Federal agencies' implementation plans would promote recovery.

4. Encourage Multi-Species Recovery Plans

Congress should direct FWS and NMFS to develop multispecies recovery plans, including both listed and Category 1 candidate species, whenever possible. This will help ensure that the agencies broaden their focus from individual species to the ecosystems on which species depend. It will also ensure that limited recovery dollars are utilized more efficiently.

5. Create Positive Incentives for Private Landowners

Although incentives for private landowners will be the subject of a subsequent subcommittee hearing, we would like to emphasize now that there is a vital link between incentives and recovery. The ESA currently calls upon private landowners to refrain from habitat destruction, but offers no incentives for them to take affirmative steps to promote recovery. Congress should address this conservation gap by enacting a variety of measures to encourage voluntary recovery efforts. Among the incentives that Congress should consider are increased acquisitions of conservation easements, expedited land exchanges, estate tax deferrals, property tax credits for habitat creation and restoration, and voluntary cooperative management agreements. Congress should ensure that when it creates such incentives, it effectively promotes recovery by targeting funding toward those activities that are expressly called for in approved recovery plans.

6. Expand Funding for Recovery Programs

Given the continued backlog of species awaiting recovery plans, it is abundantly clear that Congress needs to expand funding for recovery plan preparation. In fiscal year 1995, Congress appropriated a mere $40 million for FWS recovery efforts and $10.3 million for NNFS recovery efforts, amounts that simply do not allow these agencies to focus sufficient attention on the statutory goal. We strongly recommend doubling these amounts so that FWS and NMFS can carry out their mandates to prepare and implement recovery plans.

Substantial funding increases are also needed under Section 6 so that States and community recovery committees can expand their role in recovery planning and implementation, as discussed above. In addition, the ESA should be amended so that tribes become eligible for Section 6 funding.

7. Maintain Habitat Protections

Recovery of species can only be achieved if the ESA's basic protections of habitat are maintained. Incredibly, ESA opponents are advocating elimination of virtually all of the ESA's basic habitat protections—despite the fact that habitat loss and fragmentation is and will continue to be the primary cause of species decline. Although these groups often claim that they merely seek to replace regulatory protections with habitat acquisitions, they have never worked for increased funding for habitat acquisitions. In fact, as reflected in the just-enacted House Interior Appropriations bill, Congress appears to be moving unwisely toward drastic reductions in the funds available for habitat acquisition. To remove habitat protections at a time of declining funding for acquisitions would be extremely irresponsible.

IV. CONCLUSION

Reauthorization of an effective Endangered Species Act is in the best interest of everyone involved. Species provide untold benefits to humans and are essential to our quality of life. By making thoughtful improvements to the ESA, we can enable private landowners and other stakeholders to take a greater conservation role, and thereby provide for both species conservation and sustainable development—for the benefit of each of us and generations to come.

I am grateful for the opportunity to testify before the Subcommittee today on this important issue. Thank you.

STATEMENT OF JOHN A. LAMBETH, PROJECT MANAGER, FAIRY SHRIMP STUDY GROUP

I. INTRODUCTION

Good Morning Mr. Chairman and members of the committee. My name is John Lambeth and I am here representing the Fairy Shrimp Study Group. The Fairy Shrimp Study Group is an organization of California businesses and statewide associations who have organized to conduct a scientific study to reevaluate the endangered status of the four listed species of California vernal pool shrimp. Our group includes the California Chamber of Commerce, the California Cattlemen's Association, Western Growers Association, and several private property owners.

Our group formed at the end of last year in response to the U.S. Fish & Wildlife Service's listing of three species of fairy shrimp and one species of tadpole shrimp as endangered or threatened. Our group suspected, as did many members of the scientific community, that at the time of listing at least two of the four species of shrimp (*Branchinecta lynchi* and *Lepidurus packardi*) were not endangered. Our principal task was to gather more information and, if our suspicions were correct, to initiate delisting proceedings.

First, Fairy Shrimp are very small freshwater crustaceans that have relatively short life cycles. They live in vernal pools and other ephemeral water bodies that appear only after it rains. Vernal pools form in areas where there are indentations and impermeable soils that retain water. In the spring and summer months, the pools dry up and appear to be dry open fields. When it rains in the winter, the pools form and remain for several weeks and then dry up after the rainy season. The shrimp hatch after the pools are inundated and lay eggs that survive through the dry season only to be hatched during the rainy season. Recently experts testified that a single pool can contain 800,000 eggs.

The listing of the California fairy shrimp has had enormous impacts on many sectors of the California economy. Because the potential range of these species of shrimp extends throughout the Central Valley from Redding to Bakersfield, approximately 400 miles long and approximately 200 miles wide, Californians have experienced a wide variety of economic impacts, including increased housing costs, the delay, increased cost or termination of many infrastructure projects including road and bridge construction, drainage improvements, and water projects. Other impacts of the listing include the delay or termination of plans to build elementary schools, mining projects, development projects, power co-generation facilities, and military base reuse projects. The listing also poses a serious economic threat to California's agricultural communities, both cattle ranchers and farmers, through disruption of routine practices for food and fiber production. A wetlands research project, as well as other biological research projects, by agricultural farm advisors and University researchers have been terminated due to the listing.

The Fairy Shrimp Study Group has spent considerable resources examining the issues surrounding this listing. Today I will report on our findings and will suggest reforms for both the listing and delisting processes.

II. ISSUES ASSOCIATED WITH LISTING DECISION

We have discovered many problems in the fairy shrimp listing decision. The two most significant of these problems are: (1) *No independent objective peer review of data underlying scientific studies,* and (2) *Because of the secretive nature of the decisionmaking process. there was no scientific review of internal scientific conclusions made by USFWS staff biologists.*

A. Absence of Independent Objective Peer Review

First, the Service relied heavily on two studies to support the listing of the four shrimp. One of these studies, a 1978 doctoral dissertation, estimated that 90 percent of vernal pools had been destroyed and the same author estimated in 1988 that the estimated loss of pools was 2–3 percent per year. Although these figures were somewhat discredited due to mathematical errors, their underlying message—that vernal pools had been decimated in California—was believed. In fact the stated "90 percent loss" was so widely accepted it appeared in published articles and in many letters and reports supporting the listing. A number of these documents were prepared by well-respected, knowledgeable scientists. According to the listing record, none of these scientists reviewed the data nor the six page dissertation that presented this unsubstantiated hypothesis. At the time of the listing, there were no other studies reviewing the extent of the habitat nor the extensive range of the shrimp.

Surveys and reviews of soil data since the listing now indicate that the historic loss is probably closer to 50 percent with most of that loss occurring many years ago when the valley was first converted to agricultural uses. Losses in the past few

years appear to be minimal with little impact on the total of remaining vernal pool acreage—approximately 1,000,000 acres.

The second study relied on heavily by the Service was a study of a utility pipeline right of way that was described as a "random 200 mile transect" in California. The authors of this pipeline study wrote to the service supporting the listing and suggesting that because the shrimp were found only on small portions of the transect, that the shrimp were endangered. In fact the final rule suggests that because only portions of the *200 mile* pipeline survey contained shrimp, that these invertebrates were rare.

Since the listing, we have discovered several problems with the claims associated with this study. First, the pipeline survey missed the most significant portions of the habitat. Attached is a map which graphically demonstrates the most glaring problem with drawing species-wide conclusions from this study. We have plotted the original scientists' estimates for habitats on a map with the pipeline right of way. As you can see, the pipeline does not follow the habitat and should not serve as a basis for scientific conclusions about the rarity of these species of invertebrates.

Second, the pipeline study surveyed only 14 sites and a total of 60 vernal pools. Ten of the 14 sites were contained all within one Northern County—Tehama County. These sites were selected by the utility company and there was no effort made to develop a statistical link between these sites and the rest of the habitat. In fact, the scientists found the listed shrimp species in almost 50 percent of the sites!

B. Internal Decisionmaking Not Reviewed

The second major problem with the listing process occurred because of *the secretive nature of the decisionmaking process.* Once all of the data was submitted to the Service, the Service's internal staff made assumptions and drew conclusions about the data. These assumptions and conclusions were not reviewed by independent scientists. In fact, many of the scientists who provided substantial information about the listing were not even contacted about much of this internal decisionmaking.

An example of this problem can be seen in the accompanying population maps. The base maps for these populations were developed by Sugnet & Associates and submitted to the Service to demonstrate the extensive range and numbers of three of the species. Although this study was criticized by the Service in the final rule because it drew conclusions based on individual data points instead of populations, it nevertheless served as the basis for the Service's calculations about populations. The Service claimed in the final rule that although the invertebrates were found in 350 and 180 separate locations for two of the species, that these locations could only be described as 18 populations and thirty-two populations. Furthermore, the service claimed that all but four of the eighteen, and four of the thirty-two populations were under threat. The accompanying maps detail the populations.

There are several problems with these maps. Although the population designations are key to the listing decision, there are no studies in the record that support the Service's population delineations. We have repeatedly asked for such information and have been told it does not exist.

The base maps for the populations show detail only to township level. One cannot determine by these maps where, within one of these thirty-six square mile boxes, shrimp were found. In some cases, the shrimp were found in a variety of areas throughout the township and in some cases in only one discrete location. The Service's population boundaries do not take these differences into consideration. Note, for example, that no population line ever crosses a township boundary. This fact would suggest that no river, mountain, valley, watershed, or other population defining geographic feature ever crosses a township boundary. We know this is not the case and that the designation of these population boundaries has little scientific support.

None of the scientists we have contacted had an opportunity to review or comment on these maps. Although these population delineations served as one of the basic tenets of the listing, their designation is deeply flawed. The populations were designed by staff biologists who were not population specialists and the Act precludes the listing of populations of invertebrates. (16 U.S.C. § 1532 (16).) This fundamental error could have been discovered had these populations not been developed in secrecy and therefore reviewed by independent scientists.

There are several other significant errors associated with the listing that we do not have the opportunity to detail today. Based on these errors and data that has been collected since the listing, we believe that two of the species are good candidates for delisting. We would like to focus on specific reforms to the listing and delisting process.

III. IDEAS FOR REFORM

A. Listing Process

First, the ESA requires that species be listed "solely on the basis of the best scientific and commercial data available," but the law does not ensure the use good science nor require adjustment due to better science. The listing process should include *objective scientific criteria for measuring endangered or threatened status.* For example, these criteria could include percentage of historical range currently occupied by the species, or it could specify the number of populations or individuals below which a species would meet the definition of either threatened or endangered. These criteria should be evaluated by an independent science panel—a panel developed in conformance with the Federal Advisory Committee Act. The panel should include only credible scientists who could provide a balance of viewpoints.

Second, the listing process should provide for *increased public participation and review.* Although the Act allows for a public hearing, the public is largely excluded from the process. We suggest allowing independent scientists and the public review and comment on the data supporting a listing and the conclusions that Service staff make from the data.

Third, management and regulatory efforts on behalf of a species should be adopted only after thorough consideration of social and economic impacts, relative risks, costs and alternative strategies.

B. Delisting Process

We now turn our attention to review of the delisting process. This process is of particular importance to our group as we may be submitting a delisting petition in the coming months. The delisting process currently is quite similar to the listing process. The Act currently provides for a two and one half year delisting process. Often, the Service is unable to meet deadlines prescribed in the Act.

First and foremost, *there should be an expedited process for delisting when a delisting is petitioned on a basis other than a recovery plan.* If a listing decision was made in error or new information suggests a different result, the law should not provide for such an extended timeline (2 to 3 years) to correct the problem. We recommend a maximum total timeframe of 7 months; 30 days for the initial review, 90 days for a proposed rule, and another 90 days for a final rule.

Consider the consequences if the Fairy Shrimp Study Group's belief about the shrimp are correct. There are invertebrates on the endangered species list that are not endangered but yet are creating tremendous economic burden on the people of California. This scenario surely deserves prompt action on the part of the Service.

The second major change to the delisting process would be to *clarify the criteria for delisting and clarify the standard that would be applied to the criteria.* As discussed above in the listing discussion, there are not specific scientific criteria in the act for considering delisting. We would suggest utilizing criteria developed for the listing decision also be applied to the delisting decision.

The standard applied to the criteria for delisting is an important issue. Although the Act and the regulations establish the same procedures and standards for listing and delisting, the Service has developed a different approach. In the Service's Draft "Endangered Species Petition Management Guidance" document released in November 1994, the Service indicates that a species will be listed if *persuasive evidence* indicates that it is warranted. (Page 37) Yet the same document indicates that a delisting can occur with new data only if *conclusive evidence* indicates a species should be delisted. (Page 55) This difference does not appear to have any support in the law, however, it is apparent that a different standard applies. We recommend inserting a uniform standard into the law that would apply to both listing and delisting. Specifically, if a "preponderance of the evidence" suggests that a species should or should not be on the list, the Service should act accordingly. This change alone would bring equity into the listing and delisting processes and would provide a sound basis for decisionmaking.

We appreciate the opportunity to present our ideas before this committee today. We have included some addendum booklets to be included in the record. These booklets have supporting materials referenced in the testimony. The Fairy Shrimp Study Group supports the protection of endangered species, but does not support the current listing and delisting processes.

We believe we have an obligation to conserve our natural resources in a responsible manner and believe our suggested changes to the Endangered Species Act would improve its implementation not only in the Fairy Shrimp example but also as it relates to all other species.

STATEMENT OF DR. ROBERT J. WIESE, PH.D., ASSISTANT DIRECTOR OF CONSERVATION AND SCIENCE, AMERICAN ZOO AND AQUARIUM ASSOCIATION

I am Dr. Robert Wiese of the American Zoo and Aquarium Association. I am currently the Assistant Director of Conservation and Science for the association and have worked for the AZA in this capacity for 5 years. By training, I am a population biologist. The AZA is a professional organization representing 170 accredited zoos, oceanariums and aquariums in North America. The majority of our institutional members are located in the United States. In addition, AZA represents approximately 6500 individuals, most of whom are employed by our zoo and aquarium members.

Let me begin by saying that the AZA supports the reauthorization of the Endangered Species Act. We believe that the Act should strike a balance between the single species approach and the multispecies or ecosystem approach to conservation. AZA believes that the role of the States in conserving endangered and threatened species should be enhanced, listing decisions should be based on sound and objective science, and incentives need to be created for private landowners to conserve listed species and their habitats.

AZA AND CONSERVATION

What do zoos and aquariums have to do with conservation? In 1980 the Board of Directors of the American Zoo and Aquarium Association voted unanimously to make wildlife conservation the AZA's highest priority. The foundation of the AZA Conservation Program is the Species Survival Plant (SSPO). The SSP originated in 1981 to address the genetic and demographic problems associated with the maintenance of small captive populations of endangered and threatened species over long periods of time. Each SSP program, under the direction of a species coordinator, allows a number of institutions to manage individual animals collectively as one large population. Each holder of the species has a voice in the management of the captive population. Holders act cooperatively to manage their specimens in the best interest of the species, moving animals from place to place to comply with SSP recommendations. The SSP program is focused on the conservation of populations and species.

Current estimates suggest that from one to five million species of animals and plants could become extinct in the next few decades, primarily due to habitat destruction. The ultimate goal of the SSP is to secure the survival of at least some of the most vulnerable and significant species of the world by maintaining viable captive populations as an insurance policy against extinction and for education and research purposes. The hope of every SSP is to enhance the security of viable wild populations. SSPs enhance species survival through conservation, education, research, fund raising and, where necessary and appropriate, reintroduction. Many SSPs seek to some day reestablish self-sustaining populations in the species' former habitats.

When wild populations become locally extinct, the only options available to conservationists attempting to establish complete former ecosystems are translocation and reintroduction. However, wild populations can also become too small or fragmented to be self-sustaining. It may then be necessary to infuse the genetic material of captive stock to maintain the wild population's genetic variability.

In short, the SSP seeks to maintain future options. However, captive breeding is not a panacea for the endangered species problem. If captive breeding for reintroduction is required, it is only because we have already reached a crisis phase and the more preferred avenues of species and habitat protection have proven to be insufficient. Captive breeding is very expensive in terms of both time and money, so it is not feasible to initiate programs for more than a few hundred of the thousands to millions of threatened and endangered species worldwide. Ideally, ecological problems should be addressed early on so that captive breeding for reintroduction purposes is not necessary. The bald eagle and the trumpeter swan are both good examples of species for which problems were solved and habitat protected before captive breeding for reintroduction became necessary.

Captive breeding programs should only be implemented as part of a more holistic, integrated effort to preserve species in their natural habitats. Thus, in addition to curbing the erosion of genetic variation and demographic stocasticity arising from small population size, the SSP seeks to assist worldwide efforts in wildlife and ecosystem conservation. Areas of focus in SSP planning include support for habitat preservation, public education, training of foreign zoo and field personnel, scientific research in support of captive breeding and field conservation efforts, and fund-raising to support field conservation efforts. SSP's are striving to seek a balance between conservation in the field and conservation offsite.

SSP species are chosen based on an evaluation of criteria:

- Does the species have sufficient public appeal to contribute to broader conservation goals by becoming a flagship species?
- What is the species' educational value? Can it be used to illustrate some important biological or ecological concept or a particular conservation issue?
- Does the species have the potential to contribute to conservation through scientific research or the development of relevant technologies?
- Is the species' population self-sustaining in the wild? What is the potential for successful reintroduction? Is there sufficient habitat left to contemplate a reintroduction program should the original reasons for the species' decline be reversed?
- What is the potential length of the commitment necessary to reach the species' minimum conservation goals? What is it likely to cost?

Our efforts are not limited to SSP species found in North America. Many of the 122 SSP species are foreign species. Some examples of foreign SSP species include Arabian oryx, black rhinoceros, cheetah, chimpanzee, elephant and tiger, to name just a few. However, there are a number of North American species for which AZA has established SSPs and works closely with the FWS and other Federal and State agencies: black-footed ferret, Mexican gray wolf, red wolf, California condor, thick-billed parrot, Puerto Rican crested toad, Guam rail, Guam kingfisher and the Virgin Island Boa. The U.S. has established recovery plans under the ESA for the black-footed ferret, the red wolf, and the California condor. I will discuss later how the programs of the AZA work in concert with the recovery plans.

The SSP coordinator's primary responsibility is to define and meet the goals of the North American regional population. The first step is for the holders of the animals to develop a Master Plan—a regional breeding strategy to meet the genetic and demographic goals outlined for the population. Master Plans are dynamic—they change regularly depending upon the programs' most recent breeding recommendations and degree of success. Master Plans recommend animal transfers, pairings for breeding, and the use of separation or contraception to prevent reproduction when appropriate. All institutions that participate in the SSP must make every effort to abide by the recommendations of the Master Plan.

The species coordinator relies heavily on studbook data. A studbook is a record of the history of captive populations, including genealogies of individuals and a list of various locations at which individual animals have been held. Studbooks are used primarily for monitoring and managing captive populations. The data contained in a studbook can be used to assess whether a population is stable, increasing or decreasing in numbers. The data are used to assist in breeding recommendations so that genetic variation can be retained and close inbreeding can be avoided to ensure the short and long-term health of the population. Without an accurate and up-to-date studbook, population analyses cannot be accomplished and timely breeding recommendations cannot be made. Studbooks may be either international or regional in scope depending on the number of specimens in captivity and the global distribution of the captive population.

There are also efforts to coordinate international cooperation and communication among the global zoo and aquarium community. AZA has been successful in initiating inter-regional cooperation for a number of species. With this worldwide cooperation, there is often a need to move animals between various regions for the purposes of genetic and demographic management or reintroduction. This means that the permitting system under the ESA and CITES and their effectiveness has a great impact on the success of these international programs. The permitting issue also effects domestic programs; in particular, those with international partners such as the black-footed ferret recovery plan which has institutions from both the U.S. and Canada assisting in the captive-breeding aspects.

How do the SSPs fit into international breeding programs? Several other geographic regions have initiated cooperative breeding and management programs similar to the SSP. The following regional programs exist: the Australasian Species Management Programme, the European Endangered Species Programme, the British Joint Management of Species Committee and the Japanese Species Survival Committee.

In addition to AZAs inter-regional efforts, there is a Conservation Breeding Specialist Group (CBSG) of IUCN—the World Conservation Union. IUCN is the world's largest and only conservation union. It links together over 120 government agencies and over 400 non-government agencies. The CBSG is one of a number of Specialist Groups within IUCN's Species Survival Commission or SSC. The role of the SSC is to facilitate worldwide efforts to preserve biological diversity. IUCN recognizes the AZA as the coordinating body for captive breeding efforts in North America.

CBSG has organized a number of Captive Action Plan Working Groups to increase communication and thus to provide an integrated approach to conservation. CBSG

also performs Population and Habitat viability Analyses (PHVA) for particular species. These analyses seek to estimate the probability that small populations of endangered animals may go extinct within certain specified time periods. Once such an analysis is completed the managers of these species can determine the distribution and size of populations needed for long-term viability. One of the most important aspects of the PHVA is its ability to bring the worldwide experts on a species together to interact. PHVAs have been conducted on a number of U.S. species including plants, vertebrates and invertebrates. The PHVA can then serve as one of the underpinnings of the recovery plan under the ESA.

Finally, there is a World Zoo Conservation Strategy which is an initiative of the International Union of Directors of Zoological Gardens and the Conservation Breeding Specialist Group of the Species Survival Commission of the IUCN. This strategy demonstrates that the zoo and aquarium community is able and prepared to dedicate its great potential to conservation and that the primary aim is to support the conservation of species' natural habitats and ecosystems. The strategies developed are intended to complement other conservation activities.

RECOVERY PLANS

The ESA gives priority to the development of recovery plans for species that are most likely to benefit from the plans, particularly those species that are, or may be, in conflict with construction, other development projects or other forms of economic activity. Further, the ESA states that the Secretary of the Interior, in developing and implementing recovery plans, may procure the services of appropriate public and private agencies and institutions, and other qualified persons.

So what is the relationship between captive breeding programs and recovery plans? In many recovery plans under the ESA, captive breeding can play an integral role. The AZA and its members presently work with the FWS on a number of recovery plans involving captive breeding—for example the red wolf, the blackfooted ferret and the California condor. AZA and its members were sought as the experts on captive breeding programs for these species. Unfortunately, in all three cases, FWS waited until it was almost too late to begin captive breeding programs. The ideal situation would have been to protect the species and its habitat early on when hundreds or thousands of the individuals remained as opposed to the 30 or less which remained in the cases of the red wolf, black-footed ferret and the California condor.

Black-footed ferrets, red wolves, and California condors from captive populations have been released into and survive in their respective native habitats. In addition to the great efforts taken to limit the amount of interaction these animals have with humans prior to release, specific programs must be designed to ready these specimens for living in the wild. To varying degrees, these animals must be taught to search for food, defend themselves, fear certain animals, etc. Different species require different release techniques. A species-by-species approach is necessary for releases.

I would like to discuss these three endangered species, their recovery plans and the role of the SSPs.

Black-footed Ferret. This recovery plan highlights the interrelationship that can occur between the SSP and the recovery plan under the ESA. A recovery plan for the black-footed ferret was approved in 1978, when no black-footed ferrets were known to exist. In 1981 an isolated population near Meeteetse, Wyoming provided renewed interest and an opportunity for recovery. In 1987, after the canine distemper-induced population crash, the Wyoming Game and Fish Department (WGFD) adopted a Strategic Plan for the Management of Black-footed Ferrets in Wyoming. The FWS approved a revised Black-footed Ferret Recovery Plan in 1988. Both the Wyoming and Federal Recovery Plans reflected the role of captive propagation. Technical advice to the captive breeding effort was initially provided by the Conservation Breeding Specialist Group but the relationship with CBSG was terminated in 1988 in anticipation of the development of a Species Survival Plan under AZA. Since 1989, the AZA has been very active in blackfooted ferret recovery efforts and the captive breeding effort has been managed according to the SSP.

The early objectives of the Recovery Plan were attained on schedule—to increase the captive population of black-footed ferrets to 200 breeding adults by 1991 and to reintroduce captive born black-footed ferrets to the wild.

Captive raised black-footed ferrets were dispersed from Wyoming's Sybille facility to Omaha's Henry Doorly Zoo and the National Zoological Park's Conservation and Research Center in 1988. Four additional AZA accredited zoos (Louisville Zoological Garden, Cheyenne Mountain Zoo, the Phoenix Zoo and the Toronto Metropolitan Zoo) are now participating in the Black-footed Ferret SSP.

The reintroduction programs have been expanded from the initial releases in Wyoming's Shirley Basin and captive-raised blackfooted ferrets were released at Badlands National Park, South Dakota and Charles M. Russell National Wildlife Refuge, Montana in 1994.

The black-footed ferret recovery efforts provide numerous examples of cooperative efforts and partnerships under the ESA:

- Wyoming Game and Fish Department agreed to be designated as the leading agency for the recovery efforts in Wyoming in 1982.
- From 1981 to 1986, private land owners, most notably Mr. Jack Turnell of Meeteetse, WY, provided protection for ferrets on their land and allowed private and agency biologists access to their land.
- In 1989, the partnership between AZA, FWS, and Wyoming Game and Fish Department was formalized. Under this agreement, AZA and SSP participant zoos and WGFD provide facilities for captive breeding, expertise, and most funding for the blackfooted ferret captive breeding program; the FWS provides technical and legal oversight, permits, national and international coordination and a limited amount of funding. The SSP coordinator is an official from the Wyoming Game and Fish Department.

The primary problem facing black-footed ferret recovery is national commitment and funding to save the species. The fundamental biological problems of captive breeding have been solved and will continue to be refined, along with methods for reintroduction. The captive breeding program has reached its maximum size without additional facilities, and it cannot produce sufficient animals for release to reach recovery goals without additional funding and new facilities. Funding for current captive breeding and reintroduction efforts is uncertain.

Red Wolf. The AZA and the FWS cooperatively developed the recovery plan for red wolves. The SSP is charged with the captive breeding program; specifically with managing the genetic and demographic diversity of the population. In 1990, when the recovery plan was published, the SSP was to provide FWS with the genetic aspects of the free-ranging population. The Red Wolf SSP coordinator serves in an advisory capacity to the Recovery Team. There are 29 cooperating institutions (of which 22 are AZA institutions) and holding facilities at the mainland reintroduction sites presently involved with the red wolf program.

The recovery program began with a population of 14 animals in captivity. The recovery goal is 550 animals, with 330 in captivity in at least 30 facilities and 220 in the wild in at least three locations. As of 30 April 1995, the total red wolf population numbered 292, with 50 to 71 animals located at two wild reintroduction sites, 13 animals at three island propagation sites, and 208 animals in captivity at 33 facilities in 30 institutions located in 18 States and the District of Columbia. A11 reintroduction's are, and will be defined as experimental, which is also the case with the reintroductions of the blackfooted ferret and the California condor.

The reintroduction project started in 1987 with releases into the Alligator River National Wildlife Refuge in North Carolina. In 1993, releases of red wolves began on the Pocosin Lakes National Wildlife Refuge, a new refuge that was also within the experimental population boundary. In 1991, a release of four wolves began into the Great Smoky Mountains National Park for a one year study of interactions of red wolves with coyotes, livestock and humans. Full-scale reintroduction in the Smokies began in 1992 and the current population there consists of nine 11 animals.

The Red Wolf SSP is at a phase where it now requires management of the population as one that has stabilized. Regulating the captive population within the constraints of available captive space, while selectively breeding individuals to equalize founder contribution and increase gene diversity, are issues facing the Red Wolf SSP.

California Condor. In 1987, all surviving California condors in the wild were captured forming a flock of 27 birds evenly distributed between the Los Angeles Zoo and the San Diego Wild Animal Park. The–SSP coordinator serves on the USFWS Recovery Team and is one of the leaders on aspects of release.

From 1988 when the first breeding occurred to the present, 85 young have been produced. Only eight mortalities have occurred to date. The total population is 104.

Based on the results of prior experience with captive breeding and reintroduction of the South American Andean condor in Peru, test releases were conducted with Andean condors in California in 1988 and 1991. In 1992, there were a total of eight California condors released—two during the first release and six during the second release. Of the first 13 birds released (1992–1994), five died and eight were returned to captivity because of maladaptive behavior that would have adversely affected any future releases. Release techniques have been modified and are showing promising

results. Twenty birds are expected to be released in the next year, hopefully to areas such as the Grand Canyon, Northern California, Baja California and New Mexico.

Recently, a third facility was added to aid in captive breeding—the Peregrine Fund's World Center for Birds of Prey in Boise, Idaho. Other cooperators include the FWS and the California Fish and Game Department.

The SSP for the California Condor and the Andean Condor is comprised of the same groups. The Andean Condor SSP actually bred birds for release as a test for the release of California condors. This release was based on experience developed from an earlier cooperative project between FWS, the New York Zoological Society and the University of Wisconsin, which involved releasing birds bred in the U.S. into habitat in Peru.

How could recovery plans be improved? In 1994, a group of scientists wrote a paper entitled "A Model for Improving Endangered Species Recovery Programs". This paper looks at the common organizational problems that cause inadequate planning and implementation problems in endangered species recovery. Among the things the group looked at was the composition of recovery plan advisory committees. They examined 32 recovery plans in which they found that 77 percent of the formal representation on the recovery plan advisory committees was from Federal or State agencies. Nongovernmental conservation group representation was only 118 and university representation was only 8 percent. Their concern was that the advisory groups were stacked with government personnel and there is too much influence from top-level agency personnel distant from the species whose decisions may reflect agency and political concerns rather than task-oriented recovery goals.

The solution proposed is that a task-oriented recovery team be set up that integrates the best expertise in the recovery planning process. The team should be composed of people whose skills address issues critical for recovery. Further, they suggest that once goals and procedures are established, the responsible Federal agency could divest some or all of its obligations for implementing the plan, yet still maintain oversight by holding implementing entities contractually accountable. Regular, periodic outside review and public documentation of the recovery team, lead agency, and the accomplishments of the implementing bodies would permit the evaluation necessary to improve performance. Increased cooperation among agency and nongovernmental organizations provided by this model would result in a more efficient use of limited resources toward the conservation of biodiversity. AZA recommends that the Committee consider the views of this study.

Is there a relationship between recovery plans and international efforts? Yes. Although the FWS does not develop recovery plans for foreign species, there is a relationship between recovery plans and international conservation efforts. For example, in the case of the California condor, we knew about its biology and husbandry needs because of our experiences with Andean condors. Had it not been for this knowledge base, we would have been under greater pressure to learn about California condor biology while at the same time trying to breed them. This would have placed us in an impossible situation because there were only 27 birds left in the wild with which to try to establish a captive breeding program. In short, the zoo and aquarium community had no time to learn about this species.

Timing is everything when it comes to recovery of endangered species. The world was lucky when it came to California condors. We learned from raptor breeders but it would have been much easier to start early protecting the species in the wild and its habitat. Black-footed ferrets benefited from what breeders knew about domestic ferrets. In the case of the Guam kingfisher, however, we are not as lucky. We did not have experience with this species or a similar species, and were asked to begin a captive breeding program before the species became extinct. There were only 29 Guam kingfishers remaining in the wild when action was taken. We don't know how to breed this species well and time is running out. Captive breeding for reintroduction should be the last resort. Therefore, protection of the species in the wild and its habitat early on should remain the highest priority.

WHAT ROLE DO PERMITS PLAY IN THE MOVEMENT OF ENDANGERED SPECIES?

Under Section 10 of the Endangered Species Act, permits may be issued for scientific purposes or to enhance the propagation or survival of the affected species. The Office of Management Authority (OMA) and the Office of Scientific Authority (OSA) within the Fish and Wildlife Service are the issuing authorities for most endangered species. (The National Marine Fisheries Service is the issuing authority for endangered marine species.) Both the Offices of Management Authority and Scientific Authority are overburdened, underfunded and understaffed. AZA supports increased funding for these offices and has submitted comments to the Appropriations Committees to that effect.

AZA members experience delays and frustration from time to time in obtaining import and export permits under both the ESA and CITES. However, at this time, we do not believe there is any need for changes in the law to address our concerns. We believe that these are issues that can be solved administratively. We support the efforts of the OMA and the OSA to determine means to streamline the permitting processes.

Movement within the U.S. of non-native, captive-bred wildlife is handled in a different manner. Persons who wish to conduct otherwise prohibited activities with such wildlife are required to register with the FWS to obtain a captive-bred wildlife (CBW) registration. FWS registers persons who meet certain established requirements and specifies the extent of the activities that those persons are authorized to conduct. Holders of CBWs can then transfer animals in interstate commerce without obtaining a permit: both the sender and the recipient of such wildlife must be holders of a CBW for that particular species. This process eliminates the need for a permit to transfer non-native, captive bred species between zoos and aquariums and private citizens. The rationale behind this is that the "Service considers that the purpose of the ESA is best served by conserving species in the wild along with their ecosystems. Populations of species in captivity are, in large degree, removed from their natural ecosystems and have a role in survival of the species only to the extent that they maintain genetic integrity and offer the potential of restocking natural ecosystems where the species has become depleted or no longer occurs." (*Federal Register* 11 June 1993 p. 32633) AZA agrees with that philosophy and with the intent to make legitimate breeding programs less burdensome. AZA also believes that captive breeding has a role to play in education, research and fund raising to support conservation efforts.

It is our understanding that CBW registration certificates comprise a significant amount of the paperwork processed by permit biologists with the Office of Management Authority. Because of the substantial paperwork burden on the public and the FWS and the lack of appreciable contribution to the conservation of many of the affected species, FWS proposed a rule to streamline the CBW process. This proposal was made in 1993. AZA believes that this proposal made a number of suggestions that would streamline the CBW system and yet maintain its integrity. FWS proposed to eliminate CBW registration for a number of species that are represented by large numbers of captive-bred specimens in the United States. For species not in the exempt categories, persons or institutions wishing to qualify for a CBW registration must participate in an approved, responsible cooperative breeding program for the taxon concerned. Holders not included either in the exempted category or not qualifying for a breeding program would be required to obtain a permit for import, export or interstate commerce. Although AZA had some technical questions on the implementation of the cooperative breeding programs and didn't agree with all the species listed on the exempt list, AZA supported the concept of the proposal. We urge FWS to finalize this proposed rule.

FOREIGN SPECIES

AZA believes that there is value in the listing of non-native endangered species on the U.S. List of Endangered and Threatened Species. The majority of our SSP programs are with non-native endangered species. Listing these species helps increase public awareness in the United States of the plight of these species and the general need for conservation here at home. Zoos and aquariums have well-established educational programs for nonnative endangered species. In addition, these institutions as well as other non governmental organizations conduct fund-raisers to assist with field projects and conservation efforts for nonnative endangered species. In a number of cases, the money raised in the U.S. serves as a catalyst or challenge for money to be raised in the species' country of origin. AZA believes that if the U.S. did not recognize non-native endangered species that these fund raising efforts would not be as successful and conservation efforts would suffer.

Foreign species and our conservation efforts with them can serve as a model for working with native endangered species. The Andean condor, and specifically, our experience in working with that foreign species, helped to save the native California condor from extinction.

Because of the Endangered Species Act and its protection mechanisms for both U.S. and foreign species, the U.S. has been recognized as a world leader in endangered species conservation. This would not be the case if our ESA were limited to only native species.

EDUCATIONAL VALUE OF ENDANGERED SPECIES

FWS has proposed to delete education as an activity that enhances the propagation or survival of the species on the basis that there is not a direct cause and effect relationship between education through exhibition of living wildlife and enhancement of survival in the wild of the species exhibited. The Act states that endangered species of fish, wildlife, and plants are of aesthetic, ecological, educational, historical, recreational, and scientific value to the Nation and its people." The term enhancement is defined as to make greater—as in cost, value attractiveness, etc.; heighten or augment. AZA strongly believes that education through exhibition of living wildlife augments the survival of the species in the wild by increasing conservation awareness—the need to establish a new balance between human development and the earth's biological system. To "save" an endangered species requires a number of components including conservation of the endangered species in the wild and preservation of its habitat, in some cases captive propagation and reintroduction, and education. Education contributes to the survival of the species in the wild. In the zoo and aquarium setting, it is the living animals that attract visitors and form the basis for education. The attractiveness of these living animals serves as a starting point to stimulate the visitors' interest in the subtle relationships and balances of the living world.

Thank you for the opportunity to submit this testimony for the record.

REFERENCE

Miller, B.; Reading R.; Conway, Courtney; J. Jackson, J.; Hutchins, M.; Snyder, N.; Forrest, S.; Frazier, J.; Derrickson, S. 1994. A Model for Improving Endangered Species Recovery Programs. Environmental Management. Pp. 637–645.

Species Survival Plan®

FACT SHEET

Species Survival Plan (SSP) Mission Statement

The mission of the American Zoo and Aquarium Association's (AZA's) Species Survival Plan (SSP) Program is to help ensure the survival of selected wildlife species.

The mission will be implemented using a combination of the following strategies:

- **Organize scientifically-managed captive breeding programs for selected wildlife as a hedge against extinction.**
- **Cooperate with other institutions and agencies to ensure integrated conservation strategies.**
- **Develop and implement strategies to increase public awareness of wildlife conservation issues, including development and implementation of education strategies at our member institutions and in the field, as appropriate.**
- **Conduct basic and applied research to contribute to our knowledge of various species.**
- **Train wildlife and zoo professionals.**
- **Develop and test various technologies relevant to field conservation.**
- **Reintroduce captive-bred wildlife into restored or secure habitat as appropriate and necessary.**

What it is

The Species Survival Plan, or SSP, began in 1981 as a cooperative population management and conservation program for selected species in zoos and aquariums in North America. Each SSP manages the breeding of a species in order to maintain a healthy and self-sustaining captive population that is both genetically diverse and demographically stable. Beyond this, SSPs participate in a variety of other cooperative conservation activities, such as research, public education, reintroduction and field projects. Currently, 75 SSPs covering 122 individual species are administered by the American Zoo and Aquarium Association, whose membership includes 167 accredited zoos and aquariums throughout North America.

How Species are Selected

A species must satisfy a number of criteria to be selected for an SSP. Most SSP species are endangered or threatened in the wild and have the interest of qualified professionals with time to dedicate toward their conservation. Also, SSP species are often "flagship species," well-known animals which arouse strong feelings in the public for their preservation and the protection of their habitat. Examples include the giant panda, Sumatran tiger and lowland gorilla. New SSPs are approved by the AZA Wildlife Conservation and Management Committee, with input from the appropriate Taxon Advisory Group (TAG), which manages conservation programs for related groups of species (great apes, bears, freshwater fish, etc.).

How it Works

Each SSP has a qualified species coordinator who is responsible for managing its day-to-day activities. Management committees composed of various experts assist the coordinator with the conservation efforts for the particular species, including aspects of population management, research, education and reintroduction when feasible. In addition, each institution holding an SSP animal has a representative who may attend SSP meetings and coordinates relevant SSP activities at their institution. The overall program is administered by AZA's Conservation and Science Office in Bethesda, MD in consultation with the AZA Wildlife Conservation and Management Committee (WCMC). Non-member institutions may participate in SSPs, but must adhere to AZA's Code of Professional Ethics and have appropriate facilities and expertise to care for the animals.

The SSP Master Plan

An SSP Master Plan outlines the goals for the population. It designs the "family tree" of a particular captive population in order to achieve maximum genetic diversity and demographic stability. Breeding and other management recommendations are made for each animal with consideration given to the logistics and feasibility of transfers between institutions, as well as maintenance of natural social groupings. Often, Master Plans include recommendations not to breed animals, so as to avoid having the population outgrow the available holding space.

The Studbook

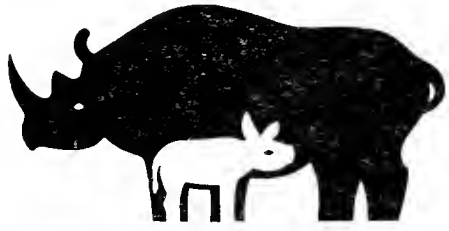
Studbooks are fundamental to the successful operation of SSPs, as each contains the vital records of an entire captive population of a species, including births, deaths, transfers and family lineage. With appropriate computer analysis, a studbook enables the species coordinator and management group to develop a Master Plan that contains sound breeding recommendations based on genetics, demographics and the species' biology. Data for each studbook is compiled and constantly updated by a "Studbook Keeper" who has knowledge of the species and time to assist in its conservation.

The Husbandry Manual

Many SSPs have developed husbandry manuals, which set guidelines based on the best current scientific knowledge for the diet and care of the species in captivity. With standardized practices, it is easier to detect potential health and husbandry problems. In addition, because the guidelines provide consistency among participating institutions, it is also easier to transfer animals between institutions when necessary.

Conservation Action

Several SSPs include reintroduction projects, though reintroduction of animals to the wild is not the goal of every SSP. For native species, SSPs are often linked to U.S. Fish and Wildlife Service Endangered Species Recovery Plans. While captive breeding and reintroduction are not panaceas for the endangered species problem, reintroduction projects have been successful in returning certain species to their natural places in the ecosystem. SSPs for which reintroduction is not appropriate have a positive impact on assisting the wild population through fund-raising to support field projects and habitat protection, development of new technologies, public and professional education programs, and basic and applied research.



Species Survival Plan

(AZA Conservation and Science Office, April 1995)

AZA SPECIES SURVIVAL PLANS©

June 14, 1995

MAMMALS (52 Programs/59 Species)

ADDAX

AFRICAN WILD DOG

ARABIAN ORYX

ASIAN SMALL-CLAWED OTTER

ASIAN WILD HORSE

BABIRUSA

BARASINGHA

BLACK LEMUR

BLACK RHINOCEROS

BLACK AND WHITE COLOBUS

BLACK-FOOTED FERRET

BONOBO (PYGMY CHIMPANZEE)

CHACOAN PECCARY

CHEETAH

CHIMPANZEE

CLOUDED LEOPARD

COTTON-TOP TAMARIN

DRILL

ELEPHANT
(African, Asian)

GAUR

GOELDI'S MONKEY (CALLIMICO)

GIBBON
(Siamang, White-cheeked, White-handed)

GIANT PANDA

GOLDEN LION TAMARIN

GREATER ONE-HORNED ASIAN RHINOCEROS

GREVY'S ZEBRA

HARTMANN'S MOUNTAIN ZEBRA

JAGUAR

LIONS

LION-TAILED MACAQUE

LOWLAND GORILLA

MANED WOLF

MANGABEY

MEXICAN GRAY WOLF

MONGOOSE LEMUR

OKAPI

ORANGUTAN

PYGMY HIPPOPOTAMUS

PYGMY LORIS

RED PANDA

RED WOLF

RING-TAILED LEMUR

RODRIGUES' FRUIT BAT

RUFFED LEMUR

SCIMITAR-HORNED ORYX

SNOW LEOPARD

SLOTH AND SUN BEARS

SPECTACLED BEAR

SUMATRAN RHINOCEROS

TIGER
(Siberian, Sumatran)

TREE KANGAROO
(Doria's, Goodfellow's, Grizzled, Matschie's)

WHITE RHINOCEROS

BIRDS (14 Programs/18 Species)

AFRICAN PENGUIN

BALI MYNAH

CINEREOUS VULTURE

CONDOR
(Andean, California)

CONGO PEAFOWL

CRANE
(Hooded, Red-crowned, Wattled, White-naped)

GREATER HORNBILL

GUAM RAIL

HUMBOLDT PENGUIN

MICRONESIAN KINGFISHER

PALM COCKATOO

PINK PIGEON

ST. VINCENT PARROT

THICK-BILLED PARROT

REPTILES AND AMPHIBIANS (7 Programs/7 Species)

ARUBA ISLAND RATTLESNAKE

CHINESE ALLIGATOR

CUBAN CROCODILE

DUMERIL'S GROUND BOA

PUERTO RICAN CRESTED TOAD

RADIATED TORTOISE

MONA/VIRGIN ISLANDS BOA

FISHES (1 Program/34 Species)

HAPLOCHROMINE CICHLIDS
(34 Species)

INVERTEBRATES (1 Program/4 Species)

PARTULA SNAIL
(4 Species)

TOTAL:

75 Species Survival Plans (SSPs)

122 species covered

Taxon Advisory Groups

FACT SHEET

What is a Taxon Advisory Group (TAG)?

Established by AZA in 1990, TAGs examine the conservation needs of entire taxa, or groups of related species. Examples of some basic taxonomic groupings for which AZA TAGs exist are: amphibians, felids (cats), hornbills, and great apes. Each TAG consists of AZA Species Survival Plan® (SSP®) coordinators, studbook keepers and other individuals with special expertise on one or more of the species covered by the TAG. Currently, AZA administers over 40 TAGs covering groups of invertebrates, fish, birds, mammals, reptiles and amphibians.

What do TAGs do?

Serving as committees of expert advisors, Taxon Advisory Groups assist in the selection of appropriate species for AZA conservation programs and provide a forum for discussing husbandry, veterinary, ethical and other issues that apply to entire taxa. Through a process called "regional collection planning," they recommend species for new AZA studbooks, SSPs and other zoo- and aquarium-based programs; establish priorities for management, research and conservation; and recruit qualified individuals to carry out these activities.

In addition, TAGs examine animal management techniques based on scientific studies and assist SSP coordinators in developing animal care and husbandry guidelines. Purposely organized along the same lines as the specialist groups of the IUCN-The World Conservation Union's Species Survival Commission (SSC) and Bird Life International's Taxonomic Specialist Groups, AZA TAGs also promote cooperation and sharing of information between AZA and other regional and international conservation programs.

AZA Taxon Advisory Groups

Antelopes
Bats
Bears
Buffalo, Bison, Cattle
Canids, Hyenids, Aardwolves
Deer
Equids
Felids
Gibbons
Great Apes
Marine Mammals
Marsupials, Monotremes
New World Monkeys
Old World Monkeys
Pigs, Peccaries
Prosimians
Rhinoceros
Rodents, Lagomorphs, Insectivores
Sheep, Goats
Small Carnivores
Tapirs
Cracids
Cranes
Ducks, Geese
Herons, Ibises, Hammerkops
Hornbills
Parrots
Passerines
Penguins
Pigeons, Doves
Raptors
Shore birds
Storks
Turacos, Cuckoos
Amphibians
Chelonians
Crocodilians
Lizards
Snakes
Freshwater Fish
Marine Fish
Terrestrial Invertebrates
Aquatic Invertebrates

(AZA Conservation and Science Office, June 1995)

The Regional Collection Plan

One of the most serious challenges facing zoological professionals today is how to determine which species are most in need of zoo- or aquarium-based conservation programs and how to use the limited exhibition and holding space most efficiently. In the past, personal preferences, the spirit of competition among zoos, and availability often determined which species were acquired and became the focus of scientifically managed captive breeding programs. Today, however, there is a growing appreciation of the need for an organized, broad-based collection planning process that better serves the conservation mission of the North American zoo and aquarium community.

One of the TAGs' primary responsibilities is to evaluate the present North American captive carrying capacity for a given taxonomic group and recommend how this space should be allocated. This strategic planning process results in the development of Regional Collection Plans (RCPs). In developing these plans, TAGs take into account both the limited amount of enclosure space available and the need to maintain animals in populations large enough to ensure their long-term genetic viability and demographic stability. They consider the potential of selected species to contribute to conservation action through education, scientific research, fund raising to support field conservation and captive breeding for reintroduction. The goal of this careful planning process is that each species and individual animal held at AZA zoos and aquariums will eventually be part of a cooperative population management program and have a defined conservation purpose.

Planning Criteria

A number of criteria are involved in the regional collection planning process, and, depending on the particular taxon in question, various factors will carry different weights. For example, in the case of amphibians and invertebrates, groups which encompass thousands of species, collection planning often takes a short-term, project-oriented approach. In such cases, research potential may carry a greater weight in the selection of species than factors such as public appeal and ability to assist in long-term fund raising. The selection criteria, therefore, are flexible to allow each TAG to work most efficiently. The following criteria are often used as a starting point:

- current and anticipated captive space available;
- current captive population size and composition;
- ability to maintain and successfully breed in captivity;
- status in the wild:
- sufficient number of founders (individual wild blood lines) available;
- usefulness of the taxon to save habitat and other taxa (i.e.., is the taxon a so-called "flagship", "keystone" or "umbrella" species?);
- research potential;
- educational potential;
- public appeal and ability to assist in fund raising to support field conservation
- uniqueness of the taxa in terms of phylogeny, adaptive strategy, interactions and coevolution with other taxa, ecological approach to survival, cultural appeal or scientific significance;
- ability to survive in human altered ecosystems that are now ubiquitous;
- probability of successful reintroduction to the wild, if appropriate and necessary.

(AZA Conservation and Science Office, June 1995)

FORUM

A Model for Improving Endangered Species Recovery Programs

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ABSTRACT / This paper discusses common organizational problems that cause inadequate planning and implementation processes of endangered species recovery across biologically dissimilar species. If these problems occur, even proven biological conservation techniques are jeopardized. We propose a solution that requires accountability in all phases of the restoration process and is based on cooperative input among government agencies, nongovernmental conservation organizations, and the academic community. The first step is formation of a task-oriented recovery team that integrates the best expertise into the planning process. This interdisciplinary team should be composed of people whose skills directly address issues critical for recovery. Once goals and procedures are established, the responsible agency (for example, in the United States, the US Fish and Wildlife Service) could divest some or all of its obligation for implementing the plan, yet still maintain oversight by holding implementing entities contractually accountable. Regular, periodic outside review and public documentation of the recovery team, lead agency, and the accomplishments of implementing bodies would permit evaluation necessary to improve performance. Increased cooperation among agency and nongovernmental organizations provided by this model promises a more efficient use of limited resources toward the conservation of biodiversity.

Governments around the world are presently acting to conserve the planet's declining biodiversity. One example is the US Endangered Species Act (ESA). It is a strong document (Rohlf 1991, Bean 1992), yet analyses suggest that it could be improved (Yaffee 1982, US General Accounting Office 1988, Kohm 1991). The problem is not so much with the act itself, but with its implementation (Duda 1991, Gibbons 1992, O'Connell 1992). Endangered species res-

KEY WORDS: Endangered species; Management; Policy; Recovery plan; Recover team; Organizational structure.

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toration often occurs in a sociopolitical environment of uncertainty, complexity, and public scrutiny, and such an atmosphere can produce a multitude of administrative challenges (Lindblom 1980, Yaffee 1982, Clark and Harvey 1988, Clark and others 1989).

Programmatic difficulties are experienced by many organizations, and, in endangered species management, they seem to cut across species and geographical lines. Common recurring obstacles include: slow decision making, decisions made without the benefit of expertise outside the dominant organization, decisions based on politics and favoritism at the expense of scientific knowledge, rewarding organizational loyalty while penalizing creativity and initiative, faulty information flow through inadequate communication channels or conscious communication blockage, failure to develop plans with concise objectives that can be used to clearly evaluate progress toward a goal, deviating from a plan during implementation, and impeding effective action with an overly rigid or conservative organizational hierarchy (Allison 1971, Phenicie and Lyons 1973, Yaffee 1982, Rolhf 1991). These pitfalls, to the degree that they exist in any endangered species program, must be overcome.

This paper discusses obstacles to implementation of endangered species programs and suggests how they might be avoided. In doing so, we present what we see as a "model." Because there are sociopolitical similarities that span biologically dissimilar circumstances, our model could be adapted to a wide variety of situations. On a broader scale than individual endangered species, the model presented here can also be applied to ecosystem, park, and public land management.

A Problem Definition

In this section, we first describe why it is important to understand organizational issues that affect the use of biological knowledge. Indeed, by failing to recognize these issues, an individual can unwittingly become part of the obstacle to effective recovery. Second, we discuss organizational and cultural structures that cause and perpetuate poor performance. Third and fourth, we examine ways that organizational obstacles hinder formulation and implementation of a sound plan. Fifth, we explain why it is important to improve efficiency and effectiveness of recovery programs.

Why We Need to Understand Organizational Issues

All organizations, including wildlife and land management agencies that shape and enact endangered species recovery programs, are afflicted by common problems. Often, wildlife biologists mistakenly believe that each recovery effort is unique, but in reality, the common thread of organizational structure may account for 50–75% of the way that individuals behave in any group (Galbraith 1977). Put simply, similar advantages or disadvantages will appear in programs with a similar design regardless of the endangered species. In this light, we can learn valuable lessons by examining both foreign and domestic endangered species programs, other programs with similar tasks and environments, and the structure of organizations in general (Loucks 1992).

Most people working directly with endangered species are highly trained in the biological sciences but may have little exposure to organizational and policy theory. They are, therefore, often unable to diagnose problems in organizational structure and behavior or to develop effective solutions to those problems (Clark and Kellert 1988, Kellert and Clark 1991, Clark and others 1992).

As a result, issues of organizational structure and behavior are usually avoided or misunderstood by biologists who prefer to plunge into the necessary physical work. Many people feel it is difficult to address organizational issues when so much needs to be accomplished in the field and laboratory (Phenicie and Lyons 1973). In such circumstances, problems are often conveniently blamed on "biopolitics" or "personalities" (Jackson 1986, Clark and Cragun 1991). However accurate these labels may seem, blaming organizational ineffectiveness on biopolitics and personalities does not provide a suitable problem definition to develop an effective solution (Schon 1983). No one denies the presence of political motivations in many individuals, but appropriate organizational structure can significantly decrease the adverse effects of egocentric behavior. Unless biologists recognize and address organizational issues, even obviously rational solutions to conservation problems may be avoided, altered, or misused (Phenicie and Lyons 1973, Yaffee 1982).

In other words, conservation biologists must develop the scientific capacity necessary to collect and evaluate technical information, but this must be combined with the skill to effectively inject that knowledge into the planning and implementation processes (Clark and others 1992). This may require extensive consultation with a social scientist, much the same as consulting a statistician about experimental design, but a better understanding of organizational processes will greatly enhance the efficiency and effectiveness of recovery by managing the mechanisms

rather than focusing only on individual personalities or technical issues.

Existing Organizational Cultures and Structures

The culture and structure of the responsible government agency or nongovernmental organization will greatly affect the outcome of any conservation program (Clark 1986, Reading and others 1991). All organizations have their own cultures or ways that their members view and respond to the world they face (Byars 1984). An organization's culture can determine how its members perceive goals or even what goals they seek for the organization and themselves (Warwick 1975, Byars 1984). The members of the organization consciously or unconsciously select people with similar perspectives (Janis 1972). A homogeneous work force makes internal functions efficient by reducing the potential for conflict, but it also reduces creativity by limiting decisions to familiar faces and procedures (Clark 1986). Organizational cultures can survive administrative changes by built-in strategies of hiring and promotion (the good-old-boy system).

In his study of organizational behavior, Harrison (1972) found three typical cultures: task-oriented cultures, which reward achievement of goals; power-oriented cultures, which strive to consolidate control of programs, power, and money; and, role-oriented cultures, which are concerned with legitimacy, hierarchy, and status. The latter two are rigid bureaucracies that place procedural correctness, rather than performance, as a primary goal (Clark and others 1989). Rigid bureaucracies also allow individual members to hide from accountability under the umbrella of the organization and its actions.

Many of the federal and state agencies charged with endangered species management have a hierarchical structure because they began as regulatory bodies. For example, state game and fish agencies originated to govern hunting and fishing, and although state nongame programs have been developing, the primary focus of these agencies is still the enforcement of game laws and establishment of harvest limits.

When routine and familiar tasks are the main function of an agency, rigid structures can be productive and efficient (Clark 1986, Perrow 1986), but endangered species programs are uncertain, complex, and strongly influenced by factors outside of the traditional organization's control—conditions that require rapid assimilation of new information and the implementation of creative, cost-effective solutions (Janis 1972). When such programs are managed with a rigid structure, an agency will usually experience limited efficiency and effectiveness toward endangered species recovery. If the dominant organization in a multiorganizational program is strongly oriented toward a power or role culture, the resulting plan is likely to have some objectives incongruent with recovery goals of the species.

Organizational Obstacles to Good Planning

The policy-setting process can be hindered by factors such as not using science effectively, avoiding problem recognition, and stacking advisory groups.

Not using science effectively. Early stages of endangered species recovery programs are often characterized by insufficient knowledge to develop a confident course of action. When biological data are scarce, unequal power, rigid organizational hierarchies, traditional philosophies, and dominant personalities can play significant roles in a program. Snyder and Snyder (1989) documented a number of instances where unsubstantiated ideas became established in planning as a result of these factors for the California condor (*Gymnogyps californicus*) recovery program. Other cases where available data were not used effectively in planning were discussed by Montgomery (1990), Hamilton (1992), and Marshall (1992). A critical, but constructive, outside review could prevent adoption of plans that misuse or ignore scientific data. An outside review could also assure that future data were collected scientifically.

Avoiding early problem recognition. Similarly, the development of a plan can be delayed because organizational representatives may be reluctant to admit that there are any problems beyond what they themselves can handle. Some agency representatives are concerned with public image, and they may be afraid that problem recognition will be construed as a sign of weakness and an invitation to public criticism; some even feel a proactive approach could invite criticism for doing something at a time when "nothing needed to be done." As a result of this attitude, action can be delayed until it is absolutely certain that there is an emergency. This approach must be changed. Crisis management is more expensive, has a lower probability of success, and deflects funds from proactive strategies that could prevent future catastrophes (Wemmer and Derrickson 1987).

"Stacked" recovery teams. "Stacked" (biased) advisory groups are sometimes established by representatives of a dominant, control-oriented organization to recommend politically self-interested actions, thus lending a veneer of credibility and legitimacy to the plan or program. These stacked groups can be composed

of members of the dominating agency or people who first and foremost desire cooperative relations with that agency (sometimes at any cost), instead of task-oriented specialists focused on finding solutions to the problems. Such groups often make decisions in areas where they have little expertise.

An examination of 32 recovery plans showed that 77% of the formal representation originated in federal or state agencies; nongovernmental conservation group representation was only 11%, and university representation was only 8%. Clark and Harvey (1988) discussed the early black-footed ferret (*Mustela nigripes*) recovery program structure that produced an advisory team almost exclusively composed of agency personnel with no ferret experience, and King and others (1977) and McFarlane (1992) discussed similar circumstances for the red-cockaded woodpecker (*Picoides borealis*) recovery team.

If decisions of stacked advisory groups are influenced by top-level agency personnel distant from the species, those decisions are more likely to reflect agency and political concerns rather than task-oriented recovery goals (Clark and Harvey 1988). Often political and recovery goals are similar, but if they happen to differ, agency goals may actually override recovery goals (e.g., Snyder and Snyder 1989). As a result, recovery programs can become powerful tools for legitimizing and enhancing organizational and individual power (Warwick 1975, Clark and Harvey 1988, Clark and Kellert 1988).

In situations where recovery requirements and agency philosophies conflict, the dominant agency may also redefine the problem in terms of its provincial goals or philosophies. The literature discusses how such behavior: (1) delayed the onset of captive breeding in the black-footed ferret recovery effort (May 1986, Weinberg 1986, Clark and Westrum 1987, Clark and Harvey 1988); (2) allowed clear-cutting instead of uneven-aged timber management in red-cockaded woodpecker foraging areas, a practice that fragments habitat surrounding traditional colony sites (Jackson 1986, 1987, McFarlane 1992); and (3) impeded important California condor research (Snyder 1986, Snyder and Snyder 1989).

Stacked advisory groups can also publish reports that are a selection of highlights from meetings instead of complete documents (Loucks 1992). These highlight reports can bias study results or meeting conclusions and further limit the ability of outside expertise to evaluate the program. They can also affect the public's perception of the program. In addition, a stacked advisory group can limit critical evaluation to fine-tuning the dominant organization's original plan. This may give the impression that there is a critical review, but without evaluating the soundness of the initial path of action.

In an extreme example of stacked teams, a group representing diverse organizations has been eliminated and replaced by one or two individuals contracted to formulate plans. In 1982 the red-cockaded woodpecker recovery team was disbanded and an employee of the US Forest Service, an agency then being investigated under a jeopardy opinion for their management of the species, was contracted to revise the recovery plan. A multidisciplinary committee of specialists, appointed by the American Ornithologists' Union, was critical of the recovery plan and the mechanism by which it was developed (Ligon and others 1986).

Either stacking or eliminating recovery teams allows one group to limit the role of others and consolidate its power (Clark and Harvey 1988). Reducing the influence of scientists outside the dominating agency assures control of information and management of legitimacy (Clark and Westrum 1987). Indeed, the representatives of the dominating organization may be threatened by people with alternative ideas and evict them from the recovery program. When self-legitimization is a goal, there are rarely constructive methods of resolving conflicting opinions, and expulsion can be accomplished by erecting a complicated set of bureaucratic hurdles (including denying research permits). One of the most famous examples is the Craighead's grizzly bear (*Ursus arctos*) research in Yellowstone National Park. In that case, valuable long-term studies by independent researchers were terminated and agency personnel replaced the independent scientists (Hornocker 1982).

Organization Obstacles to Good Implementation

Even an excellent plan must be implemented well. Implementation can change established plans significantly, thus giving implementing organizations and personnel a great deal of power (Lindblom 1980, Yaffee 1982, Clark and others 1991, Clark 1992). It is, therefore, important that plans be defined as clearly as possible and that there be a critical review of performance all along the implementation process. Organizational representatives that implement plans can reduce the efficiency of an established plan by deliberate delay tactics, by yielding to parochial political pressures, and by preventing a critical review of their actions.

Deliberate delay. If representatives of the implementing agency do not agree with the established strategy, execution can be delayed by failing to allocate sufficient funding (or allocating funding in an

ineffective manner); by suddenly producing last-minute obstacles, which could have been easily resolved with an earlier analysis (often called sand-bag management); by intentionally not collecting necessary data despite earlier agreements to do so; and by other means.

Yielding to local political pressures. Implementation can be affected by local political and economic pressures that may not necessarily perceive recovery as beneficial (Lindblom 1980, Greenwalt 1988, Rohlf 1991). Overexploitation of natural resources may provide short-term benefit to a regional economy despite long-term biological, social, political, and financial consequences. In the United States, the ESA supposedly precludes agencies from considering economic or political factors during the process of identifying species in danger of extinction (Gibbons 1992), but it fails to preclude these same inhibitive factors from affecting the planning and implementation of recovery efforts. For example, land hosting the last known red-cockaded woodpecker colony in Holly Springs National Forest was traded to a developer (Jackson and others 1977), and property values combined with legal threats negatively influenced the implementation of the habitat conservation plan for the Coachella Valley fringe-toed lizard (*Uma inornata*) (O'Connell 1992).

In reality, the ESA has not even always succeeded in precluding economic and political factors from the initial listing process. Because of pressure from the US Department of Interior and the timber industry, the US Fish and Wildlife Service did not list the northern spotted owl (*Strix occidentalis*) as threatened until recently (US General Accounting Office 1989).

Preventing critical review. Organizational representatives may be reluctant to critically review their own implementation performance if self-legitimization is a priority (Yaffee 1982). Channels permitting outside critiques can be closed, or the critique can be impeded by presenting a huge document combined with a very brief time period allowed for evaluation and comments. Another ploy is selecting a biased evaluating team, whose purpose is to produce a positive review and discredit any alternative assessments. When objective evaluation of performance is not permitted, neither individuals nor organizations can be held accountable for their actions. As a result, the recovery plan may be executed inefficiently or actually diverted from the predetermined path.

Reasons to Improve Efficiency

There are six reasons to improve efficiency and effectiveness of endangered species recovery programs, and some are obvious. First, programs that experience even a moderate amount of success are imitated by other programs, but it should be noted that the biological aspects of some species may partially mask programmatic weaknesses. A poor organizational model may demonstrate progress toward recovery on one species but provide disastrous results if applied to a species which has less biological margin of error (e.g., slower reproductive rate, smaller effective population size, fragmented habitat, etc.).

Second, successful programs with organizational weaknesses use a larger proportion of resources (time, money, etc.) than necessary, and those resources could be applied to other equally pressing conservation problems. Many programs are already impaired by insufficient funding for research or management, making efficiency a necessity (Lindblom 1980, Loucks 1992).

Third, if the species occurs in the jurisdiction of more than one agency, the lack of a comprehensive plan reduces interagency cooperation (for example, the first combined meeting of the US and Canadian Whooping Crane Recovery Teams was not held until October 1991; 1992 Endangered Species Technical Bulletin Vol. XVII Nos. 5–8, p. 3). Instead, there can be duplication of effort or important tasks left undone. Poorly defined programs (or stacked recovery teams) can also create unproductive conflict between representations of the different agencies. The resulting antipathy may create distrust and unnecessary delays in future decisions for that particular species or create delays for the next threatened species involving the same agencies.

Fourth, if there is inadequate planning, recovery programs that span agency jurisdictions or geographic boundaries may not be designed to produce the reliable knowledge necessary to rapidly recover the species. Many recovery programs that reintroduce or translocate species over a broad geographic/jurisdictional range have had the learning process slowed by noncomparable, or incomplete, scientific designs. Because these types of data do not often meet qualifications for publication, peer review of the program is inhibited.

Fifth, small populations are very vulnerable to collapse because of genetic disorders, demographic events, habitat erosion, and environmental catastrophes. Without prompt and effective action, small populations move one step closer to extinction each passing day. Any delays, or diversions, in planning or implementation (as discussed in the previous two sections) only make recovery more difficult. Yaffee

(1982) discussed species that have gone extinct because of delays or inappropriate use of science.

Sixth, when representatives of an organization restrict creative input and receive self-orchestrated positive reinforcement for their behavior (e.g., stacked recovery groups or limited critical review), there can be grave repercussions. Through internal self-deception, the organization can actually harden its position, further polarize the political situation, and jeopardize species recovery.

We argue that the efficiency and effectiveness of recovery programs must be improved. Many countries offer legal protection for endangered species, but do not specify procedures for developing and implementing recovery plans. For example, in the United States, the ESA does not specify how the Secretary of Interior will ensure (under Section 4) that protective actions will actually be accomplished. In response, we offer some ideas to address those issues.

A Proposed Solution

Our model is divided into two simple parts: forming and executing a plan. It employs a continuously functioning recovery team that integrates the best expertise (whether government or nongovernmental) into the planning process, introduces accountability and oversight into all phases, and encourages effective implementation.

Formulating a Plan of Action

Only a knowledgeable, experienced team can respond quickly to the uncertainty of endangered species management. The development and implementation of recovery plans requires extreme flexibility, an ability to respond to changing circumstances (and mistakes), and an ability to quickly take advantage of new opportunities and technologies. For this reason, a recovery plan alone should not replace a team. Recovery plans serve an important function, but they are difficult to keep up to date because of rapidly evolving knowledge combined with a cumbersome approval process. We advocate that recovery plans address general goals and that the recovery team meet at least annually (but more often if necessary) to formulate recommendations for crucial issues.

The team should always include recognized biologists who have substantial hands-on experience with the species. Representation from the full range of biological perspectives can also contribute skills in areas such as genetics, habitat restoration, disease, or necessary biological techniques. Equally important, social scientists can assess values and attitudes, economists can predict economic benefits and costs, education/public relations experts can present the program to the public and raise necessary funds, and legal skills may be necessary in some situations. This nonbiological expertise can address specific problems in their respective fields that can be very critical to a successful recovery program. Composition of the team should be fluid enough to include advice from any needed perspective.

The recovery team should not include members, and much less be chaired by a member, whose primary function is to represent an agency. Individual participation on the team should depend on the best scientific or technical skill available, and not the best skill available inside the dominating agency. Political appointees pushing personal or organization agendas will divert attention from recovery requirements. It is important, however, that all participants on the team are aware of the political constraints in which agencies operate.

We recommend that national scientific organizations or worldwide conservation organizations compose a data base of qualified specialists to aid in the formation of recovery teams. These recommendations should be published for public knowledge and comment. The national agency mandated with responsibility for directing the recovery of endangered and threatened species could cooperate with these organizations to form recovery teams.

Team members should be protected from outside interference (Clark and Westrum 1989). Free flow of ideas and information is essential so that criticism can be raised and evaluated in a rational way. The team should operate on a consensus basis and recommendations should be biologically and politically viable. It can be difficult to unify diverse perspectives, goals, and values, but an effective coordinator can enhance the exchange of information and ideas and keep participants on an equal footing (Clark and Harvey 1988, Clark and others 1989). Clark and others (1989) suggested the recovery team function as an organization parallel to the managing agency or agencies, as has been done in private businesses. That is a suggestion that we endorse.

Endangered species programs would also gain credibility if team decisions were published and periodically subjected to critical review by recognized specialists not employed by the lead agency (Goldstein 1992, Marshall 1992). This policy review is necessary to ensure a continuous focus on biologically sound management (the National Science Foundation, National Institute of Health, and the US Environmental Protection Agency have established such protocols). There should also be no constraints on publicly dis-

cussing recovery team decisions. After all, public tax money pays for a large part of the program, and the public deserves to know how their money is spent.

Much of the above-mentioned process for endangered species decision making has been implemented in Canada, with nongovernmental organizations contributing a great deal of scientific expertise (Prescott and Hutchins 1991). In the United States, the recovery of Pacific salmon species addressed geographical, political, and economic problems, and it focused on ecosystem needs in endangered species recovery policy (Volkman 1992). That council consisted of a group of specialists, not representatives of dominating agencies; they designed recovery efforts as a series of testable hypotheses and quickly adapted management strategies (Volkman 1992). Similarly, from 1985 to 1988, an ad hoc team staffed by members of the Captive Breeding Specialist Group (IUCN/SSC) and the American Association of Zoological Parks and Aquariums provided expert advice to the Wyoming Game and Fish Department and the US Fish and Wildlife Service that was critical in the inception and early success of the black-footd ferret captive breeding effort (Miller and others 1993). The National Research Council has been recently asked by the US Fish and Wildlife Service to form committees and make recommendations for several endangered species' recovery programs.

Once the recovery team has outlined priorities, it would send those recommendations to the national agency mandated to direct recovery of threatened and endangered species (if the recovery effort is international, then an international, interagency working group could coordinate). It is important that national (international) policy be determined at the national (international) level. The formation of national (international) policies, however, does not imply exclusion of local concerns, but rather their integration into a larger consistent whole. Clearly, management needs can not be solved by a single "cookbook" approach, as many endangered species occur in a wide variety of habitats and climatic conditions, and those situations cannot be reasonably managed by a single "recipe."

Executing the Plan

When assigning implementation tasks, the national agency or interagency working group mandated to direct recovery may wish to divest some (or all) of its responsibilities to other organizations. For example, responsibility for captive breeding may be given to professionally managed zoological parks; field research may be allocated to private conservation organizations or independent researchers; or a local population may be managed by a local wildlife agency. If this occurs, the implementing organization should accept responsibility for its role via a contractual arrangement with the lead agency. The contract would reduce the probability of policy change during implementation and would help assure that all parties clearly understand their responsibilities and commitments.

For example, in the United States, such a contractual arrangement could function through the US Fish and Wildlife Service permitting process and the Section 6 funding that the US Fish and Wildlife Service allocates to state agencies involved in endangered species recovery efforts. The permitting process could function with proposals published in the Federal Register for comment, or comments on proposals could be supplied to the US Fish and Wildlife Service by the recovery team.

The contractual arrangement would include a review of progress by the recovery team at least annually and, in case of a crisis, on an emergency basis. Reviews are necessary to: (1) evaluate performance by the contractor and (2) redirect policy recommendations. If the individual or organization handling a task did not attempt to meet the contractual arrangement, then the agency mandated to direct recovery could terminate the relationship and extend funding and permits to another individual or organization. While it may be difficult to prevent serious deviation by implementing organizations, the review process would allow the situation to be quickly identified.

In conclusion, these changes would link authority with responsibility and that would heighten overall performance in any recovery effort. With no expert team, no review, and no accountability, the situation can become tyrannical, and it will likely produce many of the pitfalls discussed in the first part of this paper. This does not mean that an inefficient program would not make progress toward recovery. There are recovery efforts that are considered successful by many people, but that still encounter programmatic problems (admittedly, success has various definitions over differing time frames and different contexts). The point is, even "successful" programs may have their efficiency handicapped by organizational problems. It is, therefore, our belief that significant improvements can be made to many recovery programs by addressing organizationally the variables that define the very basis of operation.

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CALIFORNIA CONDOR
Gymnogyps californianus

Description: The California condor is a large, distinctly marked vulture, with a nine foot wingspan and glossy black feathers and white markings on its wings. A dark ruff borders its bald head and neck.

Range: There are no California condors in the wild. The last remaining condors lived in Los Angeles and Santa Barbara counties in California. They are thought to have formerly ranged along the Pacific coast from Canada to Mexico and across the southern United States; Pleistocene condor bones have been found as far east as Florida and even upper New York state.

Habitat: Condors inhabited California mountains and foraged in the flat plains and coastal areas.

Diet: Condors are carrion eaters, feeding on the carcasses of dead deer, cattle and sheep. In former times, when their range was wider, it fed on elk and pronghorn antelope carcasses and on dead seals, whales, and fish along coastal regions.

Social Organization: Condors are monogamous and pair for life. The female lays one egg per season in cliff caves with a sandy substrate. If an egg is broken or taken early in the breeding season they will often lay another. From egg to independence may take over two years.

Conservation Status: There are no California condors left in the wild. One to three captive produced young may be released to the wild as early as late 1991. They are listed as an endangered species in the IUCN Red Book, endangered by the U.S. Fish & Wildlife Service and as an Appendix I species under CITES.

Threats to Survival: California condors were eliminated in the wild by a variety of factors, including lead poisoning caused by eating carrion shot by hunters. Other causes of the condor's demise were pesticide poisoning which weakened its eggs, accidental and deliberate shootings, strychnine and cyanide poisoning intended for coyotes, collisions with high power lines, changes in its habitat due to higher human population and a naturally low reproductive rate.

Zoo Programs - SSP: At present, zoos represent the only hope for the California condor. There are only 40 condors in the world-- held at San Diego Wild Animal Park and the Los Angeles Zoo. In these zoos, condors have laid eggs which have been successfully hatched. California condors are managed with Andean condors under a single SSP program. A studbook was recently completed for the California condor.

Conservation: To reduce the threat of lead poisoning, pure copper bullets are being investigated as an alternative for deer hunting within the future condor range. Protected areas being considered for the reintroduction and conservation of condors include areas outside California such as the Grand Canyon in Arizona and Grey Ranch in New Mexico.

Reintroduction: Female Andean condors have been released at test sites for California condor reintroduction. Since they have a similar diet and range, the Andean condors' progress should be an indicator of how California condors might fare in these areas. The released condors are being encouraged to eat only carcasses set out by the species manager. It is felt that California condors' foraging patterns must be influenced in a way to help them adapt to a modern world, which would require keeping them fed in protected areas a great proportion of the time.

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RED WOLF

Canis rufus

Description: The Red wolf's name is misleading, as its coat ranges from tawny, cinnamon red, grey or black. At 40 to 80 pounds, it is slightly smaller than the Grey wolf, but larger than the coyote.

Range: The Red wolf formerly ranged over the entire southeastern United States, from the Atlantic Coast to Texas and Oklahoma.

Habitat: The Red wolf can adapt easily to live in a variety of habitats, but will often avoid agricultural areas.

Diet: Their diet is primarily made up of small animals, especially rabbits and hares, raccoons, squirrels, rodents and fish, but it will also hunt deer.

Social Organization: Unlike the Grey wolf, the Red wolf does not live in packs but more often in pairs or small family groups. Red wolves breed once a year and have litters of two to eight pups.

Conservation Status: Pure Red wolves are thought to be extinct in the wild, though Red wolf-coyote hybrids may still be found. It is listed as an endangered species by the U.S. Fish & Wildlife Service, and the IUCN Red Data Book. Pure Red wolves are now restricted to small reintroduced groups at Alligator River National Wildlife Refuge, NC; Great Smoky Mountains National Park, TN; Horn Island at Gulf Islands National Seashore, MS; Bull's Island at Cape Romain National Wildlife Refuge, SC; and St. Vincent's Island National Wildlife Refuge, FL.

Threats to Survival: Three problems reduced the Red wolf population-- hunting of the wolves as a livestock predator, destruction of its habitat through logging and agriculture, and hybridization with coyotes. As the wolf has retreated, the coyote has expanded its range to fill the Red wolf's predatory role.

Zoo Programs - SSP: The Red wolf is the first SSP to be combined with a U.S. Fish & Wildlife Service Recovery Plan. All of the Red wolves in the program are owned by U.S. Fish & Wildlife Service and are loaned under a special permit for breeding. It was decided that the only way to save the Red wolf was to capture the remaining pure wild stock and establish a captive breeding program. There are currently about 180 captive and 55-60 free ranging Red wolves, up from 14 wild-caught wolves in 1984.

Conservation: The SSP and reintroduction programs are part of the Recovery Plan for the Red wolf administered by the U.S. Fish and Wildlife Service.

Education: Generating local support for Red wolf reintroduction is crucial to the success of the program. Meetings with area residents, hunters, livestock owners, state and local agencies help to dispel any fears, address concerns and produce enthusiasm for the project.

Reintroduction: The goal of the reintroduction program is to establish several viable populations of Red wolves in select areas of their historic range. Prior to release the wolves are acclimated at the release site and gradually weaned from a daily diet of commercial dog food to twice weekly meat feedings. The wolves are then processed (vaccinated, wormed, blood drawn, weighed), fitted with a radio collar and released. Approximately 70% of the free-ranging Red wolves inhabiting the mainland reintroduction sites have been born in the wild.

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BLACK-FOOTED FERRET

Mustela nigripes

Description: The black-footed ferret is a small weasel-like animal with a black mask around its eyes and black legs and feet. It is between 18 and 22 inches long, including its tail. It weighs up to 2 1/2 pounds.

Range: Through captive breeding, the black-footed ferret once again occurs in the wild at Shirley Basin, Wyoming, where they were reintroduced first in 1991. The last known population in Meeteetse, Wyoming, succumbed to canine distemper. The survivors were removed to captivity. It is thought to have formerly ranged from Mexico to Canada through the western plains states.

Habitat: The black-footed ferret lives almost exclusively in prairie dog towns of the Great Plains. Prairie dog towns are a community network of prairie dog dens and tunnels that can be hundreds of acres. Black-footed ferrets also den in prairie dog burrows.

Diet: Prairie dogs, which are often equal or larger in size than the ferret, make up 90% of the its diet. Its diet is occasionally supplemented with rabbits and rodents.

Social Organization: Black-footed ferrets are thought to be solitary hunters which use a range of around 100 acres each. A male ferret's territory may overlap that of several females with which he mates. Females raise alone a litter of about three to four kits. Black-footed ferrets live underground as much as possible in order to avoid their natural enemies, which are hawks, bobcats, owls, badgers and coyotes.

Threats to Survival: The decline of the black-footed ferret is almost entirely due to government-sponsored poisoning of prairie dog towns and development of farms, roads, towns, etc. over prairie dog colonies. The highly specialized ferret relies on prairie dogs for food and shelter. Prairie dog towns have been reduced by 98% since the turn of the century, though recent studies have proven that the grass-eating prairie dogs are not significant competition with livestock for forage. The final blow to the wild ferrets came in the form of canine distemper, which is always fatal. Any unknown groups of ferrets that may remain in the wild are almost certainly inbreeding.

Conservation Status: Recently considered by many to be the most endangered mammal in North America, the black-footed ferret is listed as an endangered species by the U.S. Fish & Wildlife Service and the IUCN Red Data Book. Sightings of black-footed ferrets are frequently reported, but in most cases these can be traced to escaped domestic ferrets, which are often mistaken for black-footed ferrets.

Zoo Programs -- SSP: The captive breeding program began with just 18 animals at the Wyoming Game and Fish Research Facility. Fortunately, the ferret breeds readily in captivity, like its close relative, the mink. This population has increased to about 330 animals, which are split between the Wyoming facility, Omaha's Henry Doorly Zoo, Louisville Zoo, Cheyenne Mountain Zoo, the National Zoo's Conservation and Research Center, the Phoenix Zoo and the Metropolitan Toronto Zoo. The program has four goals: successful captive breeding, conservation education, habitat preservation and teaching captive ferrets survival skills before they are reintroduced to the wild. One recent development in the program was the successful artifical insemination of three black-footed ferrets, resulting in seven kits.

Conservation: Efforts are underway to end government subsidies for prairie dog poisoning, because their towns support not just black-footed ferrets, but an entire ecosystem of prairie life. Other prairie dog town inhabitants such as burrowing owls and mountain plovers are also threatened when prairie dogs are poisoned.

Education: The century-old beliefs of ranchers concerning prairie dogs cannot be changed overnight, but hopefully they can be persuaded to allow prairie dogs to coexist with their cattle.

Reintroduction: Black-footed ferrets have been released in the Shirley Basin of Wyoming. The reintroduction appears successful, and it is hoped that they can be permanently established there within the next few years. Reintroductions are being planned for other states where black-footed ferrets formerly occurred.

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03 August 1995

The Honorable Dirk Kempthorne
Chairman
Subcommittee on Drinking Water, Fisheries and Wildlife
415 Senate Hart Office Building
Washington, DC 20510

AMERICAN ZOO AND AQUARIUM ASSOCIATION

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Dear Chairman Kempthorne,

Thank you for the opportunity to provide testimony before the Senate Subcommittee regarding the reauthorization of the Endangered Species Act. In this correspondence, which we request be made part of the record, we would like to briefly follow up on several issues raised during the question and answer period that may be useful to you and other Subcommittee members.

The American Zoo and Aquarium Association (AZA) believes the most prudent and cost effective way to preserve species is to protect their habitat. As a result of this belief, we also believe **captive breeding for reintroduction** should be used as a last resort. However, captive breeding for developing husbandry methods, conducting research, and retaining genetic variation should begin well in advance. It is important that early efforts at captive breeding are encouraged so the captive breeding community can respond quickly and with the proper expertise if requested. In the past the AZA has had the good fortune of having experience with similar species which has allowed us to assist endangered species such as the California condor and the black-footed ferret. If we do not plan ahead, this may not always be true.

The AZA also supports the creation of incentives and regulations that encourage private-public partnerships in the protection of endangered species. The evolving recovery program for the black-footed ferret is an excellent example of success in this area. This program is a cooperative effort led by the USFWS and involving several federal and state wildlife agencies, nongovernment organizations, private businesses, and private landowners. It is also important that recovery allow multiple use when possible. At this time there appears to be no reason why release sites for black-footed ferrets cannot also support hiking, back-packing, cattle grazing and other nondestructive uses. It is our hope that this excellent program which is moving forward in a cooperative, multiple use effort will not be hampered by proposed cuts in the USFWS budget.

We would also encourage the Subcommittee to examine the system being implemented for the endangered Wyoming toad regarding the need to search private lands for toads and curtailing the use of pesticides on private lands. This innovative program, developed with the cooperation of public and private partners, sets a given number of searches for the toad on private lands within a given time period. If no toads are discovered, the land use restrictions are eased with respect to insecticide application. There is also an effort to assist landowners in using alternative control agents rather than insecticides. As an added note the toad's captive breeding program has recently shown great success with Wyoming Game and Fish and several AZA zoos.

Thank you for this opportunity to provide additional information to the Subcommittee. If you have any further questions or need additional information, please do not hesitate to call upon us at the AZA.

Sincerely,

Robert J Wiese

Robert J. Wiese, Ph.D.
Assistant Director for Conservation and Science

Kristin Vehrs
Deputy Director

STATEMENT OF JEFF CILEK, PROGRAM DIRECTOR, THE PEREGRINE FUND, BOISE, ID

Good morning. Thank you for the opportunity to testify before the Subcommittee on Drinking Water, Fisheries and Wildlife. I am Jeff Cilek representing The Peregrine Fund.

I would like to use my time today to provide a brief historical overview of The Peregrine Fund, discuss some of our conservation programs, and then discuss a specific problem we are having with some of the current environmental laws.

INTRODUCTION

The Peregrine Fund is a non-profit conservation organization headquartered in Boise, Idaho. The organization was founded in 1970 at Cornell University in response to the catastrophic decline of the Peregrine Falcon throughout much of North America. The efforts to save this species resulted in breakthroughs in the field of endangered species research.

In addition to the Peregrine Falcon. The Peregrine Fund is involved with species such as the Harpy Eagle, California Condor, Philippine Eagle, Aplomado Falcon, Mauritius Kestrel, Orange-breasted Falcon, Hawaiian forest songbirds, and other species.

The Peregrine Fund also has numerous other conservation projects around the world that focus on preserving endangered environments (e.g. forests, wetlands, etc.) and improving local people's conservation ability. These programs are in Madagascar, Guatemala, Kenya, and elsewhere.

We strongly believe in cooperative efforts involving individuals, organizations, corporations, and government, a belief that has been the cornerstone of the program to restore the Peregrine Falcon.

We are a results oriented organization that works locally, nationally, and internationally. Preserving highly visible, popular, far-ranging species results in many benefits. By focusing on raptors and other birds and their ecological requirements, and providing sufficient protection to sustain viable populations, we are using birds to provide an umbrella of protection for the diversity of life and the entire ecosystem associated with them.

PEREGRINE FALCON

When The Peregrine Fund was founded in 1970, there were no known pairs of Peregrine Falcons nesting east of the Mississippi River and they were 80 or 90 percent gone in the West. Experts from around the world were convinced that DDT and other organochlorine pesticides had been responsible for unprecedented population crashes of the falcon in both Europe and North America.

Many scientists feared that the Peregrine might disappear from most or all of its range in North America. Against that background of concern, a number of biologists and falconers felt that captive breeding might be a way to save the bird. Fueling this hope was the fact that the Peregrine Falcon had once been bred successfully by a German falconer during World War II.

Fortunately, in 1972 the first EPA Administrator, William Ruckelshaus, convinced President Richard Nixon's to ban the use of DDT in 1972 for nearly all purposes in the USA. There was hope that the environment would soon be clean enough for the reappearance of the Peregrine and that by proper release of captive bred falcons, the species had a chance.

Shortly after President Nixon signed the Endangered Species Act in 1973, the founder of The Peregrine Fund, Dr. Tom Cade, felt that the meat of the law was right up front in the "Findings" section which states: "The Congress finds and declares that . . . encouraging the States and other interested parties, through Federal financial assistance and a system of incentives, to develop and maintain conservation programs which meet national and international standards is a key to meeting the Nation's international commitments and to better safeguard, for the benefit of all citizens, the Nation's heritage in fish and wildlife."

Dr. Cade also found in the Act the statement: "It is further declared to be the policy of the Congress that all Federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purposes of this Act."

This language provided the opportunity for some moral persuasion. Dr. Cade went to the U.S. Army at the Aberdeen Proving Grounds in Maryland in the Chesapeake Bay. At the time there was an individual doing some work on Bald Eagles. After reviewing this policy statement he convinced the Army to provide The Peregrine Fund with $15,000 if the Fish and Wildlife Service would match it. The Service agreed and we received our first Federal contract to release Peregrine Falcons.

That was the beginning of a remarkable national and international cooperative effort to restore the Peregrine Falcon, an effort which is probably unparalleled in wildlife conservation. For the past 20 years, all of the main Federal land holding agencies have been involved both as funders and as active participants in the field. In addition, numerous other organizations provided assistance. These included State wildlife agencies, cities, counties, universities, conservation groups, foundations, utility companies, mining companies, oil companies, timber companies, insurance companies, banks, hotels and many, many others.

As you know, Mr. Chairman, late last month the Secretary of the Interior, Bruce Babbitt, announced a proposal to delist the Peregrine Falcon. The population of the bird has risen from less than 50 pairs in 1970 to over 1,000 pairs now. Essentially there are as many Peregrine Falcon now as there ever have been. We will continue with our restorations for the next few years with releases in Idaho, Montana, North Carolina, Virginia, Wyoming, Idaho, Washington, and Oregon.

We learned two important lessons with the recovery of the Peregrine Falcon. First, is that the technology developed for the Peregrine Falcon could be adapted for use on other species which I mentioned earlier. Second, the best way to succeed in conservation is through the use of common sense, goodwill, and reason.

PERMITTING

What I would like to bring to your attention today are on some of the difficulties we are having with the Fish and Wildlife Service's permitting process.

Over the past 25 years, well intended laws designed to protect wildlife have been enacted. Each law was enacted to serve a specific purpose related to the protection of wildlife. These laws and the applicable regulations promulgated from them have had the unfortunate side effect of crippling well intentioned conservation organizations. Obtaining the necessary permits to undertake conservation of endangered species is extremely difficult, costly and time consuming. I dare say that if these well intentioned laws had been in effect in 1970, we probably would have had a much more difficult time recovering the Peregrine Falcon.

Let me attempt to provide some examples.

INTERNATIONAL

Under the terms of the regulations stemming from Endangered Species Act for the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES), a permit is required from the exporting country and from the importing country for each specific event being undertaken.

For example, The Peregrine Fund has been working with the very rare Harpy Eagle for several years. It is a two-pronged effort where we are building a breeding stock at our headquarters in Boise and undertaking habitat level studies in South America. The goal of the program is to return young Harpy Eagles hatched in Boise to areas where the species has been extirpated in South and Central America.

Over the past few years we have identified several candidates for captive breeding in South American countries, primarily in Venezuela and Ecuador. Under the terms of CITES an export permit is required from the Venezuelan government, the exporting country, and an import permit is required from the United States government, the importing country. Although both countries are operating under the terms of the same treaty, it takes approximately 3 weeks to obtain the permit from the Venezuelan government and 7 months to obtain the permit from the United States.

It is very expensive and time consuming for a U.S. organization like The Peregrine Fund to build a reputation in a foreign country to work with these species. The unnecessary delays encountered trying to obtain a permit from our own government are embarrassing at best and at worst can cause programs to be halted. More importantly is the fact that instances have occurred where Harpy Eagles have died while awaiting the necessary permit from the U.S. Government.

I am pleased to say that we have persevered and have built our breeding stock to ten pairs. Unfortunately, our permitting problem is not over. Additional permits will be required to return the young to Central and South America.

Please allow me to use another example to explain this.

The Mauritius Kestrel is a well documented recovery effort. The species existed on the tiny island of Mauritius, off the coast of Madagascar, and was down to two known wild pairs. Through an aggressive captive propagation effort by a number of organizations, including The Peregrine Fund, the species has been recovered but not without some unnecessary permitting problems.

Timing is critical to successfully reintroduce a species and there is a limited window of opportunity in which a young bird can be reestablished. Beginning one year in advance we were unable to obtain the necessary permits from the U.S. Govern-

ment to return Mauritius Kestrels to Mauritius. These delays ultimately forced us to move the program to the United Kingdom.

Information required for every permit is similar in nature to the previous permit, especially if the permit is for the same species. On one occasion when The Peregrine Fund had waited 5 months for a permit to import a Harpy Eagle, the Fish and Wildlife Service contacted us and requested additional information on The Peregrine Fund's breeding facilities. This information had been submitted with two previous approved applications. Nonetheless we provided this information and after several additional weeks of waiting, the Fish and Wildlife Service requested that the same information be resubmitted using a different size format so that would better fit in their filing system.

DOMESTIC

CITES permits are not the only problem. Domestic permits are also extremely difficult. In December 1991, The Peregrine Fund requested renewal of our endangered species permit for Peregrine Falcons. In July 1992 the Fish and Wildlife Service requested resumes of all subpermittees on the permit. In August 1992, the Fish and Wildlife Service faxed us and requested that we provide "a brief description of the activity each person will be conducting under the permit and whether that individual will be working alone or under supervision of more experienced people." At this point we indicated that the "game had gone beyond reason" and simply told the Service that if they felt The Peregrine Fund did not have necessary qualifications to work with Peregrine Falcons then they should not issue us the permit. The permit was issued soon thereafter.

Fortunately, the permitting issue does not appear to be a partisan issue. We have had equally bad luck with Republican and Democratic administrations attempting to have it changed. Over the years we have had several meetings with the Service to discuss the problem and see what might be worked out. The meetings have been cordial but fruitless.

Another fortunate aspect is that the import/export problem does not appear to be related to CITES. Clearly the Venezuela and Ecuador have more efficient systems. In addition, it is my understanding that the European Economic Community uses a reporting system. After an organization is approved it is provided with a stack of blank certificates. A copy of the certificate is sent to the respective governmental agency and the original travels with the individual.

I am very confident that The Peregrine Fund is not the only organization that is having these problems. If the Committee had the time to spend, there would probably be a line of well meaning conservation organizations with similar problems.

PROPOSED SOLUTION

The solution we are proposing is similar to the system used in Europe. The various laws currently require every "event" to have a separate permit. We are proposing that "organizations" involved in conservation be provided with a blanket permit. Such a "Conservation Permit" would allow an organization to carry on all activities which are permitted by the laws listed. The organization would be required to submit reports annually on the activities they have undertaken. Of course, the Secretary could revoke such a permit for violations of the conditions and standards set forth.

CONCLUSION

I would like to again thank you for the opportunity to present to you the views of The Peregrine Fund. As you proceed toward the reauthorization of the Endangered Species Act, please keep our concerns in mind.

MEMORANDUM

To: Honorable Dirk Kempthorne, Chairman
Senate Subcommitte on Drinking Water, Fisheries and Wildlife

From: Jeff Cilek, Program Executive
The Peregrine Fund

Date: July 20, 1995

Subject: Explanation of Proposed Amendments to the Endangered Species Act.

With this reauthorization of the Endangered Species Act (ESA), the Congress has the opportunity to refocus and enhance one of the nation's primary environmental laws. The amendments proposed here are intended to deal with some of those areas which hamper scientists, conservation organizations actively working with species, captive propagators and recreational wildlife enthusiasts.

Title I. Issuance of Permits.

Reasonable Terms and Conditions for Permits

Section 10(a)(1) would be amended very slightly to ensure that any conditions or terms set in permits issued would be reasonable.

Authorizing the Issuance of General Permits

Many organizations and individuals who actually work and deal with animals pursuant to ESA authority and other federal laws, must seek a myriad of special permits. The issuance of several permits for essentially the same purposes is time consuming, expensive, and wasteful for the regulatory authority. This amendment is intended only for the organization or individual who has worked and continues to work long term on wildlife projects.

A General Permit, by these amendments, may be issued to appropriate organizations and individuals who have been working under a permit for more than ten years, or who have received at least 5 permits issued in the aggregate pursuant to the laws listed. A single comprehensive permit would authorize the permittee to carry on all activities which are permitted by the laws listed. Such a permit would be effective for ten years.

Any organization or person who does not currently have a permit must apply for a new general permit and be able to demonstrate the same qualifications of ten years or the issuance of five permits in the aggregate. A general permit will not be issued for any organization who has not met the conditions and standards of previously issued permits.

Many organizations and individuals may continue to work under a single permit under one of the laws because they do not need or desire the comprehensive authority provided by this comprehensive general permit.

Title II. Captive Bred Wildlife.

Exemption of Certain Captive Bred Wildlife

Section 9(b)(1) is amended by adding a new subsection exempting second generation captive bred wildlife from the ESA and the laws listed pursuant to the General Permit amendment above. Generally, most biologists conclude that wildlife has become, for practical purposes, domesticated when it has been bred in captivity for two generations. The amendment would require the applicant for exemption to be able to verify, with appropriate records and proof, that the animal is domestic by the second generation standard. Any domestic animal which is intentionally and permanently released to the wild would be considered wild and thus be protected by federal law.

If the animal, even though it is considered domesticated, is used in some activity which requires a permit, then there will be some limitation of its use by virtue of the limitations placed on the activity. For example, educational, circus or falconry permitted activities may be limited by conditions and standards. Consequently, animals used in these activities will be inherently limited.

Title III. Listing of Species.

Listing of Resident Species of the United States

The amendments to Section 4 of the ESA are intended to limit listings to native species only. Since 1973 the international legal framework has changed dramatically by the internal efforts of virtually every nation to deal with their own species according to laws or regulatory systems similar to our own. The vast majority of the nations are signatories to the Convention on International Trade in Endangered Species (CITES) and consequently they adhere to the restrictions placed on species listed on the appendices. The CITES Appendices are the appropriate common ground for international listings.

This amendment limits listings to only those species "naturally occurring within the territorial boundaries of the United States". This limitation includes all animals which exist permanently within the U.S. and those which spend some time of the year here through migration.

Even though the ESA lists are restricted to resident species of the United States, species listed on the CITES Appendices will continue to be protected. Enforcement of restrictions on CITES listed species is specifically provided for by Section 9(c), Violation of Convention.

Similarity of Appearance Limited by Marking

The Similarity of Appearance section (4(c)) is amended to limit its application to subspecies of a species when their geographical regions join or overlap when the animals are living in the wild. The amendment further eliminates its application to those animals held or taken into captivity which can be appropriately marked and identified. The basis for the application of Similarity of Appearance must be for sound biological reasons, that is, the imminent and significant threat to the species' well-being.

Title IV. Modifications to International Relationships.

Foreign Assistance for Non Native Species

Sections 8(a), (b) and (c) are amended to provide for foreign assistance, when determined to be appropriate, for non native species (species not listed on the U.S. lists) when those species are listed according to the foreign nation's law. The United States, either by direction of Congress or the Executive Branch, may believe it is in the United States' interest to assist another nation in the conservation of an endangered or threatened species.

International Investigations on Listed Species

Law enforcement investigations may be carried out abroad on species listed on the U.S. lists. This section is amended so as to concentrate law enforcement activities on U.S. wildlife. Also, this does not prohibit foreign law enforcement agents from traveling to the United States for purposes of training and assistance in wildlife matters by United States law enforcement agencies, nor does this amendment prohibit United States law enforcement agents from traveling abroad to enforce illegal activities regarding species listed on CITES Appendices.

Mandatory Reservations by the United States

The amendments to Section 8A(d) would amend the ESA to require the U.S. to take a reservation to a CITES appendix listing which the U.S. delegation voted against during a Conference of the Parties. In most cases the U.S. delegation votes against a listing but then refuses to take a reservation to the listing to support its position. The U.S. delegation then makes a report.

The amendments will require the U.S. to take a reservation to a listing which it has opposed unless, in a hearing before the appropriate committees of the Congress, it explains why a reservation ought not be taken. By this means, extraneous politics will be removed from what should be a purely biological decision.

AMENDMENTS TO THE ENDANGERED SPECIES ACT

Title I **Issuance of Permits.**

Sec. 101. **Reasonable Terms and Conditions for Permits.**

Section 10(a)(1) (16. U.S.C. 1539(a)(1) is amended by inserting "reasonable" after "under such".

Sec. 102. **Authorizing the Issuance of General Permits.**

Section 10(a) (16 U.S.C. 1539(a)) is amended by adding after paragraph (2) the following new paragraph:

"(3)(A) - The Secretary may issue a general permit to any qualified organization or person for any category of activities related to scientific study, species recovery, captive propagation and any other activities related to wildlife species permitted pursuant to this Act and the laws listed in subparagraph (B).

(i) The Secretary shall issue a general permit within 30 days from the effective date of this Act to any qualified organization or person who has demonstrated the ability to handle or recover species for a minimum of 10 years or who has at least five (5) permits in the aggregate issued pursuant to this Act or the laws listed in subparagraph (B); or

(ii) The Secretary shall issue a general permit within 90 days of receipt of a completed application from any qualified organization or person who currently does not hold any permit but who has demonstrated the ability to handle or recover species for a minimum of 10 years or who has received at least five (5) permits in the aggregate and who has not violated any terms or conditions of any previously issued permits pursuant to this Act or the laws listed in subparagraph (B).

"(B) - A general permit issued pursuant to subparagraph (A) shall be effective for a period to be specified by the Secretary, but not less than ten years after the date of issuance of the permit. The Secretary may require an annual report or any other specific information but no more

often than annually on the activities authorized by the general permit. Any activity which may be permitted pursuant to subparagraph (A) or permitted by the Bald and Golden Eagle Protection Act, as amended, 16 U.S.C. 668-668d, the Fish and Wildlife Conservation Act, as amended, 16 U.S.C. 2901-2911, the Lacey Act Amendments of 1981, 18 U.S.C. 42; 16 U.S.C. 3371-3378, the Marine Mammal Protection Act, 16 U.S.C. 1361-1407, the Migratory Bird Conservation Act, 16 U.S.C. 715-715d, the Migratory Bird Treaty Act of 1918, as amended, 16 U.S.C. 703-712, or the Wild Bird Conservation Act of 1992, P.L. 102-440 shall be consolidated into a general permit to cover all authorized activities, notwithstanding any law or regulation to the contrary.

"(C) - A general permit issued pursuant to subparagraph (A) shall provide comprehensive authority by eliminating any need for additional permits from the Secretary. A general permit issued pursuant to subparagraph (A) shall set forth reasonable requirements and standards, if appropriate and necessary, that apply to any activity and may be issued to cover activities for several species or groups of species or taxa simultaneously.

"(D) - The Secretary may revoke a general permit issued hereunder for violations of the conditions and standards set therein."

Title II **Captive Bred Wildlife.**

Sec. 201. **Exemption of Certain Captive Bred Wildlife.**

(a) IN GENERAL . . . - - subsection (b)(1) of section 9 (16 U.S.C. 1938(b)(1)) is redesignated as subsection (b)(1)(A).

(b) Captive Bred Wildlife Exemption. - - section 9(b)(1) (16 U.S.C. (b)(1)) is amended by adding a new subparagraph after subparagraph (A) (as redesignated by subsection (a) of this section) as follows:

"(B)" Fish or wildlife which are the second generation or later progeny of fish or wildlife held in captivity or in a controlled environment shall be considered domestic fish or wildlife for all purposes and shall not come under the provisions and prohibitions of this Act and the laws listed in Section 102(3)(B) unless intentionally and permanently released to the wild. Any person holding any fish or wildlife or their progeny as described in this paragraph must be able to demonstrate

that the fish or wildlife do, in fact, qualify under the provisions of this paragraph, and shall maintain and submit to the Secretary, on request, such inventories, documentation, and records as the Secretary may by regulation require as being reasonable and appropriate to carry out the purposes of this paragraph. Such requirements shall not unnecessarily duplicate the requirements of other rules and regulations promulgated by the Secretary.

Title III **The Listing Process.**

Sec. 301. **Listing of Resident Species of The United States.**

(a) Resident Species. Section 4(a)(1) (16 U.S.C. 1533(a)(1)) is amended by inserting after "any species" the following: "naturally occurring within the territorial boundaries of the United States".

(b) Section 4(b)(1)(B) (16 U.S.C. 1533(b)(1)(B)) is amended by inserting after "species" the following: "naturally occurring within the territorial boundaries of the United States".

(c) Section 4(b)(3)(A) (16 U.S.C. 1533(b)(3)(A)) is amended by inserting after "to add a species" in the first sentence the following: "naturally occurring within the territorial boundaries of the United States".

(d) Section 4(b)(7) (16 U.S.C. 1533(b)(7)) is amended by inserting after "fish or wildlife, or plants" the following: "naturally occurring within the territorial boundaries of the United States".

(e) Section 4(b)(7)(B) (16 U.S.C. 1533(b)(7)(B)) is amended by striking the first phrase beginning with "in the case . . ." and ending with ". . . fish or wildlife or plants,".

(f) Section 4(c)(1) (16 U.S.C. 1533(c)(1)) is amended - -

(1) by striking in the first sentence the word "all" in both places where it occurs before the word "species", and insert the word "only" in lieu thereof in both places.

(2) by inserting in the first sentence after the word "species" in both places where it occurs the following: "naturally occurring within the territorial boundaries of the United States".

Sec. 302. **Similarity of Appearance Limited by Marking.**

(a) Section 4(e)(A) (16 U.S.C. 1533(e)(A)) is amended by inserting after "unlisted species" the following: "that occurs in a separate, non-contiguous geographical region and when harvested or taken into captivity it cannot otherwise be identified with an appropriate marker or other identifying device; and," and by striking the semicolon.

(b) Section 4(e)(B) (16 U.S.C. 1533(e)(B)) is amended by striking the word "an additional threat" and inserting in lieu thereof "a significant risk to the well-being of", and by striking "," and after "species" and inserting in lieu thereof a ".".

Title IV. **Modifications to International Relationships.**

Sec. 401. **Foreign Assistance for Non Native Species.**

(a) Section 8(a) (16 U.S.C. 1537(a)) is amended by striking in the first sentence after "endangered species and threatened species" the remainder of the first sentence and inserting in lieu thereof the following: "listed by the appropriate management authority of the foreign country on its lists of endangered species and threatened species pursuant to its own national law".

(b) Section 8(b)(1) (16 U.S.C. 1537(b)(1)) is amended by striking after "threatened species" the balance of the sentence and inserting in lieu thereof the following: "listed pursuant to subsection (a) of this section".

(c) Section 8(c)(2) (16 U.S.C. 1537(c)(2) is amended by striking "or abroad," after "this country", and by striking "abroad" after "professional assistance".

Sec. 402. **International Investigations on Listed Species.**

(a) Section 8(d) (16 U.S.C. 1537(d)) is amended by inserting after "abroad" the following: "on only species listed pursuant to Section 1533 of this title".

Sec. 403. **Mandatory Reservations by the United States.**

(a) Section 8A(d) (16 U.S.C. 1537a(d)) is amended:

(1) by striking after "Appendix I or Appendix II of the Convention " the words "and does not" and inserting in lieu thereof the following: "it shall immediately".

(2) by striking after "species" the "," and inserting in lieu thereof a "." and then by striking the balance of the sentence.

(3) by adding the following new sentence after the amended first sentence pursuant to this subsection: "If the Secretary of State desires not to enter a reservation with respect to that species, the Secretary, within 90 days of not entering the reservation shall request and be given a hearing by the Committee on Natural Resources of the House of Representatives and by the Committee on Environment and Public Works of the Senate to explain why said reservation should not be entered."

STATEMENT OF GERHARDUS J. HANEKOM, MINISTER OF ENVIRONMENT AND TOURISM, REPUBLIC OF NAMIBIA

POTENTIAL IMPACT OF THE US ENDANGERED SPECIES ACT ON DOMESTIC CONSERVATION PROGRAMMES IN NAMIBIA

ADDITIONAL BACKGROUND TO THE PAPER "SUGGESTIONS FOR THE IMPROVEMENT OF THE UNITED STATES ENDANGERED SPECIES ACT" SUBMITTED BY BOTSWANA, MALAWI, NAMIBIA AND ZIMBABWE

Critical issues

Several important aspects of the Endangered Species Act (ESA) are considered to be detrimental to the successful implementation of wildlife conservation policies aimed at enhancing the protection status of species outside protected areas as well as contribute to rural development. The Government of Namibia has severe difficulties in accepting that the U.S. government should take unilateral measures with respect to foreign species without due regard to the objectives and merits of domestic conservation programmes in range States. It is of the utmost important that conservation measures, including international regulations, should be compatible with the conservation policies and programmes applicable to a species in its country of origin. The most acceptable situation to Namibia would be the deletion of all reference to foreign species in section 4(a) of the ESA.

In the attached paper titled "Suggestions for the improvement of the United States Endangered Species Act" submitted by Botswana, Malawi, Namibia and Zimbabwe, issues of critical importance are highlighted. We request that the ESA be revised to ensure that the ESA administrators are obliged to:

- Conduct full and meaningful consultations with the affected foreign governments before listing a non U.S. species in the ESA;
- Use objective criteria to decide if a species is at risk, and aligning the ESA with CITES;
- Use cost-benefit analyses to determine whether the conservation benefits of actions outweigh the costs to the local non–U.S. communities.
- Defer under normal circumstances to the foreign nation's determination as to the conservation strategy that is most likely to protect the species at risk that reside within that nation's territory;
- Exercise their discretion about "threatened" species in favor of granting exemptions for well-regulated sport-hunting and commercial trade;
- Grant exemptions for non–U.S. specimens (including sport-hunting trophies) where the use is sustainable (even though the use may not be necessary to relieve population pressures);
- Eliminate penalties against tourists and hunters for violations that are inadvertent.

Background

Namibia is a large arid country in Southern Africa with a surface area of approximately 824,000 km^2 (ca. 318,000 sq. miles) and a human population of only ca. 1.6 million. The dominant form of land use is extensive livestock farming mixed with game ranching and the landscape is largely unaltered from the pre-colonial State. Most of the country is too arid to sustain high human, livestock or wildlife densities and direct competition for resources occurs between people, livestock and wildlife. Transformation of wildlife habitat has occurred where human settlements have excluded all major wildiife components through domination of scarce surface water sources. This process is expected to accelerate, particularly in the northern communal lands which support about two thirds of the human population. Emerging from decades of authoritarian rule and the liberation struggle, this region has become a development priority.

Namibia currently has ca. 13.1 percent of its land surface proclaimed as protected areas (national parks and game reserves), including three of the oldest, most famous and largest reserves in Africa, i.e. the Etosha National Park (ca. 22,000 km^2), the Namib–Naukluft Park (ca. 50,000 km^2) and the Skeleton Coast Park (ca. 16,000 km^2). The Namibian government spends as a percentage of per capita income more on protected area management, law enforcement and conservation than any country in Africa except South Africa. In almost every instance, however, protected areas are still not large enough to contain viable wildlife populations in isolation, largely because of the general aridity of the region and periodic droughts. Parks are at best regarded as core protected areas for wildlife populations which also depend on land used for other purposes.

The transfer of ownership of common game from government to individual landowner in 1976 and the subsequent extensive commercial use of this wildlife has

caused a conservation revolution on land in private ownership. In 20 years, ca. 3500 of the ca. 6000 ranches in private ownership have also become involved in some form of wildlife utilization; while 435 units have been registered as hunting ranches, another 130 as game-fenced areas and 184 as private nature reserves, with a total area of ca. 45,035 km^2 predominantly or exclusively used for wildlife-based enterprises. There is undoubtedly more game on privately owned land than in the State proclaimed protected areas in Namibia, and there is presently more wildlife in Namibia than at any other time this century. Significant investment in wildlife use has occurred and more than 150 establishments operate as tourist or hunting lodges, many having been developed through foreign investment. Landowners at great expense have restored to a great extent the original wildlife communities on game ranches, a process actively encouraged by government.

Thirty-eight per cent of Namibia consists of communal land supporting some two thirds of the human population, including the poorest sector of the population. Namibia has not yet been able to slow down its rapid rate of human population growth, and increasing pressures are exerted on natural resources including wildlife populations. Wildlife in these regions are under considerable threat and there is a limited opportunity to prevent the conversion of prime wildlife habitat to other forms of land use and to use the same incentives to repeat the wildlife recovery experienced on private land. Not only are people increasingly unwilling to absorb economic losses caused by wildlife, but are expecting development to take place in their regions that would ultimately exclude most populations of large game species. People are, however, willing to set land and other resources aside for wildlife (in addition to formally proclaimed protected areas) and continue to live with problematic species such as elephants, crocodiles, hippos and lions if they could derive a substantial benefit. Communal lands hold more than half the national elephant population, about a third of the black rhino population (the last significant black rhino population in Africa that exists outside a protected area), and important segments of the national buffalo, hippopotamus, leopard, wild dog, and rare antelope populations.

Wildlife populations in some communal lands have recovered to such an extent that people derive considerable benefit through hunting for their own use, one of the few examples of legal citizen hunting in Africa.

Conservation Philosophy of the Namibian Government

The Namibian Government is committed to the sustainable use of indigenous wildlife, and the maintenance of biological diversity, as provided for in the Namibian Constitution. The Namibian government fully recognizes its international responsibilities to protect wildlife, as can be seen in its active involvement in the world's conservation agreements and fora. Namibia's protected area network is already larger than the international norm, but several species are under threat on communal lands. Namibia is currently revising its conservation laws to give the same rights over wildlife to people on communal and commercial areas, and has also initiated the process of drafting comprehensive environmental legislation. The primary beneficiaries from sustainable use of wildlife on communal lands will in the near future be the poorest communities in Namibia. It is of the utmost importance to them that the international markets for wildlife use remain open and are opened further. Key elements of this policy include:

- promotion of the highest economic value possible for such wildlife through the most diverse use of wildlife on a sustainable basis, including non-consumptive use;
- delegation of responsibilities and rights of use to the lowest social level possible, to ensure that people having to live with troublesome wildlife have an opportunity to benefit from the same wildlife;
- assisting communities to develop capacity to establish community based wildlife utilization schemes, including sport hunting and eco-tourism.

Specific Namibian Examples of the Potential Detrimental Impact of the ESA on Domestic Conservation Programmes

Cheetahs: Namibia has the largest remaining population of cheetahs in the world, primarily as the result of the extensive farming practices followed, low human population density and a relatively intact prey community. More than 90 percent of the cheetah population (approximately 2,500–3,000 in 400,000 km^2) occur not within the protected areas, but on farmland, and are responsible for significant economic losses on large stock farms and game farms under certain circumstances. The Ministry of Environment and Tourism estimates that an average of 300 cheetahs are illegally destroyed on farmland each year. Cheetahs occur sparsely over a large area controlled by so many individual land users that government is unable to provide effective protection and monitor population trends. The only practical solution is to sup-

port a conservation scheme which provides incentives for landowners to tolerate cheetahs, such as increasing revenues available from hunting. Professional hunters have initiated a scheme to increase the number of cheetahs hunted by tourist hunters and commit a substantial amount per animal hunted for cheetah conservation and to compensate landowners for economic losses suffered. This scheme will not work while the cheetah continues to be listed as endangered in the ESA. The current ESA listing obstructs Namibian attempts to introduce sustainable use to the benefit of conservation and is inexorably linked to a decline in the Namibian cheetah population.

Elephant: Namibia has approximately 8000 elephants, almost all of which spend a part of each year outside protected areas. Elephant crop damage account for major economic losses amongst the poorest people in Namibia. Apparent population increases (elephants occur in an area of approximately 80,000–100,000 km^2 of northern Namibia and government has not been able to count the entire population frequently) and similar increases in human populations have increased the incidence of conflicts between people and elephants significantly and rural people are demanding that elephants be removed from their land. The crop-growing season in Namibia is very short and it is not possible to grow a second crop after the first had been damaged by elephants. People are justified in blaming elephants for rural impoverishment and hardship. The same species could nevertheless potentially be the most valuable renewable resource to people on marginal lands in parts of Namibia.

The potential revenue that can be generated from controlled use of elephants can be a significant contribution to local economies, and could outcompete any form of subsistence agriculture. People will not commit to the development of the elephant resource rather than subsistence agriculture if there remains a constant threat that important markets could be closed unilaterally by foreign governments. Namibia currently has great difficulty in exporting elephant sport-hunting trophies to the United States because of the way that the Fish and Wildlife Service (FWS) administers the ESA. The Act requires that Namibia not only shows that the hunting of elephants is non-detrimental (as required by CITES) but in addition that hunting actually enhances the conservation status of the species. The guidelines formerly and currently used by the FWS appears abstract and capricious. The nature of the ESA, where a species can be reclassified from Threatened to Endangered without consultation with the affected range State renders a pragmmatic conservation programme highly insecure even when a favorable finding has been made.

* * * * *

Annex: Suggestions for the improvement of the United States Endangered Species Act" submitted by Botswana, Malawi, Namibia and Zimbabwe.

14-1/0016

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REPUBLIC OF NAMIBIA

MINISTRY OF ENVIRONMENT AND TOURISM

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FAX TRANSMISSION

The Honorable Dirk Kempthorne
United States Senate
Washington DC 20515

Fax: (09-1-202) 224 5893

1995-07-24

Dear Senator Kempthorne

Senate Hearings on the Endangered Species Act

In addition to the testimony from the southern African countries at the Hearings of the Subcommittee on Drinking Water, Fisheries and Wildlife, I would like to highlight two issues of concern and potential misunderstanding which I feel may not have been adequately addressed during the Hearing due to time constraints.

Firstly, I wish to stress that community based wildlife management initiatives have the two equally important objectives of (1) ensuring species survival and habitat protection outside protected areas by providing economic incentives, and (2) improving the standard of living of poor rural communities through sustainable land management practises.

Namibia is in the process of amending legislation to give communal landholders the same rights over wildlife as on privately owned land, a step that has already been taken by some of our neighbouring countries. We see this initiative as the only way to maintain populations of dangerous, destructive

and predatory species outside our extensive protected areas. This approach is designed to supplement the traditional conservation measures in place in Namibia and neighbouring countries, where central government maintains extensive networks of proclaimed national parks (including some of the largest and oldest national parks in the world) and enforces stringent wildlife protection legislation.

The second issues which I would like to clarify relates to testimony given by others to the Hearing, which suggests that US citizens subsidize the killing of wild animals in Namibia and Zimbabwe through the community conservation programmes supported by USAID. I want to point out that funds made available through the far sighted support of USAID funds are in fact used for community development initiatives such as the strengthening of local institutions and managerial skills, wildlife management infrastructure, environmental education and the transformation of unsustainable land use practises. At no time have any funds been used to subsidize safari hunting.

I respectfully request that this letter be entered for the record of the Hearings and the re-authorization process in the Senate.

Yours sincerely

G.J. Hanekom
Minister of Environment and Tourism

STATEMENT OF THE CAMPFIRE ASSOCIATION OF ZIMBABWE

THE U.S. ENDANGERED SPECIES ACT AND RURAL COMMUNITIES IN AFRICA

Mr Chairman, distinguished members of the House, Ladies and Gentlemen. Thank you very much for the opportunity you have accorded me to testify in this hearing. My name is Stephen Kasere, Deputy Director of a Community based conservation programme in Zimbabwe called CAMPFIRE.

Mr Chairman, we the people of the remote parts of Zimbabwe's communal areas are extremely disturbed by the foreign component of your proposed Endangered Species Act which we feel will jeopardize our well designed and thought out strategies of conservation through the CAMPFIRE programme.

But before giving details of CAMPFIRE let me first of all give you a brief background of my country and the circumstances under which the CAMPFIRE programme was born. Zimbabwe, gained its independence in 1980. It has a total land area of 391,000 square kilometers and a total human population of 10.6 million. During the colonial era, European settlers claimed the best land, pushing the majority population of black people into arid and semi arid areas which are now called communal areas.

It is in these communal areas where 55 percent of Zimbabwe's total population live in abject poverty. The major reasons for such poverty include (a) lack of capital and infrastructural development during the entire century of colonial rule (b) poor rainfall and incessant droughts (c) crop damage caused by elephants which break out of neighboring national parks and (d) shortage of alternative capital and arable land for resettlement.

The colonial government did not concern itself seriously about the development of the communal areas. As a result most of these areas are without schools, clinics, boreholes, dams and other necessary instruments for development. Thousands and thousands of children go to bed hungry every day and the sight of people withering slowly because of malnutrition and disease are not so uncommon in these areas where the average annual income of a household rarely amounts to U.S. $100.

However, the biggest source of agony for the rural communities stems from their geographical location. Most of the communal areas are adjacent to or surround the country's official wildlife sanctuaries (national parks) which themselves constitute 13 percent of the country's total land area. The most problematic of the species has always been the elephant whose population over the years multiplied to around 70,000. This figure is well above the parks' official carrying capacity which is pegged at 30,000. The problem with elephants is that they refuse to recognize the officially designated boundaries and therefore roam around in communal areas where they destroy crops and homesteads and, at times, kill people in the process.

Having been subjected to such hardships and costs, and with colonial legislation which denied them rights to hunt or benefit from game in the past, communal people (before CAMPFIRE) had developed a strong hatred for these animals and thus always supported poachers from neighboring countries who hunted these dangerous animals for their horns and ivory. The much publicized loss of our rhino populations in Zimbabwe is enough testimony of our people's apathy with animal protectionist laws of the past, a painful experience which led to loss of species and was responsible for the birth of CAMPFIRE.

CAMPFIRE is a programme which seeks to return the custodianship of wildlife and other resources to rural communities. In providing rural communities with proprietorial rights over local resources, CAMPFIRE seeks to establish and strengthen institutions at village level so that rural communities are equipped to use their natural resources in a sustainable way and to manage the revenues derived from such controlled wildlife commercial activities. As a synthesis of environment and development concerns, CAMPFIRE removes the apparent dichotomy between (a) environment and development and (b) agriculture and wildlife, to constitute a programme of sustainable development which treats wildlife as an additional component of farming that should be embarked on for commercial incentives.

It is important to mention here that although CAMPFIRE was initiated by a government department, in practice, it is not implemented by a single organization. Many specific functions such as conducting aerial surveys, institution building, training, etc. have been assigned out to non-governmental bodies.

However, the Department of National Parks still remain a key player as they train game guards, set up quotas and monitor the programme. The Department monitors key species populations to ensure biological sustainability and quotas set by this department restrict sport hunting offtake to not more than 0.75 percent of the total elephant population in each concession. The increase in population of elephants in most CAMPFIRE areas suggests that this strategy is sustainable.

The overall results of CAMPFIRE are very positive and speak for themselves. The programme which started off with two districts in 1988, has since spread to 25 thus providing over 3.5 million rural poor with the technical know-how to utilize their resources.

Sport hunting is the primary source (90 percent) of revenue to the CAMPFIRE programme. Of this, 64 percent is from sport hunted elephant. Between 1989 and 1992, 12 districts which had received "Appropriate Authority" from the Department Of National Parks and Wild Life Management to manage and benefit from wildlife earned more than Z$11.5 million from wildlife based activities, of which over Z$10 million (90 percent) was derived from sport hunting alone. Wildlife based tourism is a source of income for several districts, but the unsuitable terrain and low wildlife densities means that tourism is often not a viable alternative to sport hunting.

The bulk of revenues (approx. U.S. $2 million per year) generated have been poured into development of much needed projects such as schools, clinics and grinding mills whilst a further Z$2.5 million (approx. U.S. $300,000) has been invested in wildlife management activities such as the employment of game guards, and problem animal reporters which are key to the protection of these important resources. Thus apart from generating income, CAMPFIRE has become a major source of employment for hundreds of rural people most of whom could never dream of securing employment for the rest of their lives.

Commercial poaching has declined significantly in most parts of the country and since the normal offtake of any species is normally far below the growth rate for species, there has been significant increase in populations of some species in most CAMPFIRE districts, thus paving way for culling (only in extreme cases) or translocation where and when necessary to maintain ecological balances. Wildlife habitat has also witnessed a significant increase from about 12 percent of the land area in 1980 to almost one third today. This increase in population of species is the graphic indicator that the community based conservation programme is sustainable.

It is however important to realize that sport hunters from the United States account for between 60 percent and 80 percent of all the trophy hunting for elephants. Other clients come mainly from Germany, Spain and South Africa. For these and several other reasons, it is clear to see why our people see the Endangered Species Act as a matter of life and death. We feel that the sport hunting of elephants, leopards and other species which you have listed on the Endangered Species Act is tenuous and constantly subject to threat. Threat from the listing or relisting of species without reference to us, and threats from interpretation of the Act which suggests that even threatened species cannot be hunted unless they are in excess and there is no other way to reduce their numbers.

Zimbabweans and many other Southern African countries are fully behind "Suggestions for the improvement of the United States Endangered Species Act" submitted by the Chairman of SACIM which I think you are already aware of and therefore not necessary for us to go through now because of limited time. Further to that, Zimbabweans feel that the Endangered Species Act is triggered more by emotion rather than objectivity—political concerns of the voting people of America rather than serious interests of conservation of species in Africa. They think that the Endangered Species Act, in as far as it addresses foreign species is paternalistic. The Act sees us as cold blooded exterminators of wildlife who should be controlled from outside and fails to realize that the African people themselves have a great passion for their wildlife. As a matter of fact Zimbabweans have a strong cultural attachment to their wildlife which make it highly imperative to utilize game sustainably as almost every animal has a spiritual significance. Almost every indigenous black Zimbabwean has a totem of animal which means that he associates his survival with the survival of that particular animal. These beliefs have outlived colonialism and are themselves better and more serious reasons for conservation than mere aesthetic concerns of the green movement. What this points to is that so many countries in Africa have certain unique values which can be integrated with modern scientific conservation making it imperative for the United States government and specialists at least to consult meaningfully with us, preferably through representatives forums like CITES, before making decisions which affect our lives.

Let me emphasize here that our concern is neither to interfere with the Endangered Species Act insofar as it deals with your species in America nor plead here to be allowed to ruthlessly massacre our wildlife for profit. We are not callous wildlife killers as latest spate of propaganda campaigns by the green movement would have you believe. We are a rational group of people whose development is at its lowest ebb and therefore trying to find out how best we can utilize our limited land for both conservation and development. We are a people battling to find lasting solutions of dealing with elephants and other dangerous species which are constantly

testing the speed of our children and to generate a few dollars to cushion our costs of recovering decomposing bodies of those children whose speed is not good enough.

Mr. Chairman, as much as we respect that the Endangered Species Act is your internal business and that we do not vote in American politics, it is our most profound opinion that this Act be changed. As it is it takes away the only benefits from poor countries of conserving wildlife without taking away the heavy costs. I am sure it is not beyond your ability to accommodate a few changes which will suit all rational individuals who wish to see Africa's spectacular wildlife survive and our people develop. Thank you.

MINISTRY OF AGRICULTURE NATURAL RESOURCE CONSERVATION AND DEVELOPMENT,
Wildlife Conservation and Development Organization,
October 9, 1991.

DR. CHARLES DANE,
Chief, Office of Scientific Authority, Fish and Wildlife Service,
Washington, DC.

DEAR SIR: We refer to your questionnaire sent to us about African Elephant proposed endangered listing.

In answer to your questionnaire:

1. Yes our country has allowed sport hunting of African Elephant in the past. The revenue received from those American sport men who have hunted African Elephants can be seen for the years 1987 to 1991 as follows:

Year	Revenue obtained (in Birr)		No. of hunters who came and hunted	
	EWCO	Prof H.	R	K
1987	211,934.98	652,627.50	53	35
1988	275,260.00	643,742.50	42	31
1989	207,033.00	448,642.50	29	24
1990	30,330.00	106,710.00	6	3
1991	5,735.00	13,950.00	1	1.
Total	730,292.98	1,865,672.50	131	94

2. Yes and no.

Yes because professional hunters have used part of the revenue for establishing camps around hunting areas, for hiring laborers among which some used to be poachers, but now work as guides, trackers, gun bearers, skinners, etc.

No for what is obtained by our organization is sent to the central treasury, except some is requested for paying informers and capturers of illegal wildlife products.

3. Since our organization has to stand on its own feet through sustained utilization of its wildlife, the revenues from the American sport hunters are important in our elephant management plans in particular and in our wildlife resource as a whole.

The impact that could occur if sport hunting stops is that revenue would be less and thus, instead of standing on its feet, the organization would be forced to subsidize its shortage through the aid of donor agencies and organization.

4. There is an elephant action plan which is being prepared. Therefore, using this action plan as a guide, it would be possible to implement it using the revenue obtained as a result of sport hunting.

Yours sincerely,

TADESSE G. MICHAEL,
Manager.

ETHIOPIAN ELEPHANT CONSERVATION DEVELOPMENT PROGRAMME
Ethiopia, November 9, 1992.

GENERAL MANAGER,
Ethiopian Wildlife Conservation Organization,
Addis Ababa.

SUBJECT: ELEPHANT HUNTING QUOTA IN ETHIOPIA

DEAR ATO TADESSE: Thank you for bringing to my attention the reemerging issue of a hunting quota for elephants in Ethiopia. I understand that the original intention of the Ministry of Agriculture was to finish the 1992 quota and then await the findings of the Ethiopian Elephant Conservation Development Programme before any further decisions concerning elephant hunting in Ethiopia were to be made. As I understand it, there is some discrepancy as to whether or not it was intended for the 1992 quota to be allowed to finish during 1993.

Following the completion of the first 5 months of the EECDP, not enough information has been gathered to allow the coordinators to make recommendations concerning the definitive future of elephant hunting in Ethiopia. However, there are several factors that lead to an educated opinion concerning the immediate future of elephant hunting in Ethiopia. For the following reasons it is my firm belief that elephants will be in danger from increased poaching if the professional hunters pull out their influence from the areas in which they are currently active.

(1) The professional hunting operations I have seen are well organized to protect the elephant populations from illegal poaching. This is most often done by hiring local people as laborers, scouts, and informants. On a regional basis the hunting operations benefit both the protection of elephants and their habitats, as well as support for the local economy.

(2) The Ethiopian Wildlife Conservation Organization, even if they would act today, would be unable to replace this established system as quickly as would be needed. Financially and logistically it would be a very large endeavor, and it is unclear as to the origin of the necessary funds and manpower in an organization that is already overworked.

(3) Although absolutely no population estimates are possible, a recent serial survey of parts of the southwest forest may indicate there is a stronger population of elephants than previously believed in this region. It should be noted this information was collected by indirect evidence, the presence of trails, and must not be used as a conclusive statement of abundance.

(4) I believe any harm that would come to the population from the hunting of the remaining 1992 quota of elephants would be far outweighed by the benefits that the professional hunters supply in terms of population protection.

My current recommendation is to allow the professional hunters to use the remaining quota until definitive recommendations concerning the hunting of elephants in Ethiopia can be made and enacted.

I have read Ato Fassil Tekle's letter to you concerning this issue with interest. I notice that he also suggests recommending to the Ministry of Agriculture that the 1992 quota is fulfilled during 1993. I support his recommendation, however, I have one query as concerns the number of elephants remaining on the quota. This question arises from inexperience with CITES regulations.

According to Ato Fassil's letter, 14 elephants have been killed, 1 elephant has been wounded, and 26 licenses have been requested. Does a CITES quota account for licenses sold or for animals actually killed or wounded? In other words, are there 25 (40 minus the 15 killed and wounded) or 14 (40 minus the 26 licenses requested) of the original quota of 40 animals still available?

As I am sure you are aware Wzo Tegest Dachew, EECDP co-coordinator, is working on a report concerning elephant hunting in Ethiopia. I believe many of the arguments concerning the future of elephant hunting in Ethiopia will be closely examined in her report. Data for the report are currently being collected, however, the report will not be available prior to the time when any immediate decisions concerning hunting will need to be made.

Please do not hesitate to contact me concerning my views expressed within this letter.

With all best wishes,

ELYSSA E. MANSPEIZER,
Coordinator.

ETHIOPIAN WILDLIFE CONSERVATION ORGANIZATION,
October 1992.

MR. RICHARD SMITH,
Deputy Director, Department of the Interior, Fish & Wildlife Service,
Washington, DC.

RE: THE STATUS OF ELEPHANTS IN ETHIOPIA

DEAR MR. SMITH: As I am certain you are aware, our present knowledge of Ethiopia's elephant population is somewhat limited. At present a European Commission funded project is underway in cooperation with the Ethiopian Wildlife Conservation Organization to determine the number, distribution, and conservation status of elephants in Ethiopia. The research is expected to continue through June 1993, at which point the study will be used as the basis of recommendations for the future conservation of elephants.

The Ethiopian government has decided to complete the 1992 elephant hunting quota allowed it by CITES and will refrain from deciding upon the future conservation methods for its elephants until the results of the above mentioned study are announced. Although the government is awaiting the results of this study, there is a large range of possible recommendations that may be made following the project year.

Depending upon the findings of the study these suggestions may range from the establishment of new conservation areas and the creation of intensive antipoaching operations to protect Ethiopia's elephants (if the findings indicate that Ethiopia's elephants have been so severely decimated), to the apportionment of controlled hunting areas to professional hunters for their guardianship in a system not dissimilar from that found in Zimbabwe (if the findings indicate there are enough elephants in Ethiopia to sustain a legal hunting quota.) In addition, it is entirely conceivable that recommendations for elephant conservation in Ethiopia will cover the full range of suggestions between those two listed depending upon the regional needs and conditions of individual populations.

At this point this is only conjecture, as the path Ethiopia will choose for the future sustainable conservation of its elephants will not be decided until at least the summer of 1993, and until that point the government of Ethiopia is trying to keep its options open concerning the conservation of its elephants.

In the meanwhile, I hope that the United States will authorize the importation of safari-killed elephant trophies which have been and are a vital part of our present conservation program.

Yours Sincerely,

TADESSE G. MICHAEL,
Manager.

Office of Management Authority
4401 N. Fairfax Drive, Room 432
Arlington, VA 22203
Call: 703/358-2104 for more information

OMB NO. 42-R167?

U.S. FISH & WILDLIFE SERVICE

DEPARTMENT OF THE INTERIOR
U.S. FISH AND WILDLIFE SERVICE

FEDERAL FISH AND WILDLIFE LICENSE/PERMIT APPLICATION

1. APPLICATION FOR (Indicate only one)
☐ IMPORT OR EXPORT LICENSE ☒ X PERMIT

2. BRIEF DESCRIPTION OF ACTIVITY FOR WHICH REQUESTED LICENSE OR PERMIT IS NEEDED.

ENDANGERED/THREATENED SPECIES PART

____ Take
_X_ Import
____ Export
____ Interstate Commerce

3. APPLICANT (Name, complete address and phone number of individual, business, agency, or institution for which permit is requested)

John J. Jackson, III
Suite 1380, 3900 N. Causeway Blvd.
Metairie, LA 70002
504/837-1233; Fax: 504/837-1145

4. IF "APPLICANT" IS AN INDIVIDUAL, COMPLETE THE FOLLOWING

☒ MR. ☐ MRS. ☐ MISS ☐ MS.

HEIGHT	WEIGHT
5'8"	160

DATE OF BIRTH	COLOR HAIR	COLOR EYES
June 29, 1944	Steel	Brown

PHONE NUMBER WHERE EMPLOYED	SOCIAL SECURITY NUMBER
504/837-1233	434-64-2003

OCCUPATION
Attorney/SCI Vice President

ANY BUSINESS, AGENCY, OR INSTITUTIONAL AFFILIATION HAVING TO DO WITH THE WILDLIFE TO BE COVERED BY THIS LICENSE/PERMIT
N/A
Personal use and display only

5. IF "APPLICANT" IS A BUSINESS, CORPORATION, PUBLIC AGENCY OR INSTITUTION, COMPLETE THE FOLLOWING

EXPLAIN TYPE OR KIND OF BUSINESS, AGENCY, OR INSTITUTION
N/A

NAME, TITLE, AND PHONE NUMBER OF PRESIDENT, PRINCIPAL OFFICER, DIRECTOR, ETC.
N/A

IF "APPLICANT" IS A CORPORATION, INDICATE STATE IN WHICH INCORPORATED
N/A

6. LOCATION WHERE PROPOSED ACTIVITY IS TO BE CONDUCTED
Zimbabwe, Africa

7. DO YOU HOLD ANY CURRENTLY VALID FEDERAL FISH AND WILDLIFE LICENSE OR PERMIT? ☐ YES ☒ NO
(If yes, list license or permit numbers)

8. IF REQUIRED BY ANY STATE OR FOREIGN GOVERNMENT, DO YOU HAVE THEIR APPROVAL TO CONDUCT THE ACTIVITY YOU PROPOSE? ☐ YES ☐ NO Unknown
(If yes, list jurisdictions and type of documents)
Darting will not be conducted until approval is formal.

9. ~~EXPRESS~~ CHECK OR MONEY ORDER (if applicable) PAYABLE TO THE U.S. FISH AND WILDLIFE SERVICE ENCLOSED IN AMOUNT OF
$ 25.00

10. DESIRED EFFECTIVE DATE
As soon as possible

11. DURATION NEEDED
1 year

12. ATTACHMENTS. THE SPECIFIC INFORMATION REQUIRED FOR THE TYPE OF LICENSE/PERMIT REQUESTED (See 50 CFR 13.12(b)) MUST BE ATTACHED. IT CONSTITUTES AN INTEGRAL PART OF THIS APPLICATION. LIST SECTIONS OF 50 CFR UNDER WHICH ATTACHMENTS ARE PROVIDED.

SEE REVERSE See Attachments

CERTIFICATION

I HEREBY CERTIFY THAT I HAVE READ AND AM FAMILIAR WITH THE REGULATIONS CONTAINED IN TITLE 50, PART 13, OF THE CODE OF FEDERAL REGULATIONS AND THE OTHER APPLICABLE PARTS IN SUBCHAPTER B OF CHAPTER I OF TITLE 50, AND I FURTHER CERTIFY THAT THE INFORMATION SUBMITTED IN THIS APPLICATION FOR A LICENSE/PERMIT IS COMPLETE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF. I UNDERSTAND THAT ANY FALSE STATEMENT HEREIN MAY SUBJECT ME TO THE CRIMINAL PENALTIES OF 18 U.S.C. 1001.

** SIGNATURE (In ink) John J. Jackson III

DATE
December 8, 1992

3-200
18/761

**Applicant listed in 3 above or principal officer listed in 5 above must sign.

ENDANGERED OR THREATENED WILDLIFE & PLANTS

COMPLETE THE FOLLOWING:

a. Species: Diceros bicornis (Black Rhinoceros) - horn only
(scientific and common name)

b. Quantity: 1 horn c. Birth date and sex of wildlife: Unknown (adult) to be darted only.

d. Identifying features of wildlife (e.g., tattoo #, ISIS #, scars etc.):
Only horn from darted rhino.

e. Name and address of party from whom wildlife or plant will be obtained:

Will be taken by me personally on a dehorning/darting tourist safari for personal display as a trophy.

part

f. At time of application, wildlife/or plant (i) is still in the wild XX ; (ii) has been removed from the wild ____; or (iii) was born in captivity or artificially propagated ___. Provide country and specific location of wild origin or captive propagation: Zimbabwe

ATTACH THE FOLLOWING INFORMATION ON PLAIN WHITE PAPER:

g. A description of your attempts to obtain the wildlife or plant in a manner which would not cause death or removal from the wild (i.e., the use of specimens currently in captivity or produced in captivity, etc.).

h. Name and address of institution or facility where wildlife or plant will be used, displayed or maintained.

i. A statement justifying the permit including: 1) purpose, objectives, whether similar work has already been done, and methods (attach research proposals, if appropriate), 2) resume of the technical expertise of the persons conducting the activities, and 3) planned disposition of specimens upon termination of activities.

j. Copies of contracts and agreements that identify duration of activities and persons involved in the activities for which the permit is sought. Will funding be available for the completion of the proposed activity?

k. Copy of any foreign, state or other Federal permits required. (Note: If species is listed on Appendix I of CITES, and you plan to export a specimen, send a copy (or evidence of issuance) of the CITES import permit issued by the Management Authority of the country to which you plan to export it; this is not required for specimens that qualify under CITES criteria as Pre-Convention, Captive-bred or Artificially Propagated.

l. If live wildlife or plants to be covered by permit are to be held in captivity:

1. Give a complete description, including photographs and/or diagrams, of the area and facilities where wildlife or plant will be held and/or maintained in captivity and describe arrangements for care during transportation and maintenance, if applicable.

2. Resume of persons who will care for live specimens including any experience they have had in raising, caring for, and propagating similar wildlife or plants.

3. List mortalities resulting from your activities with these or similar species in the last 2 years.

4. Indicate your willingness to participate in a cooperative breeding or propagation program or to contribute data to a studbook, if applicable.

5. If born in captivity or artificially propagated outside your facility, provide certification of such from breeder or propagator.

6. If planned activity includes import or export and the species are listed under CITES, describe the type, size and construction of any shipping containers and the arrangements of watering and otherwise caring for the wildlife or plants during transportation.

ATTACHMENT

g. This application is only for the purpose of importing the horn that will be removed after darting the rhino during a tourist dehorning safari. The intent of the safari will be to remove the horn without killing or injuring the animal. The objective is to release the rhino alive and to import the removed horn for personal display as a safari trophy.

h. The horn will be displayed in my home (4501 Neyrey Drive, Metairie, LA 70002) or in my office (3900 N. Causeway Blvd., Metairie, LA 70002). It will be displayed on a plaque or made part of an artificially created taxidermy rhino head and/or shoulder mount. Only noncommercial personal use is intended.

1. The purpose will be as a personal trophy and as a conservation measure to prevent the poaching of the rhino. The CITES Secretary General, the CITES Animals Committee Chairman, numerous nations and authorities agree that immediate action is necessary to save the remnant black rhino population. There is agreement that innovative and drastic emergency measures need to be taken. There is agreement that the establishment of a rhino darting/dehorning safari market can generate needed revenue, reduce the principal incentive of poachers, offset the cost of dehorning by the authorities and landowners, and even enhance the competitive value of rhino to African governments and private land owners. U.S. sportsmen are more likely to bear the cost of such a safari if and in most instances, only if, they are able to import the removed horn as a personally acquired trophy. It is respectfully submitted that public notice that the U.S. will allow such imports would greatly expedite and facilitate the initiation of such darting/dehorning safari conservation activities. CITES authorizes such imports under CITES Article III and the ESA authorizes it because it "enhances" the survival chances of the species. See the attached documents for further information.

2. I am an experienced big game hunter and expert marksman who has taken numerous elephant, buffalo and other large dangerous game. I intend to conduct the darting and removal activity in the manner and as dictated by the rules and regulations of the Zimbabwe government.

3. N/A.

j. Numerous private landowners, outfitters and booking agents have contacted me, but the choice of whom the safari will be with has not yet been made.

k. I anticipate that Zimbabwe will issue a CITES Appendix 1 export permit.

l. N/A.

LIST OF ATTACHMENTS

1. TRAFFIC Letter to John Jackson dated August 10, 1992
2. CITES Animals Committee Report of July, 1992
3. IUCN (SUWP) Letter of March, 1992
4. CITES Standing Committee, Trade in Rhino Horn, Doc. S.C. 28.15
5. The Hunting Report dated July, 1992
6. CITES Animals Committee Draft Minutes dated July, 1992
7. Letter of Robert Jenkins dated August 18, 1992
8. TRAFFIC Recommendations for Kyote dated March, 1992
9. Analyses of IUCN dated January, 1992
10. Letter from The Zambeze Society to John Jackson dated July 3, 1992 and attachment
11. Dehorning Mortality Report by Kock, M.D.
12. SCI News Article dated November, 1992
13. Second SCI News Article to be Published

1-18-92 Read

Safari Club International

(A NEVADA CORPORATION)

John J. Jackson, III
3900 N Causeway, Ste 138(
Metairie, LA 70002
Tel. (504)837-1233
Fax (504)837-1145

January 7, 1993

VIA FEDERAL EXPRESS

Sandra Bruce
Biologist
U.S Fish & Wildlife Service
Office of Management Authority
4401 N. Fairfax Drive, Room 432
Arlington, Virginia 22203

Re: File No. 774792
Species: Horns from Darted Black Rhinoceros

Dear Ms. Bruce:

This and the attached documents are intended to be a supplement to my permit application to import the horns of a black rhino that are removed in a darting/dehorning safari in Zimbabwe. The attached documents are, as follows:

A. **UNEP'S EFFORTS TO SAVE THE WORLD'S RHINOCEROS**, A UNEP circular from the UNEP Meeting in Nairobi, December 16, 1992.

B. **PROJECT PROPOSAL DESCRIPTIONS AND PRIORITY RANKING**, pages 7 through 11 of ARSG in November, 1992.

C. **SHORT AND MEDIUM TERM ACTION PLANS FOR BLACK RHINOCEROS**, Department of National Parks and Wildlife Management, Zimbabwe in April, 1992 (this is select pages addressing the need and plans for dehorning safaris by the Zimbabwe government).

D. Namibia's evaluation of dehorning by the government rather than safari tourist (not cost effective and not sustainable by the government itself).

E. Statement to UNEP on the rhino conservation mission of SCI.

F. **A WHITE RHINO DARTING SAFARI**, by Christopher M. Kinsey, describing the darting of a white rhino in

the Republic of South Africa.

G. **AFRICA THINKS ABOUT MAKING WILDLIFE PAY FOR ITS SURVIVAL**, The New York Times, Sunday, December 27, 1992.

It is submitted that dehorning by governments is a burden on their already taxed budgets and personnel. Darting by United States tourist safari hunters is self-funding and perpetuating. Darting safaris will enhance the survival of the species directly and indirectly, as follows:

1. Self Funding - Tourist, outfitters and landowners will be bearing the cost instead of the wildlife departments and will do so as long as needed;

2. The revenue the landowners and the local people receive from the darting safaris will provide substantial incentive to breed and protect the species;

3. The revenue the wildlife department gets from the activity will augment their budget and enhance the rhinos lawful value;

4. Poaching will be decreased because of the lawful value darting safaris will give the species. Landowners and community people and their leaders will protect their source of the recurring income. It will then be worth more alive than poached/dead;

5. Import of the horns by U.S. sportsmen as trophies is the most effective means of disposing of the removed horn other than destruction which is highly unlikely; and

6. Darting/dehorning can be a long term as well as short term enhancement activity.

Thank you for considering these additional documents. Time is of the essence. The SCI Convention begins on January 20th and the booking agents, outfitters and government officials will all be asking me for a status report on the import of the horn into the United States. If any determination can be made before then, please fax it to me.

Everyone is awaiting word of approval. This is a species on the brink of extinction.

Sincerely,

John J. Jackson, III
Director, Renewable Wildlife
Resources Committee

JJJ:sal

Enclosures

cc: Charlie Dane (OSA)

Safari Club International - Conservation Activities

I. MAJOR DOMESTIC PROGRAM ACTIVITIES

The domestic program activities are funded by donations and contributions from Chapters. During the SCI Fiscal Year, SCI was involved in 8 major domestic programs.

1. AMERICAN WILDERNESS LEADERSHIP SCHOOL

(Gros Ventre Wilderness, Wyoming)

Funded and operated entirely by Safari Club International and in continuous operation since 1976, the resident American Wilderness Leadership School has trained thousands of teachers, natural resource agency leaders and high school level student in the content and methods of conservation, environmental and outdoor education. Recently, with great success, the school began offering seven day Elder hostel programs for retirees during the early summer and fall months. This past summer, the school provided resident sessions for five teacher, one student and four Elder hostel courses. The teacher training programs are accredited for two hours of graduate credit through Indiana University and graduates of the course are eligible for curriculum development grants of up to $1,000 for their local school systems.

2. INTERNATIONAL WILDLIFE MUSEUM

(Tucson, Arizona)

Funded and operated entirely by SCI, the International Wildlife Museum is a world class, state of the art, natural history museum which has gained fame through its major exhibits, unique interactive computer games, educational publications, field trips and wildlife art. With grant funds from SCI Sables and the International Wildlife Foundation, the Museum was able to publish a unique teaching guide to natural history museums. Following its publication, the curriculum guide has been given away at no cost to teachers, school systems and environmental education associations in the United States, Canada and Mexico.

3. ENVIRONMENTAL EDUCATION CURRICULUM DEVELOPMENT GRANTS

Annually, SCI funds grants to local school systems for the development of environmental education curriculum units. Grants were made to:

--Cleghorn Elementary, Wisconsin	$ 750
--Cedar Grove-Belgium Area School District, Wisconsin	$1,000
--Lancaster Middle School District, Wisconsin	$ 880
--Fairview Outdoor Education Center, Maryland	$1,000
--Crestwood Community Middle School, Florida	$1,000
--Environmental Education and Cultural Exchange, Washington	$ 400
--Nooksack Valley Schools, Washington	$1,000
--West Bloomfield Schools, Michigan	$ 900
--Dearborn Public Schools, Michigan	$ 990
--San Diego School's Balboa Park Program	$1,000
--School Board of Palm Beach County, Florida	$1,000
Total	**$5,835**

Safari Club International - Conservation Activities

4. **STUDENT SCHOLARSHIPS**

Annually, SCI awards stipends to outstanding undergraduates who are majoring in natural resource management. Scholarship payments were made to:

--Bill Wallace	$1.000
--Jim Settle	$1,000
--Li-Jung Tai	$1.000
--Mat Oates	$1,000
--Geoffrey Love	$1,000
Total	**$5,000**

5. **ENVIRONMENTAL EDUCATION TEACHERS WORKSHOP GRANTS**

Annually, SCI awards stipends to outstanding undergraduates who are majoring in natural resource management. Scholarship payments were made to:

--Detroit Chapter of SCI, Michigan	$1,000
--St. Louis Chapter, Missouri	$1,000
--Pennsylvania Chapters	
Lehigh Valley	$1,000
Pittsburgh	$1,000
Total	**$4,000**

6. **MATCHING GRANTS TO SCI CHAPTERS FOR CONSERVATION PROGRAMS**

Annually, SCI awards matching grants to domestic and foreign chapters which are involved themselves in funding wildlife research and management projects. Grants were made as follows:

--Leigh Valley, Pennsylvania River Otter Research	$2,500
--Minnesota, Fishing Program Development, Black Bear Research	$2,500
--Michigan, "Tracks" Educational Magazine Program	$2,500
--W. Central, NY, Duck Nesting Program	$2,500
--Michigan, Michigan Outdoors and "Tracks" Magazine	$2,500
--Wisconsin, Bobcat Population Study	$2,500
--Detroit, Michigan, Moose Study	$2,500
--Montana, Lake Elmo Handicap Angler Fishing Pier	$2,500
--Mid-Michigan, County Shooting Range Development	$2,500
--East Ohio, NW Pennsylvania, Pickard Creek Wildlife Area Devel.	$2,500
--Maine, Inland Fisheries and Wildlife Building Project	$2,500
--Louisiana, Black Bear Study	$2,500
--Flint, Michigan, Black Bear Study	$2,500
--Pittsburgh, Carnegie Museum of Natural History Exhibits	$2,500
--Utah, Moose relocation	$2,500
--Minnesota, Arrow Wounding Study on Deer	$2,500
--Portland, Oregon, Black Bear Movement Study	$2,500
--Mid-Michigan, Tracks Educational Magazine Distribution	$2,500
--Minnesota, Live Wolf Education Exhibit	$2,500
Total	**$47,500**

Chapters have many more projects in the conservation arena. Each is required to have one conservation project per annum and most have many more, totaling hundreds of projects per annum.

Safari Club International - Conservation Activities

7. GRANTS TO AID THE DEVELOPMENT OF WILDLIFE ASSOCIATIONS

SCI, through its funding has encouraged the development and support of regional and national wildlife associations. During the year, it made general operating grants to:

United Conservation Alliance	$ 8,000
Idaho guides & Outfitters Association	$ 5,000
Congressional Sportsmen's Caucus	$ 5,000
Conservation Treaty Support Fund	$ 3,000
Alaska Outfitters Support	$10,000
Total	**$19,000**

8. SPONSORSHIP OF WILDLIFE CONFERENCES

As part of SCI's public education mission, it has helped to underwrite an international natural resource conference this past year. Congress co-contributors include US Forest Service, Boone and Crockett Club, The Wildlife Society (USA), IUCN and other Non-Governmental Organizations.

International Congress on Sustainable Use in Costa Rica	**$10,000**
African Trust Harrare	**$ 3,000**
The Wildlife Society - Albuquerque	**$ 5,000**

II. MAJOR INTERNATIONAL PROGRAM ACTIVITIES

International program activities are funded by donations and chapter contributions. SCI involvement in six international activities highlight major areas of emphasis.

1. SCI HIRES CONSERVATION DIRECTOR AND A RESOURCE ECOLOGIST

Dr. William I. Morrill, a Certified Wildlife Biologist with a Ph.D. in ecological planning was hired 1 January 1993 after an exhaustive global search. Dr. Morrill's background is in sustainable use and developing outdoor recreation. He has been involved in conservation on the local, national and international level for 20 years. Dr. Morrill will develop and direct conservation projects for SCI.

SCI hired Andre DeGeorge in August of 1994 as a Resource Ecologist. Mr. DeGeorge has worked with the international donor agency, USAID, as well as the U.S. Environmental Protection Agency and Peace Corps. Andre speaks fluent French and has spent over a decade in Africa as a problem analyst for AID. His experience with problems and solutions in Africa will serve SCI well.

Safari Club International - Conservation Activities

2. SCIENTIFIC STUDIES, CONSERVATION WORKSHOPS, MEETINGS

SCI contributed to several international scientific research projects. Both were undertaken as part of a team effort to address timely conservation issues. SCI supports programs that move resource management towards sustainability, including various appropriate uses. SCI sent large contingencies to CITES and Biodiversity.

IUCN, funded Saiga Antelope Study, Russia	$ 7,000
Argali Population Study by Dr. Raul Valdez, Kyrgyzstan, and Mongolia. Co-Sponsored with Mongol-An	$ 7,500
Sponsored Conservation Workshop for Ethiopia Wildlife Department Organization (& Sent Representatives)	$ 6,500
Co-Sponsored Hunting Workshop in Tanzania with African Wildlife Foundation/Tanzania Wildlife Department	$ 5,000
Wildlife Foundation/Tanzania Wildlife Department	$ 5,000
Cameroon Ministry of Forestry and **Professional Hunters**	$ 7,500
A seven person team to **CITES**	$12,000
A four person team to **Biodiversity**	$ 9,000
A Three person team to the **Cameroon Elephant Workshop**	$ 5,000
Total	**$64,500**

3. ENDANGERED SPECIES - RHINOS

SCI sent representatives to both ('92 and '93) UNEP Rhino Conferences in Nairobi, Kenya. SCI has provided a written bill for the conservation of the world's rhinos to members of the US Congress which eventually became the Rhino and Tiger Conservation Act of 1994. .

4. FORMER SOVIET STATES CONSERVATION PROGRAM

An SCI representative was part of a US delegation to Russia and other former Soviet States to evaluate their conservation program.

5. SPECIES RESEARCH/MANAGEMENT

SCI is developing hunter questionnaires on the various species taken overseas in cooperation with and to be distributed with permits by USFWS to gather management information, heretofore unattainable.

6. FUNDED PLANNING DOCUMENT FOR CONSERVATION STRATEGY

SCI funded a contractor to evaluate global funding strategy for SCI. The report was used to develop a plan including funding priorities, sources, and potential projects for SCI over the next five years.

7. SCI FUNDS COUNTRY REPRESENTATIVES TO WORLD'S GREATEST HUNTING CONVENTION

SCI funded representatives from Cameroon, Kyrgyzia, Gabon, Congo, Tanzania, Zimbabwe, and Zambia to attend the SCI Convention in Las Vegas this year.

$ 30,000

Safari Club International - Conservation Activities

III. PROJECTS AND PROPOSALS IN 1994-95

(In Progress as of 1 Jan. 95)

SCI has initiated 11 projects and activities in the international conservation field by mid- SCI Fiscal Year. The intent is to complete or fund each of the projects. Projects and proposals are funded by donations, chapter contributions, and external funding. External funding sources are expected to be, but not limited to the African Elephant Conservation Fund, USAID, the Mongolian Government, Republic of Tanzania, World Wildlife Fund for Nature, Zimbabwe Trust, Zimbabwe Wildlife Department, and International Professional Hunters Association.

1. FUNDING OF INTERNATIONAL STUDENT

SCI has funded a wildlife student at the University of Dar es Salaam for a higher degree in wildlife management and administration. The student will return to become a greater asset to his Country's wildlife program. Tanzania was the first candidate for this SCI funded project.

$ 12,000

2. TANZANIA GAME SCOUT/QUOTA SETTING PROJECT

SCI developed a project to utilize Tanzanian game scouts to collect management information. This project was developed in cooperation with the Tanzania Department of Wildlife and the African Wildlife Foundation. The project is currently being implemented in Tanzania.

$124,000

3. ZIMBABWE COMMUNAL QUOTA SETTING PROJECT

The community based, sustainable use Zimbabwe CAMPFIRE Program currently has quotas for harvest of game set by the Zimbabwe Department of Wildlife. The goal of CAMPFIRE is to make communities self-sufficient and this includes empowering the communities to set their own quotas. A two year project in conjunction with Zimbabwe Trust, World Wildlife Fund for Nature, and the Department is underway with funding obtained by SCI.

$154,000

4. DEDICATED ARGALI FUND

SCI, in conjunction with Safari Outfitters, the Mongolian Government, the Professional Hunting Organization in Mongolia, and the US Fish and wildlife Service, promote conservation of the Mongolian argali. The initiation of the fund was a result of an $85,000 hunt for Altai argali and ibex auctioned at SCI in Las Vegas.

$ for Argali Conservation **$50,000**

5. SUPPORTED KYRGYZIA ARGALI CONSERVATION

SCI obtained a donated Marco Polo argali and ibex hunt from Kyrgyzia in cooperation with Greenfield of Russia, with 90% of the proceeds dedicated to argali conservation in Kyrgyzia.

$ for Argali Conservation **$ 40,000**

Safari Club International - Conservation Activities

6. FUNDING BACKGROUND RESEARCH ON MOZAMBIQUE

SCI has funded a Harvard University Graduate Student to analyze conservation needs and opportunities in Mozambique. The study will be completed in June, 1994.

Project Total **$ 1,000**

7. FUNDING BACKGROUND RESEARCH ON TANZANIA

SCI has funded a Harvard University Graduate Student to analyze conservation needs and opportunities for hunting in Cameroon. The study will be completed in June, 1995.

Project Total **$ 1,000**

8. REPLENISHING DEPLETED AREAS IN ZAMBIA

SCI has a commitment from an independent donor to help rehabilitate depleted Game Management Areas in Zambia. This project is in close cooperation with the Wildlife Department, other donors, NGO's and the Ministry. This is predicted to be a 4 year program involving several Zambia GMA's.

Project Total **$ 2,000,000**

8. FUNDING A CONSULTANCY TO DEVELOP HUNTING IN MALAWI

SCI has a commitment from the European Community to fund a consultancy to evaluate the feasibility and plan a tourist safari hunting industry in Malawi.

Project Total **$ 65,000**

9. ANALYZING BROWN BEAR HUNTING IN KAMCHATKA

SCI is sending Dr. Bill Morrill to Kamchatka to analyze the ongoing management and sustainable use of Brown Bears.

Project Total **$ 6,000**

10. SURVEYING THE URIAL

SCI along with CIC is fielding a joint Russian/American Team of biologists to evaluate the condition of the transcaspian urial.

Project Total **$ 2,000**

11. PRESENTATION AT THE BC GUIDES AND OUTFITTERS MEETING

SCI is sending a team to a meeting to be held 6 April in British Columbia to discuss brown bear hunting.

Project Total **$ 2,000**

Safari Club International - Conservation Activities

ADDITIONALLY, SCI IS INVOLVED IN PROJECTS IN:

Senegal - exploring community development project

CIC - exploring a joint conference on Tropical tourist hunting to be held in Paris in Fall of 1995.

Mozambique - verbal agreement on leopard management enhancement program.

Kazakstan - investigating spotlighting the Kazakstan argali as a case study.

South America - SCI has launched a jaguar initiative and is raising money for jaguar management in Venezuela.

Tajikistan - SCI is looking to break the current stalemate on Tajikistan argali imports.

Congo - working with Wildlife Conservation International to develop hunting programs for the Bongo and other forest species.

Probably most importantly, SCI is developing management programs for hunters, professional hunters and communities. This will result in cost-effective management. It will complete the circle consisting of hunters financially supporting conservation and also being a cost effective management solution

Doc. 8.46
Addendum

AMENDMENTS TO APPENDIX I AND II OF THE CONVENTION ENGLISH ONLY

A. PROPOSAL
Transfer from Appendix I to Appendix II of the Cheetah (Acinonyx jubatus) populations of Botswana, Malawi, Namibia, Zambia and Zimbabwe, subject to quotas on Appendix II.

B. PROPONENTS
Botswana, Malawi, Namibia, Zambia and Zimbabwe

C. SUPPORTING STATEMENT

4 - attachment

1. Taxonomy

11. Class Mammalia

12. Order Carnivora

13. Family Felidae

14. Species Acinonyx jubatus (Schreber, 1775)

15. Common Names
English : Cheetah
French : Guepard
German : Gepard
Portugese : Guepardo
Spanish : Guepardo, Chita

16. Code Numbers
CITES A-112-007.003.001
ISIS 5301412007003001001

2. Biological Data :

21. Distribution

Historical : Cheetah were once widely distributed in Africa and Asia, from the Cape of Good Hope to the Mediterranean, the Arabian Peninsula and Asia Minor, India and Pakistan to the southern states of the former Soviet Union (1)

Current : Asia : Cheetah are still found in the northern parts of the Arabian Peninsula (2), in Iraq, Iran and east of the Caspian Sea to Afganistan and Pakinstan. (3)

Northern Africa : Cheetah have been recorded from southeastern Algeria, on the borders of Algeria with Mali, in northwestern Niger and in Libya, although small in numbers. (1,2)

Sub-Saharan Africa : Cheetah are still found in small and isolated populations in the Sahel and Sudan areas, southwestern Mauritania to Tchad, Sudan, Ethiopia, Somalia and Uganda, Tanzania and Kenya (1,2)

Southern Africa : The cheetah is concantrated primarily in the west and southern countries of this region. The are widespread, but low in numbers in Zambia, excluding the Zambezi Valley and parts of the eastern province, while restricted to reserves in the central and

In Zimbabwe, cheetah occur widely, except in the the northeast ; in Botswana widely distributed, except in the settled areas of the east and found commonly in the central and northern parts as well as in the mountainous regions in the south of Namibia. (2,4,5,6)

22. Population (estimates and trends)

Estimation of cheetah numbers in the southern African region have always been extremely difficult, as reflected in the wide ranges quoted in the literature (1,5,6,11 & 12)
Only two intensive surveys of cheetah numbers have been attempted to date for Zimbabwe (4) and in Namibia (6). In Zimbabwe a questionnaire survey and personal interviews with landowners estimated the numbers to be 500, with subsequent estimates up to 1000. Results from a Nambian research project in 1985 where a number of animals were collared, homeranges calculated at 800 - 1200km and cheetah densities of 1 per 20 km - indicated estimates of 2000 - 3000 cheetah for that period.
Estimates for Botswana range from 1000 - 2500 cheetah, with Malawi and Zambian populations at approximately 1000. (5)

Trends : There appears to be a downward trend in cheetah numbers in all the proponent countries.
In Namibia, historical records (7) show cheetah to have been widespread throughout the country, but rare until the early 1970's. From about 1970 - 1982 there appears to have been a large increase in numbers, proportionately related to the large increases in wild game populations on farmland for the same period. In 1982 a widespread outbreak of Rabies caused a sharp decline in game populations which resulted in large numbers of cheetah killed on farmland due to stock depredation. (6,8,9,10,11 & 12).
The cheetah numbers appears to continue to decline on farmland where the cheetah is viewed as the major threat to livestock. Cheetah numbers in Zimbabwe are reported to be increasing, but with an increasing larger number of animals killed on farms in protection of livestock. (4,5).

23. Habitat (Trends)
Although studies from east Africa reported cheetah habitat to be open grass plains, these areas are avoided by cheetah in Namibia in preference to thicker bush savanna areas with additional shelter and cover (10).
The single most important factor of cheetah habitat in these areas is the fact that in Botswana, Namibia and Zimbabwe less than 10 - 15% of the estimated cheetah population occur within formally protected conservation areas. The bulk of the population are found on farmland (both commercial and communal) where the cheetah is one of the major predators of livestock. (4,5,6) These large tracts of inhabited land support the bulk of the wildlife of these countries and are free of the natural enemies of cheetah.
In all the proponent countries cheetah habitat is being threatened by human population growth rates and farming practices.

3. Trade Data :

31. National Utilization
Cheetah are killed in all the proponent countries in defence of livestock.

In Namibia the cheetah is viewed as single most important predator of livestock on both commercial and communal farms. Livestock losses to cheetah are reported to be between 10 - 15% for small stock (sheep and goats) and 3 - 5% for cattle farming (6). Cheetah are mainly caught in cage-traps and then shot. In Namibia farmers have to report cheetah shot in defence of livestock within 10 days. Table I presents data on the number of cheetah shot annually as predators of livestock in Namibia since 1980.

TABLE I : NATIONAL UTILIZATION OF CHEETAH IN NAMIBIA : 1980 - 1991

YEAR	SHOT IN PROTECTION OF LIVESTOCK	TROPHY HUNTED	LIVE EXPORT	TOTAL
1980	623	0	139	762
1981	669	0	58	727
1982	850	0	40	890
1983	721	12	124	857
1984	646	7	61	714
1985	537	21	113	671
1986	318	17	67	402
1987	317	12	87	416
1988	272	20	82	374
1989	271	32	67	370
1990	301	29	69	399
1991	145	40	51	236

Trophy hunting and export of live cheetah have been encouraged in Namibia in an attempt to curb the number of cheetah shot as predators of livestock, and to change the attitude of the farmers toward the cheetah from a: "kill at all cost" to one where cheetah would be tolerated and accepted. By providing some form of financial return for the losses caused, farmers are now encouraged to utilize the cheetah on a sustainable basis, rather than implement total eradication.

32. Legal International Trade :

Namibia has been the largest exporter of live cheetah and skins (13).
(See Table I for a summary of permits issued for the period 1980 - 1991). The export of live cheetah has only been permitted within the CITES requirements to internationally recognized Zoos and breeding centres - as the only alternative solution to those cheetah captured as predators or livestock on farmland.
Namibia only allows the sale of cheetah skins within the country for local personal use, while only skins obtained as trophies may be exported.

33. Illegal Trade :

Present levels of illegal trade in live cheetah and skins are minimal with a few single skins exported in luggage by tourists as souvenirs.

34. Potential Trade Threats :

341. Live Specimens
In all the prominent countries live specimens may well be exported under CITES regulations in accordance with Article III.

342. Parts and derivatives
Cheetah skins are bought for decorative purposes in private homes and are not in demand by any of the fur dealers for the manufacturing of any garments.

4. Protection Status :

41. National :

In Botswana, Namibia and Zambia the cheetah is a protected animal and may only be killed in defence of livestock which must be reported within ten days in Namibia. In Zimbabwe the cheetah is classified as "controlled game" and in Malawi "dangerous game" which may be shot in defence of livestock, in Malawi the burden of proving this lies at the accused.

42. International Status :

Cheetah is listed on Appendix I on CITES. Namibia entered CITES with a reservation on the cheetah on 18 November 1990.

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43. Additional Protection Status :

It is vitally important to state very clearly that no further national or international protection laws will or can have any effect on the actual conservation status of this species on farmland in southern Africa. It is impossible to control or prevent the killing of cheetah in defence of livestock on the vast tracts of farmland of especially Botswana, Namibia and Zimbabwe. Farmers experiencing livestock losses to cheetah are not interested in any illegal market, only in preventing direct financial loss of income.

All National Parks in southern Africa with high numbers of lion, hyaena and other large predators support low and limited numbers of cheetah.
One of the only solutions of conserving a healthy free roaming cheetah population on farmland - is to give the farmer the opportunity of receiving direct financial gain and compensation for losses incurred, encouraging him to having cheetah on his land.
This can only be established by allowing the trophy hunting and export of live specimens of those cheetah to be killed as livestock raiders on a strictly controlled quota system.

5. Information on similar species

The leopard (Panthera pardus) is also spotted, but differences in anatomy and patterns are obvious.
It is far easier to distinguish cheetah from the rest of the spotted cats than to distinguish any other member of that group.

6. Comments from countries of origin

Comments have not been obtained from all countries where cheetah occur.

7. Additional Remarks

The cheetah population in southern Africa, and especially in Botswana, Namibia, Zimbabwe and Botswana is not in danger of extinction.
The successful conservation of these populations, and the survival of cheetah on farmland cannot be assisted or improved by the Appendix I listing of this species since the survival of this species depends on the commercial and rural farmer to whom the cheetah poses a direct financial threat.
The transfer of the Cheetah in the proposing countries to Appendix II, subject to an export quota will, in accordance with Articles II and III enhance the survival of this species in the wild.

It is under the provisions of Conf. 7.14 that the proponents of this proposal seek the transfer of the cheetah populations in Botswana, Malawi, Namibia, Zambia and Zimbabwe to Appendix II, subject to annual export quotas. The paragraphs of this resolution are dealt with individually below :

a) As has been argued in this proposal, based on two surveys in Namibia and Zimbabwe, the controlled export of live animals and hunting trophies are prerequisites for the survival of this species in the wild on farmland;

b) The cheetah is non-migratory and can be adequately managed by each of the proponent countries;

c) The fact that the last, large, free-roaming cheetah populations left in the world are found on non-protected areas of intensively managed commercial and communal farmland, gives ample evidence of these countries' ability to manage these populations;

d) Controls on trade in the exporting countries are sufficiently rigorous to ensure that other species are not affected: it will futhermore also require the assistance of importing Parties to ensure that these same controls are maintained after the specimens have been exported ;

e) Cheetah skins exported will continue to be tagged in accordance with

f) The requirements of Management and Scientific Authorities defined in paragraphs 2(b) and 3 of Article IV of the Convention have been observed with all exports of live specimens and skins as data ;

g) Annual reports will continue to be submitted as required under paragraph 7 of Article VIII of the Convention.

h) Namibia, the only proponent with a reservation on cheetah, will withdraw this reservation within six months of receiving an annual export quota for live specimens and hunting trophies.

The following will apply with regard to the fourth part of this resolution :

a) The transfer is effective for a period of two intervals between regular meetings of the Conference of the Parties after which the species will be returned to Appendix I if a full proposal according to the Berne Criteria (or any other criteria which may replace them) has not been approved by the Parties ;

b) Quotas should be established, confirmed, or changed only by the Conference of Parties (the proposed quotas for the proponents of this proposal are included as Annex I)

c) This paragraph relating to crocodilians is not applicable ;

d) It is noted that, where Parties with approved quotas have no intention to seek an alteration of the quotas, no supporting statement is required at a meeting of the Conference of the Parties provided reporting requirement have been met ;

e) The provisions of this paragraph are addressed in Annex I ;

f) The reporting requirements on the information required by the Secretariat annually are noted.

8. References :

1. Meyers, N. 1975 The Cheetah (Acinonyx jubatus) in Africa. IUCN Monograph 4, Morges, Switzarland.

2. Smithers, R.H.N. 1983. The mammals of the southern African Subregion. Univ. of Pretoria, Pretoria, R.S.A.

3. Mowli, M. 1985. Cheetah in Iran. Cat News 3:7

4. Wilson, V. 1987. Distribution and Status of Cheetah in Zimbabwe. Unpublished report of the National Parks Advisory Board.

5. Stuart, C and V.Wilson. 1988. The Cats of Southern Africa. Chipangali Wildlife Trust, Bulawayo, Zimbabwe.

6. Morsbach, D. 1984, 1985, 1986 Die Gedrag Ekologie en Beweging van die Jagluiperd op plaasgebiede in SWA/Namibie. Annual Progress papers for the Directorate of Nature Conservation and Recreation Resorts.

ANNEX I

SUBMISSION OF QUOTAS FOR CHEETAH

pursuant to Resolution Conf. 7.14

STATE	QUOTA
Botswana	100
Malawi	10
Namibia	150
Zambia	50
Zimbabwe	50

NOTES: Conf. 7.14 part II(e) requires the following to be indicated in the supporting statement :

i) the proposed total annual wild harvest, including the offtake from cropping, trophy hunting and ranching ;

The above quotas include both sport hunting and live animals, caught as problem animals, to be exported. None of the proponents of this proposal intend to harvest cheetah for their skins. There will thus be no cropping or ranching.

ii) the proposed number and type of wild-collected specimens to be exported.

All animals on the quota will be wild-collected specimens. Parts and derivatives to be exported will include the skins and parts of skeletons.

iii) the proposed number and type of captive-born specimens.

It is not envisaged that any of the proponents are intending to breed cheetah in captivity for purposes of exporting either live specimens or parts and derivatives.

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
WASHINGTON, D.C. 20240

ADDRESS ONLY THE DIRECTOR
FISH AND WILDLIFE SERVICE

FL-I

Date: 25 March 93

Paul Mazzaglia
11112 Ashbrook Pl.
Pheonix, AZ 85039

Dear Sir:

Thank you for your recent request about requirements for a Federal Wildlife or Plant permit or registration.

(__) Application forms for _____ are enclosed. The application should be completed as fully as possible and submitted with a fee of ( ) $25 ( ) $100 to the Office of Management Authority, 4401 North Fairfax Drive, Room 432, Arlington, Virginia 22203.

(__) You have submitted an application for _____ but it cannot be evaluated until you:

(__) Provide the required fee of ( ) $25 ( ) $100.

(__) Sign and date the application.

(__) Respond to _____ of the application.

(__) Reply to the remarks section below.

Remarks:

Your application is being returned.

You requested a Convention on International Trade in Endangered Species (CITES) permit to import the sport-hunted trophy of a cheetah (Acinonyx jubat). Please note that the cheetah is protected as endangered under the Endangered Species Act (ESA). This office cannot allow the import of an endangered species taken as a sport hunted trophy unless our Office of Scientific Authority has determined that a viable management program exists for this species (currently, no such program exists for this species).

OVER.....OVER....OVER.....OVER....

(__) If we do not receive the information requested above within 45 days, your incomplete application will be abandoned and placed in our inactive files. You may refer to the abandoned application if you reapply later.

Please feel free to contact Biologist Christina J. Moody if you have any questions: U.S. Fish & Wildlife Service, Office of Management Authority, 4401 North Fairfax Drive, Room 432, Arlington, Virginia 22203 (1-800-358-2104).

IN YOUR REPLY PLEASE REFER TO PRT-_____.

In addition, in order for our office to consider your application, you must show how the taking of this trophy would serve to enhance the propagation of survival of the species, as well as addressing the conservation and ecological roles of the species as it occurs in the wild.

Enclosed is an Endangered Species application. If you wish to pursue this further, please complete and submit this application, along with the photostat copy of your check, to this office, to initiate processing. Please be aware that it is extremely difficult to secure a permit for this purpose. If you have questions, please contact me at the number below.

Doc. 9.51

CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES
OF WILD FAUNA AND FLORA

Ninth Meeting of the Conference of the Parties
Fort Lauderdale (United States of America), 7 to 18 November 1994

Interpretation and Implementation of the Convention

INTERPRETATION AND APPLICATION OF QUOTAS

This document has been prepared and submitted by Namibia.

Background

Quotas have become an important aspect of the regulation of trade in various species under CITES. They typify the kind of mechanism by which CITES Parties have co-operated as called for by UNEP Executive Director Dr Mostafa K. Tolba at the eighth meeting of the Conference of the Parties:

> CITES is under threat. ... There are complaints -- loud complaints -- from a number of developing countries that the rich are more interested in making the Third World into a natural history museum than they are in filling the bellies of its people.
>
> As I see it, the most important questions regarding CITES future are: ... CITES role in promoting sustainable development in the Third World. Do you see CITES principal role as preserving species, or in utilizing them for development?
>
> CITES does not provide a legal basis for turning the world into a zoo or into a museum. The philosophy that underlies it is one of conservation and utilization, rather than outright preservation.
>
> The original intent of CITES should be upheld. CITES should be used to guide States towards preserving what needs to be strictly preserved ... and more importantly towards the sustainable utilization of these resources.
>
> One way or another we have to find an economic incentive to preserve ... habitat.
>
> I am aware that there are large and powerful groups -- mainly in the rich, industrialized countries -- which consider that banning of trade ... is the solution.

Quotas have been employed by the Conference of the Parties in several ways. Two Appendix-I species, the leopard and the cheetah, have been subject to quotas set by the Conference to allow trade in hunting trophies and individual skins.

Several other Appendix-I species, mostly crocodilians, have been transferred to Appendix II under special criteria (Resolutions Conf. 5.21 and 7.14), including the establishment of quotas approved by the Parties.

Also, Resolution Conf. 8.9, on trade in wild-caught specimens of Appendix-II species, contains quota-setting as one of its principal mechanisms.

This paper, and the proposed draft resolution that it supports, are focused on the Appendix-I species, since those require the issuance of an import permit as well as an export permit, and this is where the varying application by Parties has given rise to serious problems.

It is clear from a study of the history of the employment of quotas by the Conference of the Parties that it is the intention of the Parties that the establishment of a quota should satisfy the requirements of Article III for findings by the importing country. This concept has been central to establishment of quotas. The failure of some Parties to implement the quotas in this fashion threatens to undermine the entire system and to interfere with important conservation programmes.

As to the importance of the allowance of limited, non-commercial trade in certain species to the conservation programmes for those species, the following discussion from the official record of the Committee I discussions on the listing of the markhor *Capra falconeri* makes it clear:

> The delegation of Pakistan, a range State, supported the proposal [by the U.K.] in principle, but was concerned that the transfer of the subspecies to Appendix I might cause problems as some populations were subject to limited sport hunting which provided income to local communities. However, they were reassured that Appendix-I listing would not prevent such hunting (Com. I 8.11).

LEOPARDS

The Parties have adopted Resolutions setting forth quotas since the fourth meeting of the Conference of the Parties in Gaborone, Botswana (Conf. 4.13, Conf. 5.13, Conf. 6.9, Conf. 7.7, Conf. 8.10). At the seventh meeting, the Parties made the quota system permanent, except for addition to or changes in the approved quota levels.

During the discussion of a proposal at the eighth meeting to transfer the leopard to Appendix II, the following observations were made by TRAFFIC International:

> Although trade in hunting trophies of Appendix-I species was already clearly allowed (Resolution Conf. 2.11), it was agreed during the fourth meeting of the Conference of the Parties to make a special provision facilitating non-commercial exports of *P. pardus* hunting trophies and skins for personal use. Resolution Conf. 4.13 recognized that *P. pardus* "was in no way endangered" in several range States, and established a quota system for non-commercial exports of this species. The quota system provided a clear framework for the licensing (by importing and exporting countries) of non-commercial *P. pardus* skin trade, by laying down the terms under which a transaction would be judged non-detrimental and not for commercial purposes. Since that time Appendix-I export quotas have been reviewed and agreed to by the Parties at each meeting of the Conference of the Parties (Resolutions Conf. 5.13, Conf. 6.9 and Conf. 7.7).

CHEETAHS

Namibia proposed both a transfer to Appendix II with quotas (proposal #9, pursuant to Resolution Conf. 7.14) as well as document Doc. 8.22, which contained a draft resolution suggesting quotas for this Appendix-I species. The proposal said: "the proponents submit ... the attached draft resolution to establish an Appendix-I export quota system for cheetah, which would permit the export of cheetah hunting trophies and skins, subject to similar restrictions first agreed to for the leopard." "Trophy hunting and export of live cheetah have been encouraged in Namibia as an attempt to curb farmers' attempts to eradicate cheetah from their land, and to change their attitude from one of 'kill at all costs' to one where cheetah would be tolerated and accepted." "Trophy hunting is a viable option, which is proving successful in Namibia."

The Proposed Draft Resolution and the CITES System

Quotas have become a mechanism of great importance in the CITES system. They recognize the need to allow the utilization of wild plants and animals, while maintaining the necessary limits on such use. They offer a co-operative mechanism for exporting and importing countries to use to assure that marking and permitting controls are effective. In a political sense, quotas have allowed the CITES Parties to resolve conflicts between those who feel the need to utilize wildlife both for human needs and for conservation benefits, and those who are concerned that such use will have detrimental effects on the survival of species.

There have been differences, however, in the way that Parties have chosen to deal with the various quota Resolutions as they apply to both Appendix-I and Appendix-II species. For example, some Parties have concluded that the establishment of a quota in a Resolution amounts to satisfaction of the finding required under Article III that the exportation and importation of a specimen within the appropriate quota will not be detrimental to the survival of the species. This is the majority view, and is reflected in The Evolution of CITES, written by Willem Wijnstekers, wherein he states that the establishment of the leopard quota "substitute[d] the role of the Scientific Authority".

Other Parties are confused and refuse to recognize the quotas. Refusal to recognize the quota is not co-operation in the spirit of the Convention and burdens everyone. This is having a negative effect on the ability of range States to conserve these species and has wasted the quota Resolutions of the Parties.

The proposed draft resolution (Annex) would confirm the majority practice of the Parties, and would encourage Parties not following this practice to adopt it. This emphasizes the importance of CITES as a forum for international co-operation in the conservation of species and biodiversity. It is elementary that important terms should be defined particularly in this instance where there is confusion that distracts from the purpose of the quota for which it was established.

There is sometimes an assumption that it is always good to prohibit trade in a species and it is always bad to encourage such trade. But that is neither what CITES says, nor is it accepted policy today. It contravenes the intended purpose of the establishment of Appendix-I trophy quotas. Resolution Conf. 8.3 recognized that there can be benefits from the trade of wildlife. This principle has also been confirmed by IUCN, which adopted a resolution on the sustainable use of wildlife at its 1994 General Assembly in Buenos Aires.

From this point of view, it can be just as much a violation of the Convention for a Party to close its borders to trade in a species as it can be for a Party to engage in trade contrary to the requirements of the Convention. This is especially true when the trade has been reviewed by the Parties and a quota has been agreed at a meeting of the Conference of the Parties. It is equally true when trade is taking place within the framework of a quota mechanism established by the Conference of the Parties.

Note from the Secretariat

The Secretariat recognizes the merits of this document and the value of the argumentation presented. It is however conscious that if the draft resolution is adopted, this would not prevent some Parties from implementing stricter domestic measures on the import of specimens of species to export quotas, in accordance with Article XIV, paragraph 1.

Doc. 9.51
Annex

DRAFT RESOLUTION OF THE CONFERENCE OF THE PARTIES

The Interpretation and Application of Quotas

RECALLING Resolution Conf. 6.7, adopted at the sixth meeting of the Conference of the Parties (Ottawa, 1987), calling on Parties to consult with range States prior to taking stricter domestic measures pursuant to Article XIV which may interfere with trade in wild animals and plants and Resolution Conf. 8.21, adopted at the eighth meeting of the Conference of the Parties (Kyoto, 1992), requiring consultation between proposing States and range States;

RECALLING Resolution Conf. 8.3, adopted at the eighth meeting of the Conference of the Parties (Kyoto, 1992), recognizing the benefits of the use of wildlife;

RECALLING in particular the Preamble to the Convention which states that peoples and States are and should be the best protectors of their own wild fauna and flora;

RECOGNIZING the supreme importance of co-operative and mutual action as called for at the United Nations Conference on the Environment and Development in 1992 at Rio de Janeiro and as embodied in the Convention on Biological Diversity;

AWARE that the Parties have set quotas for the export of specimens of the leopard, various crocodilians, and the cheetah;

AWARE that it is the understanding and practice of the majority of Parties that the establishment of quotas by the Parties satisfies the required finding that the export of a specimen will not be detrimental to the survival of the species and that the import of that specimen will not be for purposes detrimental to the survival of the species, provided that the export is within the limits set in the quota;

AWARE however that the failure of some Parties to adhere to this majority understanding has had negative consequences on the conservation of species by range States;

THE CONFERENCE OF THE PARTIES TO THE CONVENTION

AGREES that, whenever the Conference of the Parties has set specific export quotas or has established a mechanism for setting such quotas for a particular species, this action by the Parties satisfies the requirements of Article III, IV and V regarding the finding by a Scientific Authority that the export will not be detrimental to the survival of the species and that the purpose of the import will not be detrimental to the survival of the species, provided that the trade in specimens of the species is within the limits of the quota.

CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES OF WILD FAUNA AND FLORA

Ninth Meeting of the Conference of the Parties
Fort Lauderdale (United States of America), 7 to 18 November 1994

RESOLUTION OF THE CONFERENCE OF THE PARTIES

Conf. 9.21

The Interpretation and Application of Quotas for Species Included in Appendix I

RECALLING Resolution Conf. 6.7, adopted at the sixth meeting of the Conference of the Parties (Ottawa, 1987), calling on Parties to consult with range States prior to taking stricter domestic measures pursuant to Article XIV which may interfere with trade in wild animals and plants, and Resolution Conf. 8.21, adopted at the eighth meeting of the Conference of the Parties (Kyoto, 1992), requiring consultation between proposing States and range States;

RECALLING Resolution Conf. 8.3, adopted at the eighth meeting of the Conference of the Parties (Kyoto, 1992), recognizing the benefits of the use of wildlife;

RECALLING in particular the Preamble to the Convention which states that peoples and States are and should be the best protectors of their own wild fauna and flora;

RECALLING Resolution Conf. 4.6, adopted at the fourth meeting of the Conference of the Parties (Gaborone, 1983), which recommends that the text of any document submitted for consideration at a meeting of the Conference of the Parties be communicated to the Secretariat at least 150 days before the meeting;

RECOGNIZING the supreme importance of co-operative and mutual action as called for at the United Nations Conference on Environment and Development in 1992 at Rio de Janeiro and as embodied in the Convention on Biological Diversity;

AWARE that the Parties have set quotas for the export of specimens of the leopard, various crocodilians, and the cheetah;

AWARE that it is the understanding and practice of the majority of Parties that the establishment of quotas by the Parties satisfies the required findings that the export of a specimen will not be detrimental to the survival of the species and that the import of that specimen will not be for purposes detrimental to the survival of the species, provided that the export is within the limits set in the quota,

AWARE however that the failure of some Parties to adhere to this majority understanding has had negative consequences on the conservation of species by range States;

THE CONFERENCE OF THE PARTIES TO THE CONVENTION

AGREES

a) that a Party desiring a quota for a species included in Appendix I should submit to the Secretariat its proposal, with supporting information, at least 150 days before a meeting of the Conference of the Parties; and

b) that, whenever the Conference of the Parties has set an export quota for a particular species included in Appendix I, this action by the Parties satisfies the requirements of Article III regarding the findings by the appropriate Scientific Authorities that the export will not be detrimental to the survival of the species and that the purposes of the import will not be detrimental to the survival of the species, provided that:

   i) the quota is not exceeded, and

   ii) no new scientific or management data have emerged to indicate that the species population in the range State concerned can no longer sustain the agreed quota

CONSEIL INTERNATIONAL DE LA CHASSE
ET DE LA CONSERVATION DU GIBIER
(INTERNATIONAL COUNCIL FOR GAME
AND WILDLIFE CONSERVATION)

COMMISSION DU GIBIER TROPICAL
(TROPICAL GAME COMMISSION)

LE PRESIDENT

TO WHOM IT MAY CONCERN

Subject : Impact of the US Endangered Species legislation due to import restrictions of hunting trophies legally obtained abroad by American sportsmen

It is appropriate to recall on this occasion a number of important facts : American big game hunters make up approximately 50% of all hunting tourists worldwide and that harvesting of hunting trophies is negligible in quantity (a fraction of 1%) of any species.

The « trade » of legally-obtained hunting trophies has, since the very 2nd Conference of the Parties of CITES in 1979, been recognized (Res. Conf. 2.11) as a non-commercial activity to be authorized by the Parties. This Resolution was reinforced by COP 4 in 1983 (Res. Conf. 4.13), regarding particularly **leopard** trophies and reconfirmed by following COPs (Res. Conf 5.13, Conf. 6.9, Conf. 7.7, Conf. 8.10). Similarly, a hunting trophy quota were attributed by the Parties for other Appendix I species, such as the **cheetah**, as well as for the **Nile crocodile**.

The 9th Conference of the Parties which met in Fort Lauderdale, Florida, in November 1994, the Parties studied documents Doc. 9.50, 9.51 and Com. 9.21 by the Government of Namibia which insisted on the fact that arbitrary import ban of legally-obtained hunting trophies constituted in fact a violation of both the text and the spirit of the Convention. It was stressed that these import bans were usually imposed on the basis of sketchy scientific data and without the recognized procedure of consultation with the countries of origin.

The Conference, which was regrouping 117 State Parties and 7 non-Parties, adopted the proposals of Namibia which in fact requests the Scientific Authority of the importing country to merely check with the Scientific Authority of the country of origin that the trophy was obtained legally in that country. An amendment was introduced and adopted stating that the only exception to this rule could be made when scientific or management data existed, demonstrating that the decision of the country of origin should in fact be challenged.

It was stressed by exporting countries during the discussions in Fort Lauderdale that the unjustified interpretation of Article XIV of the Convention, which in particular has been repeatedly invoked by the US CITES Scientific Authority, had *« compromised the conservation programs of Range States »*.
This reality has been strongly highlighted by IUCN (The World Conservation Union), TRAFFIC and WWF in their January 1995 Report entitled : ***« Four years after the CITES ban: illegal killing of elephants, ivory trade and stockpiles »*** which *« concludes that the*

9, Quai Malaquais 75006 PARIS (FRANCE)
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international ivory trade ban has not halted the illegal offtake of elephants. The continued loss of elephants appears to be the result of an inability on the part of range states to protect them ». In fact, this report gives dramatic evidence of the effect of the ivory trade ban on anti-poaching budgets in the elephant's range states :

- *« since 1988, budgets for law enforcement activities in Zimbabwe's wildlife sector have declined by almost 90% in real terms ».*
- In **Tanzania**, *« for the protected areas included in our analysis, budgets had declined by 97% since the ban came into effect ... With the decline in available funding, illegal killing has begun to increase since 1992 ».*
- *« Zambia has experienced a 96% erosion in its budget for capital expenditure in the wildlife sector ».*

All of the above information confirm the two obvious facts that poaching can only be checked by anti-poaching efforts and that these efforts cost money which, in reality, can only be produced by wise use of the wildlife resources. International aid which had been promised to African elephant range states did not materialize in any significant way and, in any case, can never be considered by donors as an ongoing long term financing of recurrent law enforcement costs.

The value of wildlife and the contribution by sportsmen to conservation funding are indeed well known by the US Fish and Wildlife Service and by the International Association of Fish and Wildlife Agencies. It is all the more shocking to see that same US F&WS apply arbitrary import restrictions on trophies originating in developing countries who desperately need the income in order to carry out their brave campaigns to conserve wildlife.

CITES furthermore recognized at its meeting in Kyoto the contribution that trade can make towards conservation of endangered species.

It is for this reason that the International Council for Game and Wildlife Conservation (CIC) voted at its 42nd General Assembly, meeting in Monaco, April 4 to 7, 1995, the two attached Recommendations.

It is our sincerest wish that, in its current reform of the Endangered Species legislation, the United States will fully take into account the benefits of legal trophy hunting and trade in wildlife products towards the conservation of wild species and its habitats, thereby ensuring the two great goals identified by the World Summit in Rio (1992), which are the conservation of biodiversity in conjunction with sustainable development.

Bertrand des CLERS
Chairman

19/07/95

CONSEIL INTERNATIONAL DE LA CHASSE
ET DE LA CONSERVATION DU GIBIER
INTERNATIONAL COUNCIL FOR GAME
AND WILDLIFE CONSERVATION

42nd GENERAL ASSEMBLY OF THE C.I.C.
MONACO - APRIL 4th/7th, 1995

GT.GG/R1

RECOMMENDATION

INFORMED of the unanimous adoption by the more than 125 member CITES Treaty, during the recent Conference of the Parties in Fort Lauderdale, USA (November 1994) of a resolution recognizing formally the right of Range States to export the quotas of Appendix I species approved by the Conference,

RECALLING that this Resolution reaffirms the basic notion explicitly recognized in the preamble of the Convention that : « *peoples and States are and should be the best protectors of their own wild fauna and flora* »,

NOTING however that, since Article XIV, para. 1 of the Convention states that : « stricter domestic measures » may be taken by Parties, some Parties have been enacting national regulations which restrict wildlife imports according to their own domestic criteria, thereby causing severe prejudice to exporting range states,

RECALLING that past Conferences of the Parties have insisted on the necessity for importing states to consult with range states before suggesting or taking any restrictive trade measures, rather than dictating their own view,

UNDERLINING the fact that CITES is a Convention on International Trade and therefore must be in harmony with other international trade agreements,

THE INTERNATIONAL COUNCIL FOR GAME AND WILDLIFE CONSERVATION,
on proposal of the Tropical and Big Game Commissions,

URGES the Standing Committee of CITES to identify, within the framework of the general review of the effectiveness of the Treaty which it is carrying out, which countries apply such unilateral import trade restrictions under Article XIV, para. 1, thus denying Range States the sorely needed benefits for conservation which can derive from international trade of sustainably managed species, as recognized by the Conference of the Parties in Resolution 8.3 passed in Kyoto, 1992,

ASKS to IUCN's Director General to help voice this concern in the course of IUCN's advisory role to CITES and help convince importing States to abandon unilateral trade bans in violation of CITES Recommendations,

URGES FURTHER that this item be put on the agenda of the next meeting (10th COP) and that the interpretation of Article XIV, para. 1, be only utilized by Parties if it is in accordance with Article XIV, para. 2,

AWARE that the European Union has been applying for ten years a Regulation (Ref. 3626/82) for international trade in wild fauna which effectively curtails the import of some CITES Appendix II species by putting in place a procedure which submits them to Appendix I restrictions and to an eventual arbitrary import veto,

AWARE FURTHERMORE that the European Commission is in the process of redrafting this European Council Regulation,

ASKS the European Union to ensure that European regulations, meant to implement CITES, do not contravene Europe's general obligations on free trade, as specified by Article XIV, para. 2 of the Convention.

CONSEIL INTERNATIONAL DE LA CHASSE
ET DE LA CONSERVATION DU GIBIER
INTERNATIONAL COUNCIL FOR GAME AND WILDLIFE CONSERVATION

GT/R3

42nd GENERAL ASSEMBLY OF THE C.I.C.
MONACO - APRIL 4th/7th, 1995

RECOMMENDATION

REMINDING that, in some Southern African countries, over-abundant elephant populations must be culled in order to ensure the long-term conservation of National Parks and of their biodiversity,

RECOGNIZING however the sovereign right of some range states to continue to ban export of elephant products

RECALLING that, at their 7th Conference in 1989, a majority of States Parties to CITES decided to impose a generalized ban on international trade in all African elephant products, arguing that the closing of legitimate trade would automatically result in bringing illegal trade to a halt,

INFORMED of the findings of the World Conservation Union's African Elephant Specialist Group, published in January 1995 by IUCN, Traffic and WWF, which conclude that, after five years' ban, elephant poaching and illegal ivory trade continue as before, demonstrating the fallacy of the argument,

NOTING that, according to the above report, the predictable shortfall in revenue of Conservation Departments, resulting from the impossibility to sell government-owned elephant ivory and skins, has had the perverse effect to force important reductions in range States' anti-poaching budgets (by 90% in the case of Zimbabwe),

The International Council for Game and Wildlife Conservation,

at the suggestion of the Tropical Game Commission,

REITERATES the recommendation made by the last General Assembly of CIC meeting in Capetown in March 1994 to the CITES Parties, Secretariat and Standing Committee.

HIGHLIGHTS once again the critical importance of encouraging sustainable legal trade in wildlife products in order to pay for recurrent costs of anti-poaching and other law-enforcement and wildlife management activities in tropical countries,

RECOGNIZES the necessity to compensate local people for the cost of conserving natural habitats and the presence of wildlife on their land by letting them benefit from the trade in this products.

WELCOMES the offer made by the United Nations Environment Program to find ways to reauthorize controlled legal trade in African elephant products originating from range states where elephants are managed sustainably and where unworked elephant product inventories emanate from government warehouses.

STATEMENT OF ELIZABETH RIHOY, WASHINGTON DIRECTOR, AFRICA RESOURCES TRUST

AFRICA RESOURCES TRUST

Constituted as a welfare organization in Zimbabwe and a private voluntary organization in the U.S., the Africa Resources Trust (ART) is a non-governmental organization working in Africa in the field of development and environment. ART is dedicated to the promotion of human welfare (especially the alleviation of poverty in remote rural areas) through the sustainable use of natural resources, with a special focus on wildlife.

OVERVIEW OF THE ISSUES AFFECTING AFRICA'S ECOLOGICAL FUTURE

Africa is frequently portrayed by both the media and many in the international community as a 'basket case', where populations are expanding beyond the capacity of the resource base to sustain them, resources, both finite and renewable, are becoming exhausted; environmental degradation is an irreversible force, and species loss a common occurrence. What we hear less often from Africa are the success stories which address both human development and resource conservation needs. This paper shall draw upon one of these, the CAMPFIRE programme in Zimbabwe, to indicate possible options for a sustainable ecological future for Africa.

Not withstanding these success stories, the ecological challenge to many African nations is a serious one. World Bank projections indicate that by the year 2025 Africa's population will have doubled, reaching 1 billion. This will dramatically increase the pressure on the natural resource base and, unless viable solutions are found, will lead to further environmental degradation. To respond to these developments Africa is confronted with two key challenges if it is to provide a sustainable future for its growing population. First, it must develop its modern economy, involving both industrialization and urbanization, to absorb and employ its growing populations. Second, it must maintain and expand a viable rural economy with appropriate and productive forms of land use to both maintain its rural population and supply the urban areas. This paper will focus upon some of the responses to the second issue, seeking to demonstrate that the ecological future of Africa is intimately linked with the future development of its rural economy.

The rural economy has been subjected to pressures which have led to ecological and environmental degradation. Key amongst these is the increasingly intense competition for land, resulting in inappropriate, unsustainable forms of land use in some areas. This has led to a loss of productive land and a related loss of biodiversity. Much of Africa is unsuitable for intensive agricultural production—only 5 percent of Southern Africa is considered suitable—but the pressure for farming land has forced people into marginal lands. The result is severe land degradation which leaves people and the environment impoverished. Africa is unlikely to produce its own 'green evolution' in the near future and may instead need to pursue a more diversified path of natural resource management and agricultural production based upon the prevalent natural conditions and available resources.

Africa's current development paths have focused on intensifying the productivity of arable agriculture and livestock at the expense of exploring the productive potential of other existing resources. This has produced competition for land in which the potential benefits of much of the indigenous fauna and flora, particularly wildlife, are largely neglected. At the same time conservation efforts have sought to protect these resources against development, creating a seemingly insurmountable conflict between the goals of conservation and development. Many African countries are currently rediscovering the productive and economic potential of their indigenous resources in their national development programmes. It is in this context that we see the following example as providing possible options for reconciling conservation and development objectives, whilst addressing the challenges described above.

Traditional approaches to conservation in Africa have been based upon the Western conservation paradigm of protectionism. This essentially assumes that any interaction, particularly use, between humans and wildlife will have a negative conservation impact. It has sought to place wildlife within a vacuum, creating protected areas in which humans give way entirely to animals. These protected areas are often viewed with resentment as they are seen by rural people as under used and elitist. Outside the protected areas we see an increasing trend in which the converse situation occurs, with the wildlife and its habitat giving way entirely to people, often resulting in a loss of biodiversity and environmental degradation.

ALTERNATIVE OPTIONS—COMMUNITY BASED NATURAL RESOURCE MANAGEMENT

In the last 10 years there has been a growing recognition throughout Africa that this protectionist approach to wildlife conservation has been failing to address either the environmental or developmental needs of African nations. An alternative approach to conservation was required, which would address the realities of conservation and development in the African context. This approach, commonly known as community based natural resource management, is one in which responsibility for the management, use and benefit of natural resources, including wildlife, is returned to the local communities who live with it. This pragmatically acknowledges that benefits must accrue to the people who coexist with wildlife or more economically viable—but often environmentally degrading—land uses will be preferred.

Zimbabwe was one of the first countries to pioneer this approach through the introduction of the Communal Areas Management Programme For Indigenous Resources (CAMPFIRE) Programme. CAMPFIRE, and other similar programmes throughout Southern Africa, recognize the following key points as fundamental to the sustainable management of the natural resource base:

- Those who can best manage the wildlife resource are those people who live with it on a daily basis.
- The conservation of wild species and habitat will only be successful in the long run if it is able to generate revenue—if it is an economically competitive form of land use.
- To make wildlife economically competitive, Governments and conservation organizations need to begin to promote harvesting and using wild species as an option for wildlife conservation, rather than focusing exclusively on the old protectionist conservation paradigm which prevented such uses.
- If wildlife is to become an economically viable form of land use it will be dependent upon the availability of markets for wildlife products, these markets depend on policy and regulation both at the international level and within some consumer nations, such as the Endangered Species Act in the United States.

CAMPFIRE AND RELATED PROJECTS

It is our experience in Africa that conservation and development are both most effectively achieved when the goals of each contribute toward the other. CAMPFIRE and other similar initiatives are attempts to achieve this by ensuring that wildlife management becomes an accepted land use practice in areas that are marginal for other forms of land use.

Until recently all use of wildlife was illegal and referred to as poaching. Thus wildlife was of no legal use but was a very real pest which could destroy livelihoods overnight and presented a serious threat to human lives. Each year thousands of people in Zimbabwe lose their entire year's income, in the form of their crops, to marauding wild animals, often resulting in starvation. Hundreds of people are killed or maimed, usually by elephant, hippo or buffalo. In this context rural communities have been given strong incentives to get rid of wildlife, and to change the habitat that sustains it, as fast as possible in any way they can, legal or otherwise.

The advent of CAMPFIRE has reversed this situation by transforming wildlife, the liability, into wildlife the important economic asset. To succeed, CAMPFIRE has introduced legislation which effectively devolves ownership of wildlife to local communities. For the first time in recent history, wildlife management has the potential to become a competitive form of land use for the local communities who live with it. Wildlife is now viewed as a valuable resource, which should be managed, nurtured and utilized in the same manner in which a farmer previously managed his cattle. Wildlife has a comparative advantage to cattle on semi-arid rangelands as it makes wider and better use of the available vegetation and has many marketable uses in addition to meat production. Conservative estimates indicate that wildlife utilization produces returns of at least double those produced from livestock ranching on marginal lands, approximately 50 percent of the land area of Zimbabwe.

By linking conservation benefits with development objectives, habitat destruction and degradation has been reversed in Zimbabwe. CAMPFIRE started in 1989 when 2 districts received authority to manage their wildlife. The fact that by 1993, 22 districts had joined the programme, approximately one third of all the districts in the country, speaks for itself. A similar situation has occurred in the commercial farming sector. Today, more than 75 percent of the privately owned ranches in Zimbabwe have integrated wildlife management practices into their overall land use strategy and thus derive additional income from wildlife. In the SE Low veldt a consortium of 22 commercial farmers have recently pooled their land to form a wildlife conservancy of approximately 1 million acres, which Zimbabweans claim will be the largest privately owned wildlife area in the world. Today in Zimbabwe 50 percent of the

land dedicated to wildlife management is found in commercial and communal areas, whilst National Parks account for less than 30 percent. This amounts to more than one third of the area of Zimbabwe, a real contribution to biodiversity conservation. Key species have also benefited considerably as a result, with several species previously classified as endangered, such as the cheetah, Nile crocodile and elephant, seeing significant increases in their populations. Habitat loss has been the single biggest threat to wildlife conservation in Africa, by reversing this, many species have seen increases in their populations.

Under CAMPFIRE more than 250,000 people are now engaged in the practice of managing wildlife and reaping the benefits of using wild lands. These people live in remote areas that have historically been by passed by development initiatives and it is no exaggeration to say that they are some of the poorest people in the world. CAMPFIRE revenues amount to approximately U.S. $2,000,000 per year, an enormous figure when one considers that the average annual income per household in these areas is approximately U.S. $150. Communities have devised a number of ways to improve their livelihoods by taking advantage of the new found value of wildlife. The single biggest revenue generating activity is internationally marketed safari hunting, which generates over 90 percent of all cash income. But a variety of other uses exist, such as photographic safaris; live sales of wildlife; cropping to provide nutrition locally and sale of skins. The revenues from these efforts generally go directly to households, which decide how to use the proceeds. In the recent drought years this cash has often staved off some of the worst effects of crop failure, starvation; or communities may pool their resources to build a clinic or school; often the money will be communally invested in an income generating project, such as a grinding mill or shop.

But CAMPFIRE is far more than simply a wildlife management and income generating programme. It is a means by which communities can take back control over their own futures and reassert their self-reliance. It has returned to rural communities the right to make decisions concerning how they will use their natural resources. CAMPFIRE has become a forum for a wide range of issues, including representation, economic participation and the local governance of communal areas. In many ways it is an exercise in democracy. It will be tragic and ironic if these rights are undermined yet again by imperialism from the West, this time in the guise of environmental concerns, 'eco-imperialism'.

CAMPFIRE is by no means the only initiative of this type. Similar programmes are in operation in Botswana, Namibia, Malawi and Zambia. Tanzania, South Africa and Mozambique are exploring options for developing programmes, whilst several countries outside Southern Africa, such as Uganda, Cameroon and Kenya are implementing pilot projects.

INTERNATIONAL TRADE AND NATURAL RESOURCES

It may be interesting to note that the impact of the U.S. has played a significant role in the history of CAMPFIRE, both through positive support as well as potential threats to its economic liability. This paper will conclude by illustrating these impacts and the implications this may have for future U.S. policy toward Africa.

The first point refers to foreign aid provided by the U.S. through the U.S.AID. As is so often the case with innovative approaches, CAMPFIRE began as an idea with no resources, little political and financial support and many skeptics. As the programme began to evolve, it increasingly attracted the attention of both Government officials and international aid agencies. The institutional development and financial support provided by U.S.AID during the pilot stage of this programme proved to be a critical factor in demonstrating the viability of linking conservation and development objectives through the use of wild species.

The need for such foreign assistance will continue for a number of years as the programme seeks to develop the institutional and economic basis for community based management of natural resources across the country. The complexity of seeking to transform key elements of a rural economy's established production systems should not be underestimated. It requires a substantive investment in institutions, capacities and infrastructure, the costs of which cannot be borne by the communities alone.

However, in the long run trade, both domestic and international, will determine the future of the programme. CAMPFIRE depends upon obtaining an economic return from wild resources, which in turn requires open and functional markets for these products. To demonstrate the impact of international trade policies upon local initiatives of this kind, consider the following example.

Over the last few years there have been two instances where actions were almost taken by the Secretary of the Interior under the ESA legislation, which would have

effectively prohibited the import of ivory trophies. CAMPFIRE is highly dependent upon trophy hunting for generating cash revenues for its communities, as demonstrated by the following figures:

- Trophy hunting provides over 90 percent of the cash revenue.
- Elephant hunting alone provides 64 percent of the cash revenue
- The U.S. makes up over 60 percent of this market.

Hunters from the U.S. would have been prohibited from importing hunted trophies, this would have resulted in lost revenues to communities, loss of benefits would have reduced the incentives for conserving the resource; other land use options would have been selected resulting in environmental degradation in these marginal environments.

The threat implied by the ESA's regulations and the implications this has for the authority of Southern African governments in managing their own resources is taken extremely seriously by these governments. Diplomatic protests have been received by the Chairman of the Resource Committee from both the Washington based Ambassadors and the Directors of National Parks Departments in Botswana, Namibia, Malawi, and Zimbabwe, expressing their countries reservations with existing legislation and suggesting revisions to those sections of the Act which apply to foreign species. They indicated that in the eyes of these governments the determinations made under the Endangered Species Act regarding non–U.S. species:

- Were contrary to the international regulatory treaty for wild species, CITES;
- That they frustrated these Governments strategies for wildlife conservation; and
- That they infringe upon the sovereign right of Governments to take responsibility of managing their own wildlife

CONCLUDING REMARKS

The African environment is extremely fragile and inappropriate forms of land use rapidly lead to environmental degradation. National development programmes are promoting the use of indigenous flora and fauna as both an ecologically and economically viable land use in marginal areas. The long term viability of such programmes will depend upon demand and markets for their products. If markets are not available other forms of land use will be chosen, even though they may not be environmentally sustainable. If Governments and organizations wish to assist in ensuring that Africa's ecological future is not jeopardized they should create appropriate incentives for sustainable use of indigenous resources by providing access to markets which will generate an economic incentive to conserve wildlife and its habitat. In Africa natural resources are part and parcel of the communities life. They can provide subsistence needs and marketable products in raw or processed form. CAMPFIRE and similar approaches are not a panacea for all of Africa's environmental problems but they represent part of the solution. It is the local use of resources for local people's development that will ensure the long term ecological future of Africa.

STATEMENT OF THE AFRICA RESOURCES TRUST [1]

INTRODUCTION

The United States (U.S.) Endangered Species Act was designed to protect all manner of animal and plant species in the United States. The current Act, which was enacted in 1973, sought to strengthen the provisions of earlier Acts (viz. 1966 and 1969 Acts) by making provisions for the publication of the names of endangered species. The list was to include not only American wildlife species, but also wildlife threatened with extinction worldwide. The inclusion of foreign species in the Endangered Species Act (ESA) is discussed by Richard Littel in his book "Endangered and Other Protected Species: Federal Law and Regulation" (1992) in which he stipulates:

> "The United States cannot legislate a solution to a problem that is global in scope. The principal threat to species stems from the destruction of their habitats. While it is beyond our capacity to protect all habitats important to endangered species, Congress believed that this nation should still act to the extent of its ability to do so.

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[1] Africa Resources Trust (ART) is a Private Voluntary Organization dedicated to the alleviation of poverty in Africa, through sustainable use of wild species by rural communities. ART's main focus areas are (i) policy research and analysis; (ii) information outreach; (iii) education; and (iv) networking.

"Outside United States borders, the Endangered Species Act restricts prohibited conduct by persons subject to the jurisdiction of the United States. To enforce this rule, the U.S. government may conduct law enforcement investigations and research in foreign lands.

"The United States is also an important market for wildlife trade. Allowing unrestricted trade would increase the demand for endangered species and their products. It would give exploiters an incentive to violate the law. By restricting that trade, Congress decided, this country can add a significant weapon to the arsenal of conservation."

Whilst it is noble of the U.S. to take-up the initiative to ensure conservation of wildlife worldwide, the attempt for global conservation through ESA, it is difficult for one nation to effect a law that adequately addresses the diverse developmental needs of the different nations.

This paper states why the U.S. government should make amendments to the Act, with specific reference to the listing of foreign species. The paper gives a general outline of the role of wildlife in the development of the rural economy, particularly the SACIM countries, and this is followed by brief recommendations for the amendment of ESA.

THE ROLE OF WILDLIFE IN THE ECONOMIC DEVELOPMENT IN AFRICA

There is a growing tendency by many conservation advocates to promote a concept of Africa as an idyllic and sacrosanct wildlife sanctuary which is separated from the socioeconomic realities of the region. This elitist and condescending attitude lowers the credibility of African conservation efforts. Africa has become a battleground of the global conservation movement. At stake is whether Africans will manage their wildlife or whether the task will be usurped by a cartel of conservation organizations based in the U.S. and also in Europe. The implication is that Third World people do not possess the proper conservation ethics nor are they able to duplicate First World managerial efficiency. There is a strong international determination to preserve the wildlife in Africa. This determination is expressed in political pressure on governments to establish additional protected areas or to enforce bans on trade in endangered species. This self-righteous and culturally prejudiced view is responsible for increasing bitterness among the African nations and impedes the long-term welfare of the region's wildlife resources.

The SACIM countries comprise Malawi, Namibia, Botswana, and Zimbabwe. The aerial extent of these countries is approximately 1,915,000 km^2 supporting a human population of approximately 20.5 million, 70 percent who reside in the rural areas. Subsistence agriculture is the main economic activity. Per capita income averages U.S. $400 per annum. In many parts of these countries, commercial agriculture is not viable, due to the high incidence of drought. Wildlife earnings mainly through sport hunting and related activities bring in substantial amounts of income used for village/community development.

Prior to colonization the economies of African communities were highly interlinked with their natural resources and their culture. Consequently, the Africans found it imperative to practice natural resources management on a sustainable basis for their survival. Wildlife was harvested in accordance with customary laws. Taboos were an intrinsic part of life with punishments aimed at demeaning offenders. Breaking of laws led to alienation from the community; it did not carry the criminal element present in existing African laws adopted from colonial rule. The efficient use of land resources is fundamental to traditional African conservation. Holistic customs incorporated the principles now known as "wise" or "sustainable use".

The advent of colonization resulted in the development of various types of land markets, namely,

- State land;
- Communal areas (CAs) for Africans where tenure was (is) based on usufruct system;
- Commercial farming land inhabited by Europeans and these lands are on a freehold system.

It is in the State lands that national parks, safari areas, recreational parks, sanctuaries as well as gazetted forests (collectively known as the "Wildlife Estate") are found. Hence, wildlife management was dedicated to protecting wildlife and preserving protected areas. Wildlife had the status of "Kings's Game" and was brought under State regulation so that legal exploitation and conservation were the exclusive domain of the State. The indigenous communities suffered a double expropriation: they were forbidden to use indigenous wildlife resources and also progressively excluded from much of the productive land base. Increasingly, they were confined

to communal areas where human populations and agricultural pressure on the land reduced the economic potential of wildlife. Alienation of wildlife resources and reduced access to land changed the cultural perspectives of an earlier era when rural populations used wildlife resources on a sustainable basis. Except to be hunted illegally for meat, wildlife became a liability and nuisance.

A new and progressive wildlife philosophy has been developing in the SACIM countries. Central to this new philosophy is the Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) that gives control of wildlife management to local communities. CAMPFIRE gives communities the right to manage wildlife for their own benefit, thus providing an economic rationale to reinforce the scientific, aesthetic and moral justification for wildlife management. The reasoning was that local proprietorship of wildlife resources was likely to promote investment (of land, money and time) for their efficient and sustainable management.

Various CAMPFIRE initiatives are being implemented in the SACIM countries, the most advanced programme is in Zimbabwe. The achievements of CAMPFIRE programmes are a clear indication of sustainable management of wildlife resources. These are summarized as follows:

- local ownership of resources;
- democratisation of institutions;
- full participation of the local people in planning and all levels of decisionmaking,
- income earned from local resources is utilized for economic development, e.g. water development, feeder roads and bridges, clinics, schools, and income generating activities at the village level.

It should be noted that trade in wildlife products provides the economic viability of the CAMPFIRE. However, the ESA is based upon the assumption that trade in wildlife products will have a negative impact on wildlife conservation.

It is in cognizance of the above that the SACIM countries would like to see certain changes made in the ESA.

RECOMMENDATIONS FOR THE AMENDMENT OF ESA

The main issues that ART would wish to see addressed and the lines of approach to such amendments are the following:

(i) The ESA should be redrafted in such a manner that it is highly compatible with CITES. CITES is now the truly international convention that reflects views of all nations in as balanced a manner as possible, including USA and developing countries. It is therefore unnecessary to draw up extra restrictions, especially on the importation of foreign species and their byproducts into the U.S. through the ESA.

(ii) Furthermore, to ensure that there are no unfair and too restrictive clauses and regulations in the ESA, there must be compatibility as referred to in (i) between ESA and World Trade Organization (WTO).

(iii) The ESA should directly and indirectly provide local communities with incentives to conserve wildlife; these must basically be economic and financial so that a relationship is developed meaningfully between conservation, on the one hand, and poverty relief and development on the other.

(iv) The ESA must ensure that its amendments on foreign species fully reflect the views of foreign countries, especially governments, NGO's and local communities, so that these amendments will be progressive and effective in improving conservation status of foreign species. Experience has shown that bans imposed without adequate consultations referred to above can be highly ineffective.

SUGGESTIONS FOR THE IMPROVEMENT OF THE UNITED STATES ENDANGERED SPECIES ACT

submitted by

Botswana, Malawi, Namibia and Zimbabwe

An Issues Analysis (Fig. 1, page 7) summarizes the comments which are to follow.

1. INFLEXIBLE LINKAGE OF SPECIES STATUS AND PRESCRIBED ACTIONS

The ESA operates on a set of prescriptions which progressively reduce the possibilities of use (or, in the case of foreign species, trade with the US) as wildlife populations reach the critical levels "threatened" and "endangered". Usually, a total trade ban is the result. However, we have strong evidence to show that total trade bans can be highly counterproductive. Many species need protection but can thrive with controlled trade. Trade provides economic incentives that aid and finance wildlife conservation. Particularly in the regions where most wildlife lives, like South America, Asia and Africa, governments cannot enforce conservation without local support. A total ban may deprive local populations of any lawful source of income from their wildlife, whereas, in contrast, well-regulated trade can provide sizeable economic incentives to local populations thus encouraging conservation.

The inflexible prescriptive approach of the ESA conflicts with common-sense. In the southern African region we have learnt that the degree of endangerment of a species is a matter for note only: how to improve the status of that species is a totally separate issue. In the more and more frequent cases where the answer to the decline of a species is to increase its legal value to those on whom its survival directly depends (notably, in many contexts, landholders), the ESA actually works *against* conservation.

FIRST PREFERENCE

The basic assumption of the Act that the "threatened" or "endangered" status of a species should lead to mandatory abolition or restriction of its use needs to be reconsidered. The Act should be amended to allow flexibility so that even if a species is truly endangered and subsequently listed, a trade ban does not automatically result. When it can be demonstrated that trade may create incentives which will contribute to the recovery of the species, the answer may lie in enhancing the economic value of species rather than attempting to remove it.

2. THE LISTING OF FOREIGN SPECIES

In our view, it is questionable whether the government of any country should go so far as to assume the mantle of global conservator of species. No country possesses the all-encompassing expertise needed to classify the status of all foreign species correctly and, more importantly, to diagnose their conservation requirements. The rapid development of capacity and expertise in most developing countries has resulted in a situation where the majority of expert opinion on both species' status and appropriate methods for species conservation resides in the range states for that species.

The following are valid reasons for any country to control the import of specimens of foreign species ---

(a) where a country is called upon to initiate such actions as a Party to an international treaty;
(b) where a country is directly requested by another country to do so;
(c) for veterinary health considerations;
(d) where the import of live specimens of a species may pose a conservation threat to local species.

Beyond these reasons, it is more difficult for a nation which is not a range state for a species to justify the inclusion in its legislation of selective or prohibitive measures which override the intentions and spirit of the GATT treaty.

It is not necessary to list foreign species under the ESA. Combined with the Bass Act of 1926, the Lacey Act of 1900 prohibits interstate transportation of fish or wildlife taken in violation of national, state or foreign law. We contend, therefore, that armed with the Lacey Act, together with CITES, certain non-controversial requirements of the ESA and the Pelly Amendment to the Fisherman's Protective Act (under which the President has the discretion to embargo wildlife products from a nation whose practises diminish the effectiveness of CITES), the USA has more than adequate tools to influence the conservation of foreign species. The parts of the ESA to which we refer here are those parts that treat certain violations of CITES as violation of US domestic law. For example, no person subject to US jurisdiction may trade in any specimen contrary to the CITES Convention. If US domestic legislation were modified to accord still more closely to CITES, this would be more appropriate than the operation of what is essentially a parallel system in which there is a major divergence from CITES listings.

SECOND PREFERENCE

The most effective way to deal with foreign species in the ESA is to abandon the listing process and adopt a procedure that aligns the United States legislation with the Convention on International Trade in Endangered Species of Fauna and Flora. The very assumption that the United States can or should try to influence wildlife management in other sovereign countries is highly controversial and considered offensive in some circles.

3. REQUIREMENTS IF FOREIGN SPECIES ARE TO BE LISTED

(a) Criteria for Listing

For the purposes of the Act a species is considered "endangered" if it is in danger of extinction throughout all or a significant part of its range. While the status of a species is judged according to five factors, these do not constitute true criteria. Therefore the decision as to what constitutes "endangered", which is fundamental to the listing process, is highly arbitrary and often, we submit, capricious. This would appear to be the opinion of the House too. We note that in 1982 the House Committee stated its concern that the endangered species lists "harbor a number of improperly listed species" noting that some listings were made "for emotional reasons or based on improper biological data".

As with CITES, objective criteria are required to determine when a foreign species is "threatened" or "endangered" in terms of the Act.

(b) Economic factors influencing conservation of foreign species

In 1978 amendments were made that required the Secretary of Interior make economic assessments at the time of listing and, as far as foreign species are concerned, this would have gone a long way to solving some of the problems we face - especially if the analysis was made at the level of local communities. Unfortunately, in 1982 all economic considerations were removed from the Act.

Where foreign species are concerned, economic considerations should be reintroduced and cost/benefit analyses required in the listing process.

(c) The requirement to show enhancement or need to reduce populations

As a result of various court cases, when making exemptions it is now a requirement that the regulated taking is shown to enhance populations or that an offtake is necessary to relieve population pressures. This has proved a major obstacle with foreign species, especially when these are inappropriately listed. Enhancement is notoriously difficult to define and demonstrate. The ESA should adopt the lead of CITES which simply requires a demonstration of "non-detriment". The idea that sport hunting is only sustainable or desirable when a population has to be reduced is clearly incorrect and, if applied in southern Africa, will simply be a hindrance to the recovery of species.

The Act should be changed so that exemptions depend on demonstrating non-detriment (rather than enhancement) and exemptions for sport hunting should not be dependent on the need to reduce populations.

(d) Application of the Precautionary Principle

Under the ESA, the killing of endangered species is expressly forbidden but, for threatened species, the Secretary of Interior has considerable discretion to "issue such regulations as he deems necessary and advisable to provide for the conservation of species". In 1990, the Secretary decided to err on the side of protection and after codifying the protections for endangered species, issued a regulation that extends the same protections to most threatened species. Exemptions have to be sought to allow sport hunting trophies of threatened species, such as the African elephant, to be imported into the United States and to allow commerci imports when, for example, it is argued that Australian kangaroos or African crocodiles a inappropriately listed or when it is argued that, for these species, trade is a means to encourage conservation.

With foreign species there is a need to increase the distinction between endangered and threatened species. With threatened species the onus should be on the party that is recommending listing to demonstrate that sport hunting and commercial imports will be damaging to the species. Even if this is the case, split listing and very specific sanctions must be required.

(e) Creating disincentives by punishing where there is no intent

We consider it a further problem that the Act is administered with the belief that even an inadvertent importation of a designated species violates the Act's purpose. As a result, tourists are penalised when they unwittingly attempt to import into the USA items comprising parts or products of listed species. This has the effect of discouraging tourists from purchasing curios in developing countries even where these are clearly listed by the producer country as legal. Where conservation is based on the return that wildlife species can make to impoverished rural communities, as in much of southern Africa, this has marked negative conservation affects. Hunters have been similarly affected when trying to import species -- sometimes because they have been listed between the time of the start of the safari and the time of importation of the trophy. In the same vein, we realise that the ESA does not prohibit hunting world-wide. The prohibitions of Section 9 do not apply to foreign states. However, hunters risk penalties and forfeiture if they bring their trophies of endangered or threatened species (for which there is no exemption) back to the United States. Again, this works against sport hunting in general and negatively affects our conservation programmes, many of which are driven by the value imparted by trophy hunting.

Inadvertent violation of the Act with respect to foreign species should not result in penalty.

(f) Concerns about possible aid withdrawal

The Department of the Interior decided that federally funded projects overseas are not within the scope of the ESA's consultative procedures. The court of appeals disagreed and the Supreme Court reviewed the case. Only one Justice expressed a view on the merits of the case, with the majority ruling that the complaining parties lacked standing to litigate the issue. It is therefore still a moot point as to whether Federal Action under Section 7 is limited to action within the USA. It is therefore of major concern to four southern African nations that a court action could stop USAID funding to a natural resource management project (such as Zimbabwe's CAMPFIRE) in which elephants are hunted and culled if the elephant was reclassified as "endangered".

It should be made clear that Section 7 does not apply to foreign species.

THIRD PREFERENCE

If foreign species will continue to be listed under the Endangered Species Act, there are a number of improvements which could be made to enhance conservation in the affected range states.

4. INAPPROPRIATE LISTINGS DUE TO INADEQUATE CONSULTATION

It is common that foreign species are listed inappropriately because the US Fish and Wildlife Service has an inadequate consultation process with the range states, is unduly influenced by domestic constituencies which bear none of the costs of listings, and has no capacity to investigate by direct means the status of any population in a foreign country. Consultation is, in fact restricted to a wholly inadequate requirement that the Secretary must ***try to*** notify foreign governments and take into account any efforts they may be making to protect the species. This is reflected not only in listing, but also the formulation of regulations and guidelines. When the Nile crocodile was being considered for transfer from the endangered to threatened category, each range state received a short telex through the US Embassy in its territory. In many cases, this never even reached the appropriate government department.

FOURTH PREFERENCE

Where the listing of foreign species is a possibility, there is a need to strengthen the consultative process under the Act, and the process should be largely dependent on the acquiescence of the range states on whom the survival of the species depends.

AN ILLUSTRATION OF THE NEGATIVE EFFECTS OF THE UNITED STATES ENDANGERED SPECIES ACT ON THE CONSERVATION OF FOREIGN SPECIES

To illustrate some of the problems we have experienced with the ESA, the lack of distinction between "endangered" and "threatened" species listed under the ESA and its divergence from CITES, we will use the example of the Nile crocodile (*Crocodylus niloticus*).

In 1983 the Nile crocodile in Zimbabwe was downlisted from CITES Appendix I to Appendix II. Between 1985 and 1989 most other CITES Parties with significant populations followed suit. Today the populations of Botswana, Ethiopia, Kenya, Madagascar, Malawi, Mozambique, South Africa, Tanzania, Zimbabwe and Zambia are on Appendix II and CITES has had no record of significant illegal trade for over ten years. Despite this, and notwithstanding an official petition to change the species status under Section 553 (e) of title 5 United States Code, it took 10 years after the first downlisting to have the Nile crocodile downlisted to threatened from endangered under the ESA and even after listing as threatened, 2 years later products made of Nile crocodile skin *still* cannot enter the United States.

This is all the more worrying when it is appreciated that the whole continental recovery programme of the Nile crocodile is based on the economic value of the animal which is realised through international trade. The Crocodile Specialist Group of the IUCN's Species Survival Commission has clearly stated that in this case the US ESA has actively worked against effective conservation, as a cost/benefit analysis would have shown.

Fig. 1

ISSUES ANALYSIS

WILL THE UNITED STATES .....

1. .... consider an Act which totally separates the degree of endangerment of a species from the type of legal or management action which follows ?

   YES → **FIRST PREFERENCE**

   NO ↓

2. .... exclude foreign species from the Act ?

   YES → **SECOND PREFERENCE**

   NO ↓

3. .... if foreign species are to be included. —
   - (a) use objective criteria for listing species:
   - (b) take into account economic considerations influencing conservation:
   - (c) abandon the requirement that offtake must enhance the population:
   - (d) apply the Precautionary Principle appropriately:
   - (e) reconsider the present disincentives in the Act:
   - (f) remove the threat of aid withdrawal linked to the ESA.

   YES → **THIRD PREFERENCE**

   NO ↓

.... at the very least, consult with range states before making any listings ?

NO → *A LUTUA CONTINUA*

YES → FOURTH PREFERENCE

STATEMENT OF LEVY (RAMS) RAMMUTLA

My name is Levy (Rams) Rammutla, I am the Director of Marketing and Communications with the National Parks Board of South Africa. Additionally, I am the former Director of the Botphuthatswana National Parks Board. During my tenure as Bops Parks Director, I was intimately involved in the effects of the U.S. Endangered Species Act upon conservation and the sustained management of a national parkland in South Africa.

The United States Endangered Species Act is a small but significant portion of the debate around the political, social, economic and environmental resource relationships that exist between the "rich North" and the "poor South".

The ESA is a product of the so-called "No Go" (protection) philosophy on dealing with the issues of environmental degradation and natural resource depletion. This general approach is prevalent in the developed countries (rich North) of the world who have already experienced or are experiencing the immense social and economic costs of an accumulated environmental debt.

In contrast to this approach is the "wise use" (sustainable use) philosophy on dealing with these issues. The "wise use" approach is generally supported by the developing countries (poor south). It is the difference in these two approaches that creates an apparent conflict or the policies of one country having negative impact in terms of the success or policies of another.

In order to make nature and species conservation work in any society, the society as a whole has to place a value on it. That value often comes at a high cost. In a developing country with extreme poverty, low food security, high illiteracy, poor health services, high unemployment, etc. such as South Africa, other value concepts such as aesthetic, intrinsic, extrinsic existence, opportunity costs, long term sustainability, animal rights or other "esoteric" values do not enjoy a place of high priority in such as society. In this context, issues such as: where the next meal will be coming from: whether there is a roof overhead, and whether there will be an opportunity for a job tomorrow; carries far more weight. The country's policy with respect to nature and species conservation has to be placed within the context of societies priorities, needs, aspirations and hopes. For this reason the "wise use" approach is the favored alternative in developing countries.

In addition to this, nature and species conservation efforts in South Africa are viewed negatively. This negative perception is a legacy of the apartheid era, where the majority of people saw the nature conservation areas as elitist "whites only" areas which were created by forcibly removing the black inhabitants. Therefore, the conservation efforts are under extreme pressure to implement politics which demonstrate visible and tangible benefit to the public and in particular to communities which neighbor conservation protected areas.

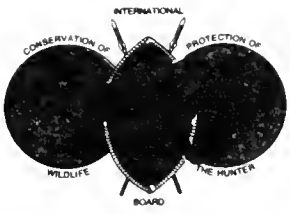
To specifically focus on the impact of the ESA. The restrictions imposed by the U.S. ESA is to limit the opportunity for South Africa and her people of all colors to use its endangered species resources wisely and sustainably. Such use, can achieve both the objective of conserving endangered species and stimulate economic growth in the usually economically deprive, regions surrounding protected areas.

Consider the implications of the following statements:

- But for the U.S. ESA, the United States would be a potentially rich market for the sustainable use of South Africa's wildlife;
- Internationally "endangered species" are common locally and in some cases have to be culled or reallocated to ensure local ecosystem integrity (viz. Rhino and elephant debate);
- Ecological culling or reallocation program operations to keep animal numbers regulated cost the "South African tax payer" money to achieve an international objective of low local priority;
- Local overabundance of endangered species present a major economic opportunity, unless international restrictions like the ESA prevent that use then they become a cost;
- Without commitment from society to conservation in South Africa, all conservation efforts will fail. Further enforcement or expanding the international endangered species lists and schedules as they are enforced by the U.S. will result in negative impacts on the species.
- Protected areas that produce values but are not valued by the adjacent local communities are under threat. First, those communities have a strong demand for land under a rapidly expanding population. Second, this non-value serves as a front-line encouragement for illegal trade in endangered species and their products.

- Without value, areas and expanding populations of animals become costs. Governments of developing countries do not have the resource to maintain adequate security and management operations required for strict protection.

The U.S. Congress has the challenge to develop policy which supports both the objective of endangered species protection and the objective of facilitating the development of viable and sustainable conservation efforts in developing countries. It cannot do either for endangered species under the existing ESA legislation. The ESA must be changed to reflect the international needs of rational, sustained, wise use of endangered species rather than punishing the species and the people that live with them.



Safari Club International

STATEMENT OF SAFARI CLUB INTERNATIONAL

TO THE
SUBCOMMITTEE ON DRINKING WATER, FISHERIES
AND WILDLIFE
OF THE
UNITED STATES SENATE COMMITTEE ON
ENVIRONMENT AND PUBLIC WORKS

REGARDING
THE IMPACT OF THE ENDANGERED SPECIES ACT
ON FOREIGN SPECIES OF WILDLIFE

Submitted by John J. Jackson, III
President of Safari Club International
July 20, 1995

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INTRODUCTION

I would like to thank the Subcommittee for this opportunity to express the views of Safari Club International (SCI) for the record of this hearing into the negative effect of the Endangered Species Act (ESA) on foreign species of wildlife.

OUR DIRECT EXPERIENCE

For more than twenty years I have personally visited many of the countries in Africa which are affected by the ESA, or to be more specific, by the way in which the ESA is currently administered. I have seen villages deep in the jungles of Ethiopia where it is unusual for men to live past 30 years and where $20 is more than most people see in a year. I have seen the terrible impacts of chronic poverty in the remote areas of Tanzania. I have also seen what it means to these people to have a foreigner in their midst who is willing to pay them salaries for assisting him on his quest for big game. To them, hunting is an ancient and honored practice and they understand it implicitly. The fact that a foreigner will engage in the hunt and at the same utilize the wildlife in the vicinity of their village in a way that brings them wealth is astounding and wonderful. When a hunt is successful, they celebrate with the hunter in the traditional manner and their joy is real and multifold.

I have also seen and heard from the mouths of the people living in these remote areas how the visits by foreign hunters and the money that is brought into their villages on a regular basis by the safari operators causes them to resist the poachers who prowl their hunting grounds. They talk enthusiastically about the importance of keeping the wildlife and of having the tourist hunters return year after year.

Unfortunately, I have also had one more personal experience. For more than five years, as chairman of some of the key committees of SCI, as trial counsel to SCI, and now as its president, I have seen our own government deny and frustrate the aims and goals of these people. Our government has acted in ignorance and with arrogance. I have had government administrators and attorneys tell me to my face that they had to take restrictive and negative actions because they were afraid of being sued by fanatic protectionist organizations if they approved the importation of hunting trophies. I have seen these same officials develop a secret set of "guidelines" which were unfounded, ill-conceived, unmeetable and unnecessary, and then impose these

guidelines to deny the benefits of what the Africans call "tourist safari hunting." I know these officials after having worked with them for so many years. They are not personally arrogant, but the actions they have taken or condoned without proper scientific information and without the courtesy of consulting with their professional peers in the countries they are affecting have been arrogant. I have attached to my statement letters from wildlife conservation officials of Ethiopia pleading with our government to authorize the importation of a few trophies a year because the income was critical to the continuation of their wildlife conservation programs. Our government flatly denied the permit applications. A short while later, the entire game program of Ethiopia came to a halt and with it, the operations of safari operators which were the only thing standing between the elephants of that country and the poachers.

I have also attached to my statement a permit application which I filed in December, 1992, as a test case to allow the importation of the horn of a de-horned and still-living black rhinoceros from Zimbabwe. To this day, our government has not yet acted on the permit. The result? For lack of funds, the Zimbabwean program to de-horn black rhinos to make them less attractive to poachers has failed and the population of black rhinos has plummeted to the edge of extinction. There are niggling arguments that the poachers might have killed the rhinos anyway, but the experiment never had a chance to work because our government was afraid that it would get sued by protectionist organizations -- organizations which spend their "charitable" dollars to criticize and sue but which do not put a penny into research or other conservation efforts.

I will detail, in narrative and in attachments, these and many other instances in which our government has consistently acted contrary to the spirit and the letter of the ESA. Despite the mandate of a Federal Court (in Connor v. Andrus, 453 F. Supp. 1037, (1978) W.D.Texas) the Department of the Interior does not take seriously its duty to conserve wildlife when the species occur outside the United States. Instead, they have allowed the welfare of this wildlife, and the welfare of the people who share their lands and lives with it, to become a political pawn in an awful game of "biopolitics." A former special assistant to the Director of the U.S. Fish and Wildlife Service saw this for himself and wrote about it in an article called Eco-Imperialism. I have attached a copy.

THE NATURE AND WORK OF SCI

SCI is an international conservation organization representing more than one million conservationists who are sportsmen and women. We are headquartered in Tucson, Arizona, where we operate a state-of-the-art wildlife and natural history museum. While the bulk of our membership is in the United States, where we have more than 145 chapters in 43 states, we also have chapters and members in more than 25 countries around the world.

We are a charitable organization and our major activities are education of the public about wildlife and about the role of sportsmen and women in conserving it, conservation, and protection of the right to hunt. Each of our chapters is required to raise funds and to carry out at least one conservation project every year. We have more than 500 ongoing conservation projects. These projects are usually done in cooperation with the wildlife officials of the state or country where the chapter is located. In addition, we carry out many conservation activities through our international staff. I have attached our most recent report which details how we spend or direct the spending of more than $2.5 million per year on conservation activities. Between our direct expenditures from our headquarters and the money spent on conservation by our members and our chapters, we contribute $27 million annually to wildlife and habitat conservation.

Conservation education is also a principle activity of SCI. I have already mentioned our museum, which hosts 126,000 school children and other visitors per year. In addition, we own and operate the American Wilderness Leadership School in the Bridger-Teton National Forest in Wyoming. Each year, we educate hundreds of elementary and secondary level teachers and resource people in wildlife ecology and conservation. In this way, tens of thousands of urban students gain a scientific understanding of the natural world and of wildlife conservation.

We also engage in community services. Through our Sportsmen Against Hunger program, we donate 155 tons of game meat annually to feed the poor and the homeless. Our chapters also operate "sensory safaris," in which sight-impaired youngsters and adults get their first, and often only "look" at wildlife. They are given guided tours in which they touch and sense wildlife mounts, while hearing about the kind of habitats in which these animals are found. We also provide school textbooks to rural communities which are part of Zimbabwe's CAMPFIRE program through our

Books for Africa program, run by the SCI Sables (an SCI constituent organization of sportswomen).

HOW DOES THE ESA AFFECT FOREIGN SPECIES?

The purpose of the Endangered Species Act is to "provide a means whereby the ecosystems upon which endangered species ... may be conserved, [and] to provide a program for the conservation of such endangered species ...". (ESA, §2(b))

Essentially, the ESA does this by listing species as endangered (or threatened), by prohibiting certain uses of listed species unless authorized by permit, by listing the critical habitats of listed species, by developing recovery plans for listed species, and by controlling federal actions and permits for use of critical habitats (and thereby controlling much private use of such lands and waters).

The Endangered Species Bulletin published by the U.S. Fish and Wildlife Service states that there were 338 mammals listed under the Endangered Species Act (ESA) as of March 1, 1995. Of those, **277, or 82%, are foreign species**. According to the U.S. Fish and Wildlife Service's Office of Endangered Species in Washington, **no recovery planning** is done under the ESA for foreign species, because they have no implementation authority in foreign countries. Thus, for 82% of all mammal species listed as endangered or threatened under the ESA, the provisions of the Act dealing with critical habitat, recovery planning and control of federal activities and permits for use of critical habitats has no effect at all. The only provision of the ESA that comes into play is the prohibition on importation of listed species.

In other words, the only impact that the ESA has on foreign species is the negative control of preventing importation. With a few exceptions, the application of that prohibition is complete except as permits may be issued for importation.

WHAT IS WRONG WITH THIS?

For more than 60 years the role of sportsmen as conservationists and the acceptance of wildlife use have been recognized and utilized in the U.S. as our major source of conservation funding. The excise taxes levied by the Pittman-Robertson/Dingell-

Johnson/Wallop-Breaux Acts have redistributed sportsmen's money to the states for conservation. The result has been an amazing turn-around in species' declines and the replenishment of animals such as the beaver, elk, wild turkey and white-tailed deer. But since the advent of endangered species protection in the late 1960's, the prevailing doctrine when it comes to foreign species was that "protection" of a species by completely prohibiting its use was always a good policy. Preventing access to markets, through such means as import prohibitions, has been a standard part of all schemes for wildlife conservation.

Recently, loud protests to this negative, protectionist ideology have been heard from Africa and Asia. The countries of those regions are faced with quickly-expanding human populations who must get some benefit from their land if they are to survive. The governments of these countries realized that their people will use their land to grow crops or graze cattle if their is no value to them in having wildlife. But if the wildlife proves to be valuable, it has been shown that people will maintain the habitats and protect the wildlife.

In many parts of Africa, you can find villagers in rural communities whose children were killed by marauding elephants. You can also hear tales of crops, which represented an entire year's income, destroyed overnight by wild animals or find he the spoor of leopards right inside village compounds. This is the reality that rural Africans live with every day. To them, wildlife is not some cute and cuddly thing that can be used for fundraising purposes by some protectionist group in New York or Washington. It is a harsh reality that can kill you and your children and destroy your livelihood.

Since the value of wildlife is often dependent on international transactions, bans on importation of wildlife can have a devastating effect on the conservation of the species. Thus, the very prohibitions imposed to protect wildlife may very well act in the opposite manner.

Continued United States insistence on the use of import bans resulted in the filing of **a formal diplomatic protest** in April, 1995, by four African nations (Namibia, Zimbabwe, Botswana and Malawi). A copy of that protest is attached. They said that in their countries strict prohibitions on use did not work for conservation. "In our countries," they said, "inhabitants of our rural communities and large mammals compete for the use of the land." They asked the United States to recognize that uses

of wildlife, such as restricted trophy hunting, were beneficial to the people and to the wildlife, and provided revenues for conservation.

THE ROLE OF TOURIST SAFARI HUNTING

The members of SCI represent an important economic resource to the countries of Africa. At the same time, we are a force for conservation of the great mammals of Africa and all of the lands that they inhabitat. The point is really very simple. Big game hunters, who come primarily from the United States, pay significant premiums for the privilege of hunting the many species to be found in Africa. This input of foreign exchange is earned at a very low cost in infrastructure development, because hunters are willing to take to the field without the extensive development of running water, electricity and resort hotel facilities. It is practical and effective in remote locations where nothing else is. It also converts species from varmints to game animals, which is a status that aids their restoration.

The ecological and biological costs of tourist safari hunting are also very low. It takes far less hunters than it does tourists to bring in the same amount of dollars, so the impact on the environment is much less. On the biological side, hunting is highly regulated, very few animals are taken, and the animals taken, being males, represent a genetic surplus. So it is quite possible to continue hunting of virtually all species without reducing the overall populations of animals. In fact in some cases, eliminating the aggressive old male animals from the population often stimulates the growth of populations by letting more fertile younger males participate in the breeding.

The result of tourist safari hunting is the provisions of significant economic gains without a reduction in the biological capital.

One of our concerns, in fact, is that the rationale of the U.S. court cases that have effectively denied the use of hunting as a conservation tool for species such as the wolf and the grizzly bear may be applied to foreign species as well. We are now seeing pressure on the Administration from protectionist organizations to apply those decisions to the importation of hunting trophies of threatened species. Thus the ESA has become an unintended tool for undoing the policies and doctrine of wildlife use that worked so well for conservation in the U.S., and this blight is about to be visited even more broadly on the conservation programs of foreign nations.

THERE IS A BETTER WAY

A few days ago, Secretary of the Interior Babbitt told this very panel that the states should be given a much larger role in deciding how to protect endangered species and preserve their habitats. He suggested that they be asked to review the scientific information used for proposing listings and should be given responsibility for developing species recovery plans and for issuing conservation permits. If this is appropriate for the states, is it not even more appropriate for foreign nations?

Unlike the states, the foreign nations receive no taxpayers dollars for endangered species conservation. There are no federally-funded programs for habitat protection or for recovery planning. So when the United States lists a foreign species under the ESA it may impose a burden, but it does nothing at all to provide the means to deal with that burden. It is the foreign nations that are expected to carry the burden. In that case, they should certainly have the primary role in determining how such species are best conserved.

In fact, such a policy was enunciated many years ago by the Assistant Secretary of the Interior for Fish, Wildlife and Parks, but has been ignored by the U.S. Fish and Wildlife Service. At Congressional oversight hearings in October, 1982, the Assistant Secretary stated the policy of the Department of the Interior in regard to species listed under both CITES and the Act. He said that when the species occurred outside of the United States, the Department would be guided by the actions and determinations of the Parties to CITES in regard to that species.

In the case of foreign nations and the species which reside there, it is much more likely that those nations will have the best available information in regard to those species. They also have the responsibility for conserving their own wildlife and for meeting the needs of their own people. Even in our own country we learned a long time ago that wildlife conservation is not simply a matter of oratory and filing a few lawsuits by extremist organizations. We developed the brilliant mechanism of the Pittman-Robertson/Dingell-Johnson/Wallop-Breaux funds to assure that wildlife conservation was paid for by the citizens who cared about it most (the sportsmen and women), and that the money went to the state fish and game agencies, where it could do the most

good. We operated on the principles of recognizing the benefits of wildlife to people and deriving the value from it for conservation long before that concept was called by the current term of "sustainable use."

We propose to you that Secretary Babbitt's principles be adopted for foreign species as well as for domestic species.

THE ROLE OF CITES

In the case of foreign species, there is an additional element that acts for the conservation of wildlife -- the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). CITES (pronounced "sight-eez") is a treaty that came into effect in 1975 and now has 128 nations party to it. It is the largest and most comprehensive wildlife conservation treaty in the world.

The United States was a major supporter of the development of CITES. Pursuant to the Endangered Species Conservation Act of 1969, the U.S. hosted the international conference in 1973 at which CITES was negotiated and signed. The current Endangered Species Act contains the provisions of law which implement CITES for the U.S.

The CITES parties meet approximately every two years and, by agreement, list species for which the regulation of international trade would assist in their conservation. Species which are currently in danger of extinction go on Appendix I and species which are threatened with endangerment go on Appendix II. There is also an Appendix III which allows any country to unilaterally list a species in its country for which international trade should be regulated for conservation purposes.

The basic trade regulation mechanisms of CITES are set forth clearly in the treaty. If a species is on Appendix I, it may not be traded for commercial purposes. Non-commercial shipments, such as personal effects, scientific specimens and hunting trophies, may be traded, but permits are required from both the exporting country and the importing country. Specific findings must be made before the permits are issued. These findings are to be made by conservation authorities designated for these purposes.

The exporting country must find that the shipment will not be to the detriment of the survival of the species. The importing country must find that the purpose to which the specimen will be put will not be detrimental to the survival of the species. If the specimens are live, then there are further requirements.

If a species is on Appendix II, then only an export permit is required. The same kind of "non-detriment" is to be made before the exporting country issues its permit. The importing counties do their part by assuring that listed species do not come into their countries without the proper export documents.

The CITES parties also discuss other issues regarding the implementation of the Convention. They are authorized to issue recommendations to improve the effectiveness of the Convention. Any country may take "stricter domestic measures" regarding trade in a listed species.

It is interesting to analyze the mammal species listed under the ESA in comparison to the listing of the same species under CITES. We reviewed the 87 foreign large mammal species listed under the ESA as either endangered or threatened. The listings match in less than half the cases (in other words, only 42 out of 87 times is a species on CITES Appendix I and Endangered under the ESA, or is on CITES Appendix II and Threatened under the ESA).

A species listed on Appendix I cannot be traded for commercial purposes, but some limited use can be allowed in the form of hunting trophies or other non-commercial uses, provided it is legal in the country of origin and the requisite CITES findings are made and permits issued. But if the same species is listed as Endangered, then the allowable uses are, at least under current U.S. policy, much more limited. So there is a serious consequence from this mis-match in listings.

In addition, the CITES countries, which have better access to information and which allow discussion of issues between the country in which the wildlife occurs and other countries, allow more uses of wildlife than the United States does. For example, after reviewing the scientific information about the conservation of cheetah, an Appendix I species, the CITES parties agreed that a limited amount of export of hunting trophies would generate funds that would benefit cheetah conservation. A record of their discussions is attached. The parties authorized an export quota from Namibia, Botswana and Zimbabwe.

But the cheetah is listed under the ESA as endangered. So despite the decision of the CITES parties, the U.S. refused to issue permits for cheetah trophy imports, arguing that the "enhancement" standard of Section 10 of the ESA had not been met. I have attached a copy of a letter in which they state this. I have also been told personally, by U.S. officials, that it was their policy that there is never a case in which the hunting of a wild (non-ranched) specimen of an endangered species could enhance the survival of the species. Thus the U.S. has set itself up as the ultimate authority on the conservation of cheetahs, in opposition to knowledge and proven practice in three African countries and in opposition to the collective judgment of the CITES parties.

The situation so angered the country of Namibia that it introduced a resolution at the last CITES meeting (in Fort Lauderdale last November) calling on all countries to honor export quotas set by CITES. The resolution was adopted unanimously. I have attached a copy of the proposal, which includes an eloquent statement by Namibia about how some countries (read "U.S.") were abusing their power to close their borders to imports that benefited conservation. I have also attached a copy of the final resolution.

The amazing thing is that despite this resolution, the U.S. is still not issuing cheetah import permits. I know, because I filed an application for one myself, as a test case.

OTHER EXAMPLES OF PROBLEMS

Presented below in outline form is a summary of examples of other specific problems that we at SCI are directly familiar with. We have voluminous documentation to back up each of these instances and would be glad to provide it for the Subcommittee.

- Nile crocodile: Species downlisted by CITES in many countries but the U.S. has been extremely delinquent in changing U.S. rules to allow importation.

- Black-faced Impala in Namibia: Species taken on game ranches where income from hunting provides incentives to maintain wildlife habitat, but because there are wild populations in Angola, the U.S. will not authorizing importation.

- Leopard in Mozambique: Despite CITES-approved quotas for exports, U.S.

will not allow importation.

- Elephant -- Ethiopia: U.S. refused to permit importation of hunting trophies, insisting on expensive and unnecessary studies and development of programs to meet ESA "enhancement"standard by this desperately poor country without providing (or assisting in acquiring) the funds to do the work.

- Elephant -- Cameroon: After initial approval of two permits, the U.S. has suspended the approval of imports pending the development of programs to show "enhancement" of the survival of the species.

- Elephant -- Tanzania: For several years the U.S. denied approval for importation of hunting trophies despite the importance of that program in providing funds for the country's wildlife conservation program.

- Argali -- China: The U.S. ignored a plea from the Chinese wildlife authorities to support a limited hunting program that was the main source of funding for provincial wildlife management; the argali was listed as endangered on a "precautionary" basis, importations ceased and the hunting program collapsed.

- Hunting in CIS: U.S. officials cabled to a former Soviet country suggesting that species were endangered and hunting programs be closed; the actions appeared to be ideologically motivated.

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THE ROLE OF THE ENDANGERED SPECIES ACT IN INTERNATIONAL CONSERVATION

The Endangered Species Act was passed by the U.S. Congress in 1973 to protect and ultimately enhance populations of scarce and sensitive life. It has had mixed results largely because of inadequate funding and the inability of recovery projects to be implemented by federal and state authorities. Nonetheless, it has been successful in bringing to safer levels several species of wildlife of which the american alligator and bald eagle are the most noteworthy examples.

In the interest of protecting living resources, many species were placed on endangered or threatened status without sufficient data to warrant such action. For example, several of the spotted cats and herbivores were not endangered. Efforts to remove them from endangered or threatened status have been expensive, time-consuming, and largely fruitless exercises.

Perhaps of most importance are problems of the Endangered Species Act in protecting wildlife in foreign countries. Aside from the problem of invasion of sovereignty and conservation affairs of range states, inadequate information and communication from range states have been available to the Scientific Authorities of the U.S. Government. Considerable resentment has built over this issue by range states and damage to conservation efforts has resulted.

Further, when a species is listed in a protected category thus preventing its utilization in recreational hunting or some other economic use, funds for licenses, safari fees, and other income

attendant to its use are lost. Loss of funds for conservation especially in developing nations, is serious because conservation efforts are fueled largely by tourism of which recreational hunting is a very important part. The effect has been a decline in conservation efforts in African and Asian nations.

Recommendations are as follows:

1. Review existing data on the status of species that are presently protected from use, especially those that are potentially economically important to conservation efforts;

2. Involve the range states much more closely than at present by providing funds and by sending U.S. scientists to work with them in developing information on the status of species;

3. Develop partnerships between conservation authorities of governments and private sectors that utilize or have scientific or conservation interests in biodiversity and species conservation; and

4. Develop true partnership arrangements between the U.S. Government and those nations with wildlife species that have been designated as scarce or sensitive.

The World Conservation Strategy embraces utilization as a factor in sustainable use of wildlife resources. Unless some attention is given to the needs of local peoples, and unless government authorities recognize the economic values of wildlife to conservation efforts in developing nations, wildlife resources will continue to be at risk.

Prepared by:

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Lawrence C. Means
Executive Director

July 10, 1995

Mr. John J. Jackson,III
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STATEMENT OF GAME COIN IN FAVOR OF REFORM OF THE FOREIGN ASPECTS OF THE ESA

Game Conservation International has supported wildlife conservation and protection of threatened species since its founding nearly 30 years ago. Our efforts include funding of nearly $1 million toward translocation of endangered African black rhinos, anti-poaching initiatives in Africa and North America and support of the Siberian Tiger Preserve research and protection programs in Russia.

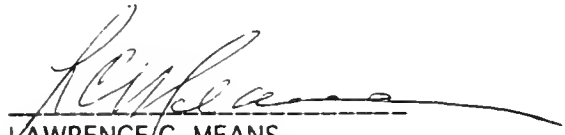
GAME COIN, (our acronym) holds special concerns which suggest the need for reform of the foreign aspects of the Endangered Species Act.

The ESA actually harms some foreign species, particularly those that would otherwise have a "game animal" status. The problem is inherent in the Act. It interferes or disrupts range nation programs, and yet it bestows no benefits. The benefits we are accustomed to with domestic species don't exist in the instance of foreign species. Domestic species benefit from critical habitat designation, cooperative arrangements, recovery programs and funding. These benefits don't exist in the case of foreign species. It is important to understand this to appreciate the fact that the Act is more detrimental than beneficial to foreign species. Instead of bestowing benefits, it actually obstructs and interferes with range nation programs, frequently over the objection of the range states, range nation authorities are helpless to protect themselves against low level agency personnel that administer these things in the U.S.A.

We should not interfere with range nation programs, particularly low volume, low risk, high revenue producing tourist hunting, without offering a viable and acceptable substitute. It is one consideration if the range nations ask for our help, which we are not able to give anyway. It is another when we show no regard for their programs and interfere with them.

We must reform this act to facilitate the importation of tourist hunting trophies when they are a component part of a range nation conservation program. ESA's severe restrictions on importation of trophies have cost range nations hundreds of millions of dollars, revenues which could support local villages, anti-poaching and game warden efforts.

Thank you for this opportunity to make a statement. and for reforming the Act to address these very important issues.



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Statement Regarding Needed Reform of Listing Criteria for Foreign Species Under the Endangered Species Act

The Endangered Species Act is designed to save rare species from further decline and extinction. However, in the case of foreign game species, exactly the opposite sometimes occurs. For many developing countries, tourist hunting is a conservation tool that the range nations are deprived of when the United States lists their species and interferes with trophy imports; yet many U.S. Fish and Wildlife Service officials and much of the general public mistakenly believe sport hunting is causing population declines and listing species against the wishes of host countries will benefit wildlife. Thus, the effect if the Act upon foreign species often is just the opposite of those intended. When applied to foreign species against range nations' wishes, the Act interferes with programs to conserve habitat and protect species because it deprives the nations of resources needed to manage wildlife and wildlife habitats.

Rectifying this problem should be considered as strengthening, not weakening, the Act. During much of the past 50 years I have lived, worked, traveled, photographed, hunted, and conducted or directed wildlife research in Africa and Asia. I have observed many instances in which our Endangered Species Act was reducing magnificent wild species to nuisances or simply meat in the eyes of local people, and local people -- not bureaucrats in a foreign country -- are the ones who will save or eradicate local wildlife.

Please allow me to expand on just two species with which I have first-hand experience -- the cheetah and argali (giant Asian wild sheep).

During 1973, I visited a large ranch in what is now Namibia. The rancher, Charley Pistorius, raised livestock but made most money from foreign big-game hunters. Cheetah were more numerous on that ranch than in any park or protected area I have visited in Africa.

Charley received a fixed daily fee for housing, feeding, and guiding hunters on his ranch. In addition, he received a trophy fee on reach game animal taken by hunters. The trophy fee on a Cheetah was then $800(U.S.), approximately 10 times that for Kudu and gemsbok--the principle trophy animals in the area. Charley tolerated extensive Cheetah predation on livestock and Kudu calves because Cheetah were "paying their way."

The Cheetah had recently been placed on endangered lists by several countries and skins could not be imported to the United States. Charley had hired a German trapper to capture as many Cheetah as he could for sale to zoos and pet dealers in countries that still allowed importation of live Cheetahs. Then, Charley planned to poison the rest. He was sad about this because he liked cheetahs; however, he said they were too destructive of his other cash crops for him to keep them without some renumeration. Most Namibian ranchers felt the same way, and the largest cheetah population in the world was reduced dramatically by "protection."

In an effort to alleviate the problem, CITES now allows export of a limited number of cheetah trophies from Namibia. However, the damage may already be irreparable. "Bottle-necking" (reducing the population to a low level) undoubtedly reduced genetic variability in the Namibian population. Low genetic variability is considered a problem for conservation of the entire world's cheetah population.

During the late 1980s and early 1990s, I worked with wildlife officials in Qinghai Province, China, in an attempt to save large game animals in the face of expanding numbers of people and livestock. The Chinese Government protects practically all wildlife on paper, but it is on paper only. Practically no money is available for enforcement, education, travel, or other management necessities.

One International Hunting Area was established, primarily for the hunting of blue sheep. Although hunters are not willing pay high prices for blue sheep, the hunting program encouraged local residents to reduce poaching by outsiders, consequently all species of wildlife increased. The hunting program contributed only three percent to the local economy , but local people liked it and, for the first time, saw some value in wildlife beyond meat.

The program also provided the first money available for wildlife officials to conduct censuses and find out what was actually happening "on the ground." The future of the blue sheep hunting to compensate local people for other land uses and provide managers with needed expenses is not great. Nepal has larger blue sheep, provides comparatively cheap hunts, and is a colorful country to visit. China can barely compete. However, argali demand high prices, and a tiny percentage of animals illegally killed for meat could provide enough money to institute a viable Wildlife Conservation program. The nearby province of Gansu had initiated an argali hunting program that was increasing protection of the Species and its habitat and providing wildlife officials with money for field studies.

The U.S. Fish and Wildlife Service placed the argali on the Endangered Species list and brought all progress to a halt.

China is expanding agriculture, manufacturing, and trade. Only enterprises that are profitable receive support. Consequently, most populations of argali probably will become extinct within 10-20 years.

Armchair conservations will say parks, photographic safaris, and eco-tourism are the answers. Although all of these options have merit in the long run, they will be of little help in the short -- while large game animals are declining, or becoming extinct in China.

Chinese parks generally are unguarded, or the guards participate in poaching. This may change, but not fast enough to save some populations or even the species.

Photo safaris and eco-tourism require infrastructure, such as good roads and lodgings, that are not available. Also, tourists generally do not like to visit areas that are not scenic, especially those at 12,000-16,000 foot elevations Lastly, hunters generally will pay 20-30 times more for a trip then will photographers or tourists. About 75 percent of hunters' money stays with local people and conservations agencies. Generally, less than five percent of tourists' money remains in the locale where game is found or with conversation agencies; most is spent on travel, accommodations and profit for the travel agency

After a life of trying to save wildlife, I am convinced the U.S. Fish and Wildlife Service should not ordinarily be allowed to list a foreign game animal as endangered if the host country does not concur. Further, foreign species presently on the U.S. Endangered Species list should be removed if the host country so desires.

Respectfully,

Bart O'Gara

Bart O'Gara

BO/kj

DALLAS SAFARI CLUB

July 14, 1995

STATEMENT OF THE DALLAS SAFARI CLUB IN FAVOR OF REFORM OF THE FOREIGN ASPECTS OF THE FEDERAL ENDANGERED SPECIES ACT

The Dallas Safari Club and its affiliates, have been long term supporters of wildlife conservation efforts for nearly 20 years. We have enjoyed a fine tradition of providing hundreds of thousands of dollars in grant funding to many worthwhile conservation efforts and outdoor educational programs. This organization has been a staunch supporter of the efforts made by State and Federal Officers in their endeavor to protect our natural resources, however, we are concerned over the frequent misapplication of the current Federal Endangered Species Act legislation. It is because of these concerns that we feel the need to reform the Federal Endangered Species Act, primarily the foreign aspects of such.

The United States should promote international applications of the "Sustainable Use" concept for wildlife management around the world. Many developing nations must be allowed to realize the value of the sustainable use of their wildlife as a renewable resource. We must make a commitment to allow the exporting countries to realize this value of their wildlife, as a preferred conservation mechanism.

Restricted quota based sport hunting not only provides an economic incentive for the local peoples directly involved, it also provides much needed income for the range state governments to finance ongoing conservation programs. These restricted tourist hunting quotas established by the Convention on International Trade in Endangered Species of Fauna and Flora, (CITES), of which our country is an active participant, should be accepted as the scientific standard in allowing importation. Certain species, for which there already exist CITES export quotas, are being denied import permits by our Fish & Wildlife Service under the current legislation. The grounds for denial usually arise from demands for often un-meetable studies and standards to be established by the individual requesting an importation permit prior to entry. Many of these species were legally harvested in countries where the species remains numerous and sport hunting quotas have been scientifically established through their CITES participation. Allowing the importing country to question the scientific authority over matters concerning the potential detriment of hunting and trophy export, severely limits the exporting country from developing sound wildlife management as a renewable resource, and only undermines any serious efforts to preserve the very species most at risk.

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The Dallas Safari Club respectfully requests that Congress amend the Federal Endangered Species Act to call for the legal importation of species for which quotas have been established by the CITES Conference of the Parties. These various quota mechanisms developed by the 124 member countries represent the most effective means of achieving conservation of the species in their home ranges.

We appreciate this opportunity to address this most important matter, and look forward to the refocusing of our policies, through proper and necessary reform of the Federal Endangered Species Act, into a more reasonable posture, which not only recognizes the authorities in which that control should rest, but also truly advances world-wide wildlife conservation efforts.

Dale S. Bilhartz
President - Dallas Safari Club

Houston
Safari
Club

**STATEMENT OF HOUSTON SAFARI CLUB
IN FAVOR OF REFORM OF THE FOREIGN ASPECTS
OF THE ESA**

The Endangered Species Act needs to be amended and incentives built into it. To this point in time, it has been a disincentive. It obstructs range nations' choice of conservation programs. Tourist hunting is a conservation measure of choice that generates revenue, gives the wildlife legitimate value in remote locations outside of protected areas, while it is low in risk and volume. Tourist hunting is a very important conservation tool that we deprive the range nations of when we list their species and interfere with trophy imports.

A few examples of many may demonstrate the problems. Agency personnel in the U.S. Fish and Wildlife Service shut down the importation of elephant trophies taken by tourist hunters in Tanzania that were taken on a CITES quota. The quota was only 50 elephants a year, out of a population of over 50,000 elephants. Nevertheless, the agency personnel stopped the importation of those trophies. Those hunts were generating approximately $60,000.00 ($60,000 X 50). In the two years it was closed, i.e., trophy imports were not allowed, the country lost $6 million dollars, 1990 and 1991. Countries with very stable elephant populations, like the Republic of South Africa and Namibia, suffered identical losses at the the same time.

Nile crocodile in the African countries have been downlisted on CITES. There has been a quota set, but the USF&WS has taken years to permit simple trophy imports.

The cheetah is another example. The cheetah has never been thought to be endangered in Namibia, and at the 8th conference of the parties of CITES, the world conservation community agreed upon a quota for the cheetah, because it would give it regulated value. Everyone was in agreement that thousands of cheetah had been shot on private land because it was a varmint, and that it would be much better served to be treated as a game animal and given value as such, much like the leopard had been done a decade before. That effort has been frustrated because the USF&WS has not permitted the importation of a single cheetah in three and one-half years.

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Another example is the leopard. Leopards were shot as vermin until the sport hunting community was able to persuade (thru a law suit) the U.S. authorities to downlist it to "threatened" to allow the importation of trophies, and now it has come back, perhaps as many as a million in Africa. A leopard is much more valuable as a conservation tool than might be understood. It is more than a $2,500 license. It is a minimum of fourteen days, and each hair has to be paid for, which can be $10,000-15,000 on animals that would otherwise be surplus. It is a very important backbone, or core, species, to the safari industry. It is one of the "Big Five". It has never been threatened by tourist hunting, and no one has ever represented that it was.

Unfortunately, the USFWS, despite years of effort by the hunting community, still will not allow the importation of leopards from Mozambique, although leopards are within the CITES quota created by the world conservation community. Mozambique, as a consequence, cannot be competitive with surrounding countries. That is, it can't have a safari industry, and all the benefits that go with a safari industry. Tourist safari hunting is a special, exceptional category of sustainable use. It is a fundamental tool of these range nations and there is little else available to replace it. We must stop interfering with the use of fundamental basic conservation tools.

These are just a few examples of why the Endangered Species Act has caused range nations tens of millions of dollars in loss of revenue as well as burdened them with additional costs.

The Houston Safari Club is an independent organization of sportsmen who since its inception in 1972 has been involved in the conservation of wildlife and the protection of hunters' rights. More than a million dollars has been funded by the Houston Safari Club on projects worldwide. We are thankful for this opportunity to express our views and remain at your service if you desire more information.

For the Organization

Ray Bailey, President

THE ESA AND AFRICAN RHINO CONSERVATION - A SOUTH AFRICAN PERSPECTIVE

WRITTEN STATEMENT FOR US SENATE HEARING ON ESA REFORM

DR MARTIN BROOKS (*Head Scientific Services, Natal Parks Board, KwaZulu-Natal, South Africa , [Also Chair IUCN SSC African Rhino Specialist Group, Chair Rhino Management Group]*)

INTRODUCTION

The concern shown by the USA in the conservation of threatened and endangered species in other countries is appreciated throughout the world. However, the United State's Endangered Species Act (ESA) as it currently stands is controversial with regard to foreign species.

The crux of the debate concerning the application of the ESA to foreign species is one of philosophy...

- Should one adopt a strategy like the current ESA that largely seeks to criminalise and severely restrict or prohibit trade in rare species?
- Alternatively, should one's focus be on providing incentives for the conservation of biodiversity and maintenance of habitat in range states; whilst promoting measures to increase self-sufficiency in funding conservation ?
- Should one pursue conservation or preservationist policies ?
- To what extent should the ESA promote policies that take into account human needs in developing countries ?
- Is commercialisation and sustainable use of wildlife necessarily a bad thing when a species is classified as threatened or endangered?
- Does the ESA currently make a significant contribution to conservation of rare foreign species such as rhinos? Alternatively, could the ESA even be prejudicial to successful conservation in foreign range states?

The addition of foreign species to the ESA took place at a time when there was no adequate international wildlife trade legislation. With the subsequent development and growth of CITES to become a major international treaty with 108 member countries. .

- Is the application of the ESA to foreign species now largely redundant, seeking to duplicate much of what is already covered by CITES?

CHOICE OF RHINOS AS CASE STUDY SPECIES

Given that the ESA seeks to improve the status and long term prospects for endangered and threatened species it is worth examining the South African case histories of two rare flagship species - the black and white rhino.

- What lessons can be learnt from South Africa's experience with these species ?
- What sorts of conservation policies are going to succeed in future ?
- The application of trade bans in foreign species listed as endangered or threatened under the ESA is based on the Western protectionist view that commercialisation and sustainable use of rare and endangered species is detrimental to their conservation. Do the rhino case histories support or refute this argument?

This submission therefore examines how the ESA relates to the conservation of rare and endangered foreign species, using white and black rhinos in South Africa as examples.

As the country holding 78% of Africa's wild rhino, and with a demonstrably successful track record in rhino conservation; South Africa has earned the right to express its opinion on what is best for successful rhino conservation.

SUMMARY

This paper discusses how live trade and sport hunting of white rhino has opened up new habitat for these animals in both state and privately run parks. This has contributed to the increase in their countrywide numbers from 1800 in 1968 to over 6370 today.

Black rhino were commercialised in 1989, and five private populations now exist in South Africa. Although to date, no hunting of black rhino has been officially sanctioned, the hunting of the occasional individually known post-breeding geriatric male black rhino is being seriously considered in some quarters.

This commercialisation and sustainable use of rhinos in South Africa (through live sales and limited sport hunting) has contributed significantly to the success of rhino conservation. It has achieved this by 1) generating additional revenue which has been ploughed back into conservation as well as 2) providing economic incentives for the private sector to look after and breed rhino. The country has also benefited from the influx of foreign exchange and the additional jobs created.

The rhino case histories suggest that the present blanket application of the ESA trade restrictions on listed endangered foreign species can limit the options available to range states to develop

appropriate successful conservation strategies. In particular, listing of a foreign species may limit the ability of range states to generate their own funds for conservation programs. This is contrary to CITES calls for range states to adopt measures to increase self-sufficiency.

Suggestions are made on how the ESA could be improved when dealing with rare foreign species...

- The ESA provides clear benefits (eg funding and provision of habitat) for listed US species; but provides no such benefits for listed foreign species. If foreign species are to be listed under the ESA, then provision should be made for financial support of necessary field conservation programmes.

- It appears there should be more consultation with range states before any foreign species is listed. Range States in most cases have the best idea of what conservation strategies will be most appropriate for their species, and thus have the biggest chance of success. For example, the blanket application of a trade ban on the importation of legal CITES approved hunting trophies from ESA listed endangered species in developing countries may be counter productive.

- There is a concern that application of the ESA to rare foreign species may foreclose some options that could potentially contribute to their conservation. For example the more progressive approach of sustainably using and commercialising South African rhinos has benefitted their conservation as well as the people of the country.

- For conservation to succeed in the longer term in developing countries it must obtain the support of the people. In listing foreign species under the ESA it is imperative that such actions will 1) not alienate and disadvantage local people or 2) remove or reduce the economic incentive for the private sector to conserve the species.

To this end, more support should be forthcoming for controlled sustainable use and commercialisation of even rare species provided it can be demonstrated that this will not be to the detriment of the species.

This paper presents the views of the Natal Parks Board. However, it would be fair to say that the opinions expressed here would find agreement amongst most, if not all, the other major state conservation bodies in South Africa, as well as those individuals and organisations in the private sector who conserve and manage populations of rhino.

THE "SAVING" FROM EXTINCTION OF THE SOUTHERN WHITE RHINO

The southern white rhinoceros (*Ceratotherium simum simum*) is one of the very few large mammals which has recovered from the brink of extinction to increase greatly in both number and distribution.

By 1895, only one population of an estimated 20-50 animals remained in the south of what is today Hluhluwe-Umfolozi

Park in KwaZulu-Natal, South Africa.

With good protection, numbers in the park built up to the level where concerns were expressed about possible "overgrazing" by the burgeoning numbers of white rhino. The timely development of immobilisation and translocation techniques allowed the Natal Parks Board to move large numbers of white rhino to many other Parks and private Game Reserves/Ranches (both inside and outside South Africa), as well as to Zoos and Safari Parks around the world.

Over the period 1962-1994, the Natal Parks Board alone moved 3,629 white rhino to new homes. Other conservation agencies and vets in South Africa, Namibia, Zimbabwe and Kenya have also developed the capability to successfully move animals.

A century on, numbers of southern white rhino have increased from the one small founder population in Hluhluwe-Umfolozi Park to an estimated 6,750 in the wild spread throughout 184+ populations in 8 countries; with an additional 630 odd in Safari Parks and Zoos around the world.

Currently 94.4% of the southern white rhinos in the wild still occur in South Africa; with an estimated 1,250 of those on private land. Zimbabwe, Namibia and Kenya account for the bulk of the remainder.

This "saving" of the southern white rhino was recognised by the international community at the recent CITES COP9 as one of the world's great conservation success stories.

SUCCESSFUL CONSERVATION OF THE ENDANGERED BLACK RHINO IN SOUTH AFRICA

Despite bans in the international trade in rhino horn, the black rhino (*Diceros bicornis*) in Africa has suffered a catastrophic decline in numbers. Since 1970 numbers in the wild have fallen by 98% from 65,000 to only 2,550. Despite this overall decline in numbers, black rhino in South Africa, have like the white rhino, increased both in number and distribution. From only about 110 in two populations in 1933, numbers of black rhino in South Africa are currently approaching 1,000 in 22 populations; five of which occur on private land. This year at least another one new private and one new state population will be established.

Interestingly, the same three countries, Namibia, Zimbabwe & Kenya, account for the bulk of the balance of world's black rhino.

SOUTH AFRICA'S RHINO CONSERVATION SUCCESS OBTAINED AT A PRICE

One key reason behind South Africa's success (and indeed the success in other parks in Africa) is that the majority of remaining rhinos occur in smaller, fenced, well protected and intensively managed sanctuaries.

Sadly, rhinos have all but been poached out, or removed from, the vast unfenced areas of bush where they once roamed in large numbers - but where it was not possible to deploy sufficient manpower to limit poaching (eg. Luangwa Valley in

Zambia, the Selous Game Reserve in Tanzania, the Zambesi valley in Zimbabwe/Zambia, Chobe/Moremi in Botswana, and Tsavo N.P. in Kenya).

Successful rhino conservation is not cheap. It has been estimated that to successfully conserve and manage rhinos in South African sanctuaries can cost as much as $1,000 to $1,200 per square kilometre per year.

The financial cost of the intensive management and protection responsible for South Africa's conservation success has been great; and has almost entirely been provided from internal sources within South Africa without support from external donors. In 1994 the total budget from the state to South African public conservation departments looking after rhino was approximately R340 million rand (equiv. $95 million). Private sector rhino conservation has been self funded.

As was mentioned at CITES COP 9, provisional results from an international study of the cost:benefits of different approaches to rhino conservation indicate that the size of in-situ conservation budgets has the biggest positive influence on likely success. South Africa's proud record with rhinos is not unrelated to its high expenditure on conservation.

A major problem currently facing not only South Africa, but also many other rhino range states, is that state conservation departments have for a number of years experienced budgetary cuts in real terms as government grants have failed to keep pace with inflation. In some cases grants have even been cut. Funding levels for state conservation departments in South Africa are now reaching critical levels. Thus it is becoming increasingly difficult for African conservation bodies to maintain the levels of spending necessary for success. Short falls are expected in some areas in future.

Although the black rhino is listed as endangered under the ESA, no funds are currently forthcoming under the act to contribute to supporting protection of the species in-situ. Despite world wide bans in illegal horn trade, rhino horn still fetches high prices which stimulates demand and creates poaching pressure. Thus it is essential that additional funds are found to maintain adequate security for in-situ populations.

To date adequate levels of alternative support from external donors has not materialised to cover shortfalls in rhino conservation spending in range states. Even if such support if were to become available, it would be unlikely to be available on a sustainable basis.

The new US Rhinoceros Conservation Act is very positive, although unfortunately it appears that available funding will be very much lower than the $10 million per annum envisaged earlier.

Seen against this background **CITES COP 9 recognised that it is critical for rhino range states like South Africa to develop innovative means for self-generation of additional income to cover any current and future shortfalls in conservation funding.** The CITES COP 9 resolution on the *Conservation of Rhinoceros in Asia and Africa* RECOMMENDS *that all range states develop recovery plans for the rhinoceros populations which inter-alia; a) are appropriate for the situation in their country; b) will not adversely affect rhino conservation in other range states; c) include provision for the reinvestment of*

revenues derived from the use of rhinoceros that is consistent with the (CITES) convention, in order to offset the high costs of their conservation; and d) aim towards a long term goal of sustaining, on a basis of self-sufficiency , their rhinoceros conservation efforts.

There is concern that the blanket banning of trade in endangered species and their products may be short-sighted and reduce conservation options available in range states. This is contrary to CITES which urges that all potential conservation options be evaluated.

For example the importing of black rhino trophies taken during conservation dehorning exercises in Zimbabwe would help pay for the cost of such measures, without being to the detriment of the species; yet the importation of such trophies into the USA was prohibited.

Over the years, excellent black rhino monitoring in Pilanesberg National Park, South Africa, led to the identification of three geriatric old males. All three animals subsequently died within a year of being identified - either being killed by other bulls, or dying a long slow death due to ill health, complications associated with old age and resultant malnutrition. Let us hypothetically suppose that an American hunter offered to pay $250,000 to hunt one such geriatric male black rhino. The animal's reproductive life is over; and so hunting it is not going to be to the detriment of the species. The revenue generated from just one such rhino however could go a long way to contributing to the high costs of rhino conservation and/or to contribute to developing neighbouring communities. Under the current ESA the importation of such a trophy would be automatically prohibited as the black rhino is classified as endangered, even if CITES permission was obtained.

Thus, from a South African perspective there is a need to consider each case on its conservation merit, rather than resorting to an "automatic" policy for all endangered species. It is important that no valid options for conservation are foreclosed.

GENERATION OF ADDITIONAL INCOME FOR CONSERVATION IN SOUTH AFRICA

1) ECOTOURISM

Ecotourism has substantial potential in South Africa to generate revenue. Unfortunately not all rhino parks or wildlife reserves/ranches are accessible or suitable for substantial ecotourism. While non-consumptive ecotourism can generate additional funds, on its own it is not enough.

The current high interest rates in South Africa make it very expensive for conservation departments to borrow money to build new ecotourism developments such as camps and lodges. Putting in and maintaining the additional necessary infrastructure for mass ecotourism, such as serviceable tourist roads is also very expensive. Indeed, after paying loan repayments there may (in the short to medium term) be little surplus ecotourism revenue available to plough directly back into conservation.

Some people outside the country have suggested that South African Parks may be too cheap, and that the simple solution to make up budgetary shortfalls is simply to

increase charges. However this ignores the fact that 1) South Africa has a sizeable domestic ecotourism market which is already resisting what they see as "high prices"; 2) Air fares to South Africa from major tourist markets like Europe are much more expensive compared to those to East Africa because of the increased distances involved. South Africa therefore needs to keep its prices lower to maintain competitiveness and thereby increase the country's share of world tourism; 3) some of the most upmarket private reserves catering largely for wealthy overseas tourists are already charging high prices; and 4) when state parks are funded by the taxpayer, one cannot charge such high prices as to make them inaccessible to the very citizens who pay for them.

2) GAME SALES

Commercialisation of game has made a very positive contribution to South African conservation in the short term. The sale of 328 white rhinos and 36 black rhinos by the NPB on auction/secret bids has generated a total turnover of R12.92 million and R 10.37 million respectively in just six years. Until 1995 some white rhino were also sold by the NPB at a fixed price, and these are excluded from the above totals. Sales by the private sector and other conservation departments have also been excluded. Using current exchange rates Natal Parks Board rhino auction sales alone produce a gross turnover in excess of over $1 million per annum. It is encouraging to note that this year average white rhino prices jumped by 47.%.

These game sales are highly beneficial as the major state conservation departments in South Africa with rhino (being parastatal), are able to plough back any additional revenues generated from game sales into conservation.

Rhinos are not the only game species sold on auction. The total turn over at game auctions annually in South Africa tops about R6 million (approx $1.7 million). The recent NPB auction alone had a gross turnover of R 5 million ($1.4 million). Given their high value, the bulk of the turnover at these auctions (in the region of 80%) is made up of rhino sales.

Before 1989, the Natal Parks Board sold its white rhinos at low prices that were effectively well below their true market value. However, since 1989 the Natal Parks Board have auctioned their rhinos, letting them find their true market value. In 1989 black rhinos were also sold to the private sector for the first time.

Apart from greatly increasing revenue for the Natal Parks Board, this increased commercialisation of rhinos has had a number of positive consequences...

- It sent a message to magistrates and police that rhino crimes were very serious and deserving of being accorded top priority. The high value of rhinos is now routinely quoted by conservation departments in court to persuade magistrates to hand down stiffer sentences. The South African Police Endangered Species Protection Unit also was founded the same year that rhinos were given a true "market-value" instead of only a "conservation value".

- The high live sale prices were used to lobby for substantial increases in the legal penalties for convictions relating to rhino poaching and illegal trading in rhino horn.

- The high prices fetched for live animals significantly increased the incentive for the private sector to breed up rhinos. This contributed to increasing the economic viability of game farming. Indeed the more conservation can demonstrate that it is the best form of land use, the more conservation will be supported by the majority of the public and the politicians. Also if game is profitable a bigger area of the country will be managed as wildlife habitat as opposed to being transformed into agricultural monocultures of sugar cane, gum trees; or used for more ecologically damaging beef farming.

- The abuse of hunting by some elements in the private sector when white rhinos were sold at a subsidised price (eg such as shooting all adult bulls or even breeding females) dropped substantially once rhinos fetched market related prices as the element largely responsible for these abuses were to a large extent eliminated from the market because they could no longer afford the new high prices being asked for rhino. The annual proportion of white rhinos hunted per annum on private land dropped from 10.5% to 3% once the live value of rhino increased. As a result, numbers of white rhino on private land have been increasing, and now number around 1,250.

Thus, even after allowing for the costs of capture and translocation, live rhino sales have raised a substantial amount of much needed revenue for conservation as well as having a number of other positive spin-offs.

3) HUNTING

Adcock & Emslie (1994) have documented that hunting of white rhino in South Africa has been sustainable, and has substantially benefitted conservation. Some key points to note from this paper are that...

- The average annual hunt as a percentage of all white rhino in South Africa has averaged less than 1% per year since 1968 (when sport hunting of white rhino began in earnest).

- Since white rhino hunting started in South Africa in 1968, white rhino numbers have increased from 1,800 to over 6,370.

- Using current prices rhino hunting since 1968 has generated a gross turnover of equivalent to over $22 million (excluding other trophy fees, taxidermy costs, additional hotel charges, ammunition, and additional tourism and curio expenditure). This generation of foreign exchange has been to the benefit of the country. (This year it is estimated that hunting fees and daily rates for rhino hunts alone will generate a turnover of close to $2 million.)

- Trophy hunting of rhino has moved the economics of many ranching/game park enterprises towards profitability, and has promoted the continuing existence of white rhinos on private land. Hunting helps drive the live sale industry providing another way for owners to finance and justify their populations, and realise a return on their investment.

- The hunting and associated capture industries generate and contribute to the creation of many jobs in South Africa.

- State conservation bodies like North West Environmental Conservation (ex Bop Parks Board) and the Natal Parks Board have generated revenue from both hunting and live sales; whilst rhino have continued to increase in numbers in their areas.

Indeed removing rhinos to maintain populations below carrying capacity and hence keep populations productive is a key component of the strategy that has seen rhino numbers increase greatly.

As part of the data collection phase of an international cost:benefit study into different approaches to rhino conservation it was found that the United States imports the majority of hunting trophies (Richard Emslie pers.comm.). The proportion of white rhinos that are shot by American hunters has been as high as 74.9 % but in recent years has dropped to 61.7 %.

Should the importation of white rhino trophies into the USA ever be stopped for any reason, the impact on conservation in both the public and private sector would be devastating....

- Live sale prices would crash and conservation departments would lose the substantial income that they need to top up budgets to ensure good protection of rhino.

- White rhino hunting prices would decline as more ranchers chased fewer clients.

- Potential income for ranchers from having white rhino would decline sharply. Many ranchers might unbundle themselves of rhino as the risk and expense of protecting rhino was no longer justified by the potential returns.

- The economic viability of game farming may be affected in some areas forcing farmers to change from game to cattle-farming, sugar-cane or forestry. This would result in habitat transformation to the detriment of many wildlife species.

- South Africa's FOREX earnings from conservation would decline.

- Many people in the hunting and game capture and subsidiary industries would lose their jobs. In rural areas it has been estimated that each worker can support as many as 15 people. Thus the number of people negatively affected would be much higher.

This brings one to the inescapable fact in Africa, that conservation cannot be divorced from human needs.

CONSERVATION AS A VEHICLE FOR HUMAN DEVELOPMENT

For conservation in South Africa to succeed in the long term, it has to have the support of the majority of the people and the politicians.

The fact is that there are many very poor people in Africa. The more conservation can contribute to human upliftment and empowerment the better. It is very important that rhino conservation, and indeed all conservation, is not seen as a luxury that only "rich white-people" do. Conservationists cannot afford to give the impression to neighbouring communities that they "care more about animals than people".

It is essential that conservation wins friends and builds good relations with neighbouring communities. The more wildlife can create jobs and facilitate community upliftment (for example by facilitating the provision of clean water, schools or health clinics) the better. Also the more revenue, FOREX and jobs conservation can generate, the stronger its case will be for more funds from central government.

The early history of African game reserves and parks is one of colonialism. Parks were set up and people moved out. Strict protectionist policies were enforced with no thought for the welfare of the poor. Neighbouring communities saw little benefits from parks, yet the Park's wild animals caused damage to their crops, livestock and property. Over the decades antagonism was created between parks and their neighbours.

However, over recent years a major paradigm shift has occurred in many African countries. Protectionism is now seen as discredited; while sustainable use of wildlife has been adopted as the cornerstone of the philosophy underpinning conservation in the region. This offers the best approach to helping generate the necessary funds for conservation. In the poorer countries of the world there is growing pressure for land and there is pressure to "use land or loose it". Sustainable Use enables conservationists to justify conservation as a productive form of land use.

Conservation developments are expanding in many areas of the region simply because they make good economic sense, and have the best potential to bring in wealth and jobs, and so help empower poor rural communities. Relationships between parks and neighbours is improving in many areas, and the antagonism of the past is being broken down. In some cases rural communities are now setting up their own game reserves. Without the commercialisation and sustainable use of wildlife this would never have occurred.

Good neighbour relations also contribute to successful conservation, as neighbouring communities are more inclined to provide intelligence information on potential poachers that may have moved into their area.

Therefore the application of the ESA to foreign species needs to consider the impacts of any listing on the people that may be negatively affected in the foreign country. Better still, the philosophy underpinning the ESA should be brought up to date to reflect the promotion of *sustainable use of wildlife for people* as set out in the world conservation strategy .

THE ESA AND CITES

CITES provides a forum where expert specialist and range state opinions can be included in the decision-making progress when deciding about trade in any listed species.

The first listing of foreign species under the ESA occurred when there was no adequate international legislation governing trade in wildlife products.

However with the forming and growth of CITES, and because listed foreign species currently do not get any of the benefits that would be available for listed American species, consideration should be given as to whether the ESA should revert to only dealing with domestic US species.

ESA rating sometimes bear no relation to CITES ratings, with the latter being increasingly being based on objective scientific criteria. To avoid confusion the ESA should therefore adopt the CITES ruling on the status of foreign species.

CONCLUSIONS

Based on our conservation experience in KwaZulu-Natal and the rest of South Africa I **would fully support the sentiments expressed by the ministers from the four SACIM countries in their submission to Congressman Don Young, Chairman of the House Natural Resources Committee.**

My first choice would be that we relied on CITES to control the trade in wildlife products. Thus I too would favour dropping foreign species from the ESA.

However if foreign species are to be included then I would suggest ...

- That it be mandatory that range states should be fully consulted before the inclusion of any species
- That the economic and conservation consequences of any listing are thoroughly evaluated. The history of South African rhino conservation is a good example where commercialisation and sustainable use clearly has benefitted rare species.
- That provision should be made for financial support to be given to foreign range states to promote successful recovery programmes of listed species as is done for species listed in the USA.
- That the ESA be adapted to be more flexible so that under certain circumstances it could allow sustainable use or commercialisation of selected endangered species provided this will not be to the detriment of the species. Where possible it is recommended that the new act is underpinned by the philosophy of conservation for people rather than protectionism.
- That the ESA brings its listing of foreign species more into line with the listings adopted by CITES.

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Foundation for North American Wild Sheep

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STATEMENT OF THE FOUNDATION FOR NORTH AMERICAN WILD SHEEP IN FAVOR OF REFORM OF THE FOREIGN ASPECTS OF THE ENDANGERED SPECIES ACT

The Endangered Species Act has a history of harming foreign species by obstructing foreign range national conservation programs. An example very dear to this organization is the listing as endangered and threatened of the argali sheep in China and in the CIS

Like many other foreign species, the sheep was listed not because its status was know, not because it was know to be endangered or threatened, but out of ignorance or the so-called "precautionary principle." It was listed because it's territory was so vast and it existed in so many different populations that its real status wasn't know to agency bureaucrats in Washington, D.C. They listed it until the foreign range nations could do the impossible: establish what its' population was and its status, which would be prohibitatively expensive The consequences were that the range nation conservation programs that were dependent upon tourist hunting dollars, and the anti-poaching effect inherent in having the hunter present and giving the wildlife value in the field came to an abrupt end. Argali that were worth fifty times that of a domestic sheep as tourist hunting trophies taken under license in a regulated hunt suddenly were converted to being fifty time less valuable, and were the first to be eaten or eliminated from the field. It was not only improper to list the species as endangered and threatened, the listing of it obstructed programs over range nations conservation authorities objection. There was no high volume commercial trade or illegal activity. There were approximately 125 trophies a year from all of its' habitat.

CITES is a more appropriate instrument for governing the importation and exportation of foreign species. There seems to be little alternative but to take agency personnel out of the equation. The importation of trophies of threatened game animals should be exempted completely when it is a component part of the range nation program, which means when it is lawfully taken under license. It is fundamentally unsound to have agency personnel in the U.S. imposing restrictions and costs that constitute taxes on these poor range nations. There must be at least a presumption in favor of those imports. An endangered species should be allowed to be imported when it is a component part of a range nation program, particularly when it is sanctioned by CITES. Tourist hunting is a fundamental conservation tool that gives wildlife a "game animal" status. It is very low in risk because it is very low in volume, and it's select. It is an ideal conservation tool in remote locations where wildlife has little or no other chance. It generates revenue, local incentive, and helps quelch poaching.

Listing of the argali has actually harmed the species because of its impact upon the importation of the trophies that tourist hunting-base conservation programs are completely dependent upon. The anti-hunters have argued that even threatened argali should not be allowed to be imported based upon the wolf and grizzly bear decisions of our courts. This should have been stopped long ago, because we can't replace the benefits that we are interfering with. We must exempt trophy imports from restriction. Tourist hunting is an exceptional category of sustainable use that gives remote wildlife a "game animal status". We have no right to stop it when there is no adequate substitute for its presence and potential beneficial effects. We have been embarrassed about the U.S.'s lack of knowledge and meddling, but that's outweighed by our concern for the welfare of the species that we care so dearly about. Tourist hunting is a conservation tool and when you tax it, eliminate it, or interfere with it, you are reducing the benefits to the species. The U.S. is in no position to substitute its judgement in the fields of foreign lands for that of the range nation authorities. It is a documented failure. The ESA must be reformed to exempt tourist hunting since it is a licensed, regulated, component part of the range nation programs.

The Foundation for North American Wild Sheep is a leader among wildlife conservation organizations. Our commitment to the wild sheep of North American is without comparison. Over 13 million dollars has been generated for wild sheep conservation programs in the United States, Canada, and Mexico. The programs not only benefit wild sheep, but all wildlife.

We thank you for the opportunity to make this statement. We hope that our experience in wildlife management will help you in addressing the issue of reforming the Endangered Species Act.

Karen Werbelow
Executive Director

Congressional Sportsmen's Foundation

STATEMENT OF THE CONGRESSIONAL SPORTSMEN'S FOUNDATION
FAVORING REVISION OF THE FOREIGN ASPECTS OF THE
ENDANGERED SPECIES ACT
July 20, 1995

The long-awaited reauthorization of the Endangered Species Act is about to begin. The Act's reauthorization is certain to generate heated debate among traditional allies, as well as between the conservationist and preservationist camps. No matter what revisions are made, however, it is clear that any action affecting wildlife in the United States will have a definite impact on wildlife throughout the world.

The Endangered Species Act, as currently written and enforced, discourages, and sometimes prevents, foreign countries from implementing the most appropriate measures for their human and wild populations to thrive in tandem. For developing countries to lift their citizens out of poverty while maintaining native wildlife species, well-regulated and profitable tourist hunting programs are of the utmost importance. The Endangered Species Act, however, limits the ability of the U.S. Fish & Wildlife Service to issue permits for the importation of trophies taken in many range nations.

Without the ability to encourage their countrymen to protect their valuable indigenous species for strong economic gains, range nations cannot hope to stop poaching for either subsistence living or, more devastatingly, for the world black market. It is precisely this manacle that has caused dramatic declines of previously unthreatened species in countries of the African continent.

Developing countries, which are home to thousands of the world's wild species, need to have as many options as possible for improving the condition of their human populations while implementing prudent conservation measures to ensure the survival of their wildlife and habitat treasures. Where governments are able to encourage conservation by returning a portion of tourist hunting dollars to local villages, these governments have been able to halt poaching. When village elders understand that their

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communities can reap the rewards of better medical care and better education for their children when they protect their resources and regulate their harvest, they are able to involve their people in conservation efforts. Economic incentives do work. In many cases in range nations they are the only effective conservation tool.

We have had a number of years to understand the good and bad effects of the Endangered Species Act. The good provisions must be retained and strengthened. On the other hand, those provisions that have had a detrimental effect on our efforts at wildlife conservation need to be re-examined and replaced. Permitting the importation of animals harvested abroad by American tourist hunters will allow range nations to create incentives for wildlife conservation that will work.

If the Endangered Species Act cannot be amended to require our government agents to recognize the unique circumstances of range nations and their needs with regard to conservation measures, perhaps it should be amended to remove the foreign aspects and place them squarely within the realm of the Convention on International Trade in Endangered Specis of Wild Fauna and Flora (CITES) where regulated trade in wildlife is recognized as key to thriving populations of the world's wild species.

Sharon Borg Wall, Chairperson
Congressional Sportsmen's Foundation

An opinion from sub-Saharan Africa...

Eco-colonialism

Douglas M. Crowe and Jeff Shryer

Donor money pours into conservation groups to save African wildlife in a type of post-modern ecological colonization. But these authors believe that donors must open more than their bank accounts to preserve Africa's wildlife.

Africa is a battleground of the global conservation movement. At stake is whether Africans will manage their wildlife or whether the task will be usurped by a cartel of conservation organizations based in the United States and Western Europe. In this context, western conservation philosophy is increasingly divorced from the social and economic realities of much of sub-Saharan Africa. There is a growing tendency by many conservation advocates to promote their personal concept of Africa as an idyllic and sacrosanct wildlife sanctuary somehow separated from the socioeconomic realities of the region. This elitist and condescending attitude lowers the credibility of international conservation efforts and has spawned a new term for African conservationists and wildlife managers: eco-colonialism.

The problem stems from a cultural schism between many of the temperate-zone advocates of conservation and the people they are ostensibly seeking to assist. It was succinctly summarized by Dr. Mostafa Tolba, United Nations Environmental Program (UNEP) Executive Director in his opening address to the Eighth Conference of the Parties of the Convention on International Trade in Endangered Species (CITES) in February of 1992 when he said:

> There are complaints—loud complaints—from a number of developing countries, that the rich are more interested in making the Third World into a natural history museum than they are in filling the bellies of its people [These people] use a small fraction of the world's resources; they earn a pitiful fraction of the world's income; they bear the brunt of famine, of poverty, and of disease. They want a better life. They also happen to live mainly in the tropical and sub-tropical belts of our planet. These people cannot be denied the right to use their natural patrimony.

Nonetheless, the view from some in the international conservation community is that Africans are not competent to establish their own wildlife goals nor implement effective conservation programs. The implication is that Third World people do not possess the proper conservation ethic nor are they able to duplicate First World managerial efficiency. This self-righteous and culturally prejudiced view is responsible for increasing bitterness among many dedicated African conservationists and wildlife managers and impedes the long-term welfare of the region's wildlife resources.

Historical perspective

Formal conservation first came to Africa during the colonial period in the late nineteenth and early

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Key words: Africa, conservation, management, protectionism

twentieth centuries. Its most obvious manifestations—national parks and wildlife protection laws—were based upon European game laws and hunting preserves. These policies evolved from experiences in temperate climes with relatively stable rainfall patterns. They also were based on the concerns of the upper strata and leisure class of society. However, unlike the world's temperate zones, much of sub-Saharan Africa is subject to dramatically fluctuating weather patterns, and many life forms depend on cyclical and sporadic rains. When there is sufficient rain, populations can rise astoundingly. During periods of drought, these same populations may dwindle to a small fraction of their former distribution and abundance. This was poorly understood when most parks and reserves were created during the colonial period. Little or no consideration was given to wet and dry season animal movements, so parks and protected areas seldom comprised ecological units. In addition, game laws promoted the interests of the European leisure classes and disenfranchised indigenous peoples from what previously had been their wildlife. Wildlife conservation in general and parks and reserves in particular became an alien concept to the people who had coexisted with wildlife for many centuries.

Land use and wildlife conservation objectives of most African nations are now fundamentally different from those of colonial policy. The administrative transition has been difficult as these nations strive to implement policies favoring internal development and indigenous peoples. The new leaders must set priorities in terms of benefits to the public they serve. In the context of wildlife conservation, benefits must accrue to the people who coexist with the wildlife or economically more viable land uses will be preferred. Lack of capital combined with intense competition for space and natural resources by burgeoning human populations cannot accommodate the environmental purist philosophies found in many western societies. It is this point that the new colonialists—the eco-colonialists—either do not grasp or choose to ignore. In many developed countries the people value wildlife for such intangible attributes as aesthetics and recreation. However, throughout most of sub-Saharan Africa, such things as food and shelter are paramount, and wildlife must compete economically for its existence.

In many African countries the lives and livelihoods of rural peoples are threatened by wild animals. Poaching is often tolerated because it provides needed protein to a hungry populace or removes animals viewed as pests or threats. Pressures to resettle lands previously reserved for wildlife escalate as human populations increase. Without significant economic returns, wildlife will be overwhelmed by such interests as commercial and subsistence farming, livestock production, mining, and community expansion. In many countries, governments and conservationists are scrambling to develop wildlife programs that produce economic benefits to indigenous people who face disease and starvation. Without such programs to maximize the benefits from wildlife resources, undeveloped land will inevitably be dedicated to more economically viable land uses.

Influence of international aid

Superimposed on this situation is the influence of international aid to wildlife conservation. Often donor programs are administered by expatriate personnel with little experience in the problems and practicalities of on-the-ground management of wildlife. Many have academic backgrounds with advanced degrees. Few have the experience or inclination to work with local people on a daily basis in uncomfortable and unhygienic conditions. Furthermore, their offices are often great distances from the projects they administer. Budgets generally do not provide for the site visits and experience necessary to understand local conditions. Nevertheless, such limitations are ignored in the pursuit of in vogue First World wildlife conservation objectives. Frequently, such objectives do not coincide with those of the recipient country or region, resulting in the failure of many well intentioned and well funded projects.

There are several reasons for this. Private conservation organizations supporting such efforts depend on funds donated by well meaning but uninformed patrons. Similarly, aid from foreign government agencies reflects the conservation sentiments of their citizens. Fund-raising campaigns and media attention focus on the large and glamorous mammals that are readily identifiable to the US and European public. Anthropomorphic interpretations of wildlife behavior and environmental impacts are emphasized to promote public interest. The objective is not to educate the public in complex conservation issues, it is to produce sound bites and graphic visuals to get money. Patrons are not told about the cost to Africans for protecting animals that donors love to love. These costs include living with massive crop damage from herbivores, dry season damage to dwellings and water systems from thirsty or hungry elephants (*Loxodonta africana*), and livestock losses from predators. In addition, rural Africans for-

feit subsistence resources including hunting, livestock grazing, firewood, and thatching grass when nearby areas are protected to conserve wildlife. In essence, Africans lose control of their environment. It should be no surprise that their wildlife priorities differ from those of most donor organizations.

Contributing further to this problem is the foreign academician whose research is often funded by international conservation organizations or universities with international grant programs. Many of these individuals lack an appreciation for local research priorities and ignore the realities of wildlife and human interaction. All too often the resulting research is of little use to the host country and contributes nothing to the management of its wildlife resources.

Preservation versus utilization

These problems become increasingly severe as a protectionist and animals rights philosophy infiltrates international conservation organizations. Many African nations are struggling to implement wildlife management programs that balance both consumptive (hunting, international trade, etc.) and appreciative values (eco-tourism). Running counter to this effort is pressure from many animal rights groups for total protection and preservation. This preservationist philosophy jeopardizes long-term conservation of the region's wildlife, a fact that seems irrelevant to many who embrace the animal rights cause.

Recommendations

What ever happened to science?

In recent years much of what passed as wildlife management was a media circus. Somehow, scientific management lost the high ground in the efforts to conserve the world's wildlife resources. Media hype directed toward emotional appeals for money moved to the forefront of public consciousness. Madison Avenue types and accountants now set the agenda, and the tail wags the dog in the conservation movement. Instead of educating their patrons, donor conservation organizations tell them what they want to hear. Science has either stood by quietly and watched it happen or, in some cases, joined the circus. This is nowhere more obvious than in the controversy surrounding elephant management in sub-Saharan Africa. If we are to focus on the awesome task of conserving the planet's wildlife, science needs to get back in the game. Scientists and managers with proper academic credentials and relevant real world experience must be willing to stand up and comment wisely when misinformation and emotional distortion flickers across the television screen or appears in the printed media.

Good wildlife management is often mundane

Most wildlife management efforts are not particularly photogenic. That does not, however, make them unimportant. At this stage in the evolution of conservation programs in most sub-Saharan African countries, enforcement of laws and regulations is critical. High profile research programs and facilities are no substitute for law enforcement when the immediate threats are illegal harvests or loss of habitat. In addition, some of the more crucial needs are basic supplies and equipment, road maintenance, staff accommodations, reliable transportation, and such simple things as park signboards and information brochures. Beyond this, wildlife conservation education beginning in grade school is key to long-term management success. Traditional recognition of wildlife as a local economic asset has largely been lost by removing authority over the resource from local decision-making. Countries cannot make lasting commitments to protect natural resources without a conservation ethic again being internalized by their citizens. In the end, this is the only way to promote nationwide support for conservation without depending on donor aid.

Donor conservation organizations also need to educate their patrons about perspectives of indigenous people toward wildlife in Africa. Patrons must understand what costs poor rural Africans bear to keep the First World's favored wildlife species. It must be recognized that conservation projects will not succeed unless they include African priorities regardless of their conflict with First World sensitivities. This may often mean supporting sustainable harvest of wildlife to provide indigenous people with food, income, and the resulting motivation to conserve their wildlife and its habitats. Patrons must be educated to appreciate why such activities have a higher priority for funding than more glamorous wildlife research or construction projects. Only through such education will donor organizations gain patron support for taking the controversial positions required to accommodate African priorities.

Negotiate—Don't dictate

The first step in any donor program should be to determine the host government's goals and objectives for wildlife resources. Their values and priorities should be paramount in project considerations. In addition, project feasibility should be further examined through preliminary site investigations. Local

priorities should be incorporated into project designs. Local perspectives on proposed projects should be obtained and community involvement encouraged. Projects are all too often approved on the basis of a quick inspection by outside consultants who visit local communities for several days and leave as "experts" on local conditions. It is not surprising that the projects based on their recommendations often fail because they lack community support.

When a project does go forward it is crucial that the individuals involved have field management experience. Too many projects have been supervised by persons having excellent academic backgrounds but no practical experience in management or working with local people under difficult and trying field conditions.

There is no free lunch

Once a project is defined and adopted, the objective should always be to provide the government with sustainable long-term benefits and improve the efficiency of donor funding. Each project should clearly describe the roles and obligations of donors and their government partners. Many projects fail because either donors do not define government responsibilities or governments do not understand or implement them. There is no incentive for governments to fully participate if unsatisfactory performance results in more unconditional donor aid. Donors are obligated to spend money effectively. Funding should be reduced, shifted to other projects, or terminated depending on how well governments meet their agreed obligations.

Think small

Donors should start with small pilot projects with minimum investment and expand only when the project's tangible benefits justify additional funding. Small investments promote innovative experimentation that focuses on meeting local needs and allows for prompt improvements based on new information. Small projects increase funding efficiency because they can be modified or eliminated at a relatively low cost. Many potentially fruitful projects are ignored because they are perceived as too small to be worth their administration costs. There are many examples of wasteful and unsuccessful "megabucks" projects to demonstrate the fallacy of such thinking.

A code of conduct

A code of conduct is needed for donor-funded researchers. Too often these individuals research questions no one is asking! There are a host of wildlife management problems throughout sub-Saharan Africa that need research attention. Many of these problems do not involve charismatic megafauna in beautiful and pristine locations, but are nonetheless important. Donor-funded researchers need to direct their efforts toward the host countries' priorities, not their own. They should also routinely brief local authorities about their activities and help rural residents understand why they are there. Researchers are often granted special privileges to work in protected areas that are denied to the locals. These privileges, such as free entry into protected areas, visiting privileges for friends, access to closed areas, facilities, and resources are easily abused and well noticed by the locals. Further, it is important that donor-funded researchers help local peoples understand the management implications of their research results. In too many cases researchers poorly communicated their results locally, yet returned home to berate the host country for not implementing their suggestions. This quickly leads to resentment of the researcher, of research in general, and of the organization funding the researcher.

Conservation points to ponder

With its massive publicity and funding, the international donor community has taken many wildlife decisions away from Africans. The result, however, has not been the salvation of wildlife or habitat. This salvation can only be accomplished if Africans choose to conserve their wildlife. It should by now be apparent that the timeworn strategies of conservation donor aid are largely a failure in Africa. Such efforts will fail until donor organizations and their patrons modify their attitudes and values to meet African needs. Furthermore, imposing the conservation philosophies of the well fed on the starving masses only hastens habitat and species loss.

Benefits from wildlife can be in the form of aesthetic, recreational, educational, scientific, and economic returns. In whatever form, these benefits must accrue to the people who "own" the resource. In many First World countries, wildlife is valued for aesthetic and recreational benefits. This, however, is a luxury few Africans can afford. To an under-educated and starving populace, the only meaningful benefit is economic, or making money through a variety of uses of the resource. In the foreseeable future, only tangible economic returns will prompt Africans to protect wild animals and their supporting habitats. This is the same principle the First World countries call profit motive.

Revenues and meals, not researchers or donor lobbyists, will ensure the long-term well being of

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EMBASSY OF THE REPUBLIC OF ZIMBABWE
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OUR REF.: APRIL 27,1995 YOUR REF.:

The Embassies of the four undersigned Governments being members of Southern African Centre for Ivory Marketing present their compliments to the Department of State and have the honor to refer to the current deliberations of the Congress regarding amendments to the Endangered Species Act of 1973.

Our Governments have been distressed for some time about the Act's application to species located within our territorial borders.

In the opinion of our Governments, the Endangered Species Act should be amended to end United States oversight of species that do not naturally occur within the United States. There is simple regulation of trade and use of such species by competent international and national entities. Over 120 Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora have agreed to observe stringent restrictions on international trade in imperiled species. Parties to the Convention, including the undersigned Governments, have enacted national laws that implement the Convention and that restrict use and trafficking in these species.

Unlike the Convention, the Endangered Species Act is premised upon the assumption that conservation is best accomplished by trade embargoes and strict prohibitions against use. For wildlife in countries like ours, however, that is not true. In our countries, inhabitants of our rural communities and large mammals compete for use of the land. Our rural people cannot be expected to cooperate in conserving the wildlife as having some economic value to themselves. Well-regulated trade in such species can provide economic value

for people in local communities while still allowing the wildlife to thrive. Similarly, restricted trophy-hunting can provide revenues for conservation with little loss of wildlife. Unlike the Convention, which allows trade in at-risk species under a quota system, the Endangered Species Act fails to take account of local conditions affecting non-United States species.

The result is that, under the Endangered Species Act, the Department of Interior has made determinations regarding non-United States species that:

. are contrary to the regulatory plan of the Convention;

. frustrate our Governments' strategies for wildlife conservation; and

. infringe upon the sovereign right of our Governments to take responsibility for managing our own wildlife.

Such actions by the Department of Interior, as illustrated in the attachment to this Note, have been a source of deep regret to our Governments.

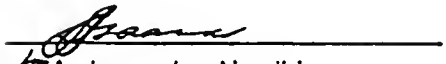
Our concern about the Endangered Species Act is aggravated by the failure of the Department of Interior to consult with our Governments about determinations concerning our wildlife. Our governmental agencies, staffed by well-qualified professionals, have a special competence in developing wildlife management strategies that are suitable to local conditions. Under the Act, the Department of Interior is not required to consult with our Governments, and it often fails to heed or defer to the views of our Governments.

Our Government wildlife agencies have written to chairman Young of the House Committee on Resources, suggesting amendments to the Endangered Species Act. We request that the Department of State inform the Congress of the views of our Governments.

Our Embassies avail themselves of the opportunity to renew the assurances of our highest consideration.

Ambassador, Botswana

Ambassador, Malawi



Ambassador, Namibia

Ambassador, Zimbabwe

Telephone (202) 797 1007
Telegrams MALAWIEMB, WASHINGTON, D.C.
Telex 64348
Fax (202) 265 0976
Communications should
be addressed to:
The Ambassador

In reply please quote No. ME/ADM/1/94

MALAWI EMBASSY
2408 MASSACHUSETTS AVE., N.W.
WASHINGTON, D.C. 20008

5th May, 1995

Dear Colleague,

Kindly refer to our discussions yesterday, May 4th, 1995. As indicated in our discussions, Malawi is in full agreement with the steps taken and in order to expedite the processing of the joint request to Congress, it is proposed, and it would appear you were in agreement that the initial document signed by Botswana, Namibia and Zimbabwe is forwarded to the relevant authorities.

On the part of Malawi, and in the absence of any documents at our Office here to give a background to the subject of the endangered species, it was considered desirable that the parent Ministry in Lilongwe be appraised of the situation and the agreed position. To this end, communication was sent to Lilongwe and as soon as a clearance has been given we shall communicate with you and in turn, we shall send to the authorities here the necessary document with our signature appended to validate the proposal in the presentation by the Ambassadors of the four governments involved in the matter.

Meanwhile, in the space provided for Malawi's signature in your presentation, kindly indicate "Malawi authorization and signature to follow".

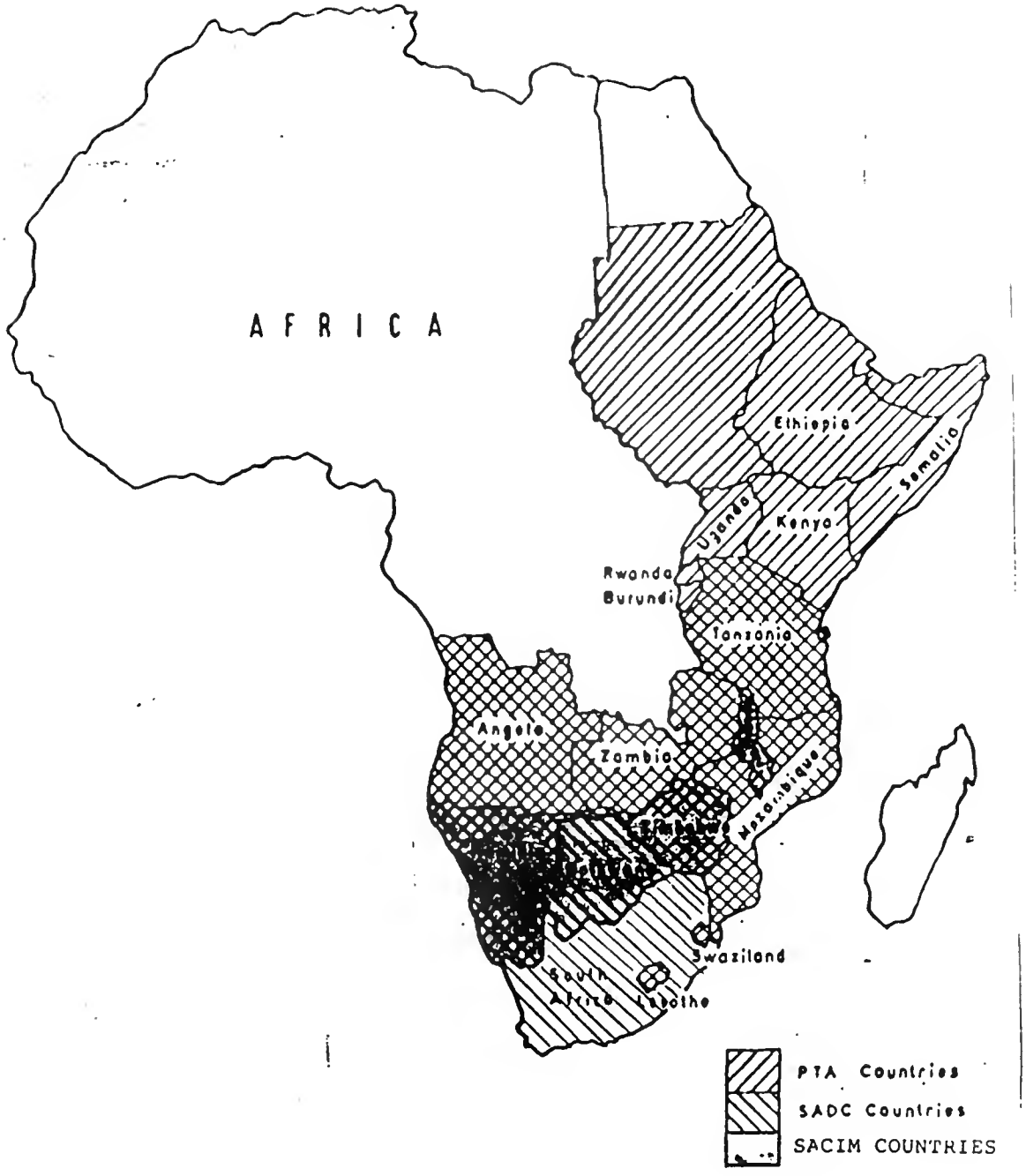
I am sure this arrangement will be found satisfactory to all parties concerned.

Yours faithfully,

W. Chokáni
AMBASSADOR

WC/hmr

His Excellency Amos B. M. Midzi
Ambassador
Embassy of the Republic of Zimbabwe
1608 New Hampshire Avenue, N.W.
Washington, D.C. 20009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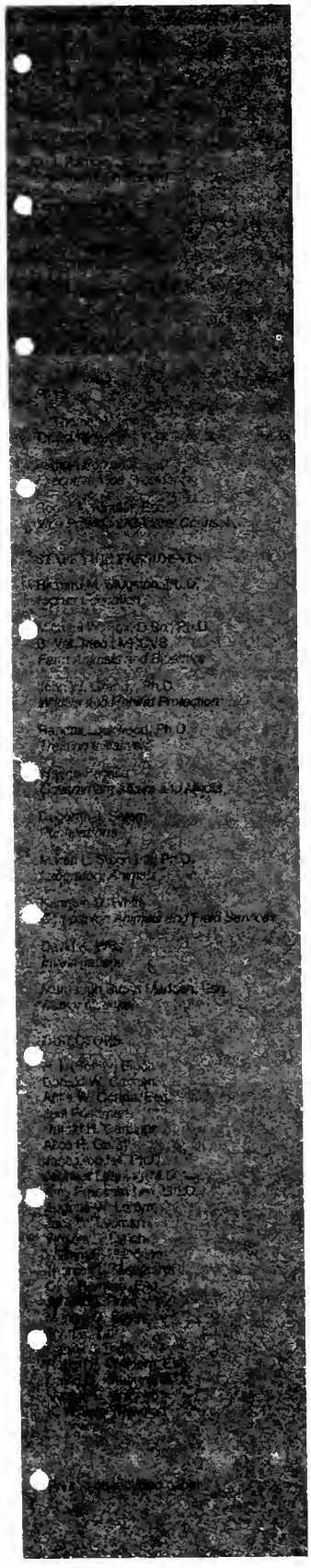


HSUS

STATEMENT OF DR. JOHN W. GRANDY
VICE PRESIDENT
THE HUMANE SOCIETY OF THE UNITED STATES

BEFORE THE
SENATE COMMITTEE ON ENVIRONMENT AND
PUBLIC WORKS

SUBCOMMITTEE ON DRINKING WATER,
FISHERIES, AND WILDLIFE

ON
REAUTHORIZATION OF THE
ENDANGERED SPECIES ACT

SPECIFICALLY ON
THE TRADE IN ENDANGERED SPECIES AND
THE RELATIONSHIP BETWEEN TRADE
PROHIBITIONS AND
CONSERVATION OF THOSE SPECIES

JULY 20, 1995

The Humane Society of the United States
2100 L Street, NW, Washington, DC 20037
(202) 452-1100 FAX (202) 778-6132

Good morning Mr. Chairman and members of the Subcommittee. Thank you for providing The Humane Society of the United States with an opportunity to testify on the reauthorization of the Endangered Species Act (ESA), specifically on the trade in endangered and threatened species and the relationship between trade prohibitions and conservation of those species.

I am Dr. John W. Grandy, Vice President of Wildlife and Habitat Protection for The Humane Society of the United States (HSUS), this nation's largest animal protection organization, having more than 2.5 million members and constituents.

Mr. Chairman, we have a disgraceful problem in this country that threatens the heart and soul of our national character. Our citizens are destroying the Earth's wildlife at a phenomenal rate -- not because we are living in poverty and are forced to eke out an existence by killing wildlife for food or using elements of their habitat for shelter -- but for the most frivolous purposes: Because we are wealthy and can afford to pursue and kill them as trophies and hang their heads on our walls or otherwise display them.

To The HSUS, it is a disturbing and embarrassing fact that America is the world's largest market for wildlife -- a market that has almost single-handedly brought populations of many animal species to the brink of extinction.

Mr. Chairman, every year American animal industries -- whether pet, hobby, biomedical, circus or trophy -- import thousands of monkeys, tens of thousands of birds, millions of reptiles, tens of thousands of mammals killed by trophy hunters, and hundreds of thousands of tropical fish.

A small number of these animals are protected by a shield -- and that shield is the ESA.

While the ESA doesn't stop the import of tens of millions of animals, it does protect a select few -- those few for which scientific evidence indicates that the species should not be subject to exploitation -- those few listed as endangered or threatened under the ESA.

For over twenty years, the ESA has appropriately restricted the importation to the U.S. of ESA-listed foreign endangered and threatened species. However, as described in our attached report on the trophy hunting industry, even the relatively few species listed under the ESA can be -- and are -- imported by the hundreds under certain ESA exemptions, regulations, and interpretations.

Among the major findings of our report are:

- In 1993, 46,582 animals, representing over 250 species, were killed by American trophy hunters and imported to the U.S., an increase of 71% since 1990.

- Also in 1993, 1322 animals, representing over 40 endangered or threatened species under the ESA, were killed by American trophy hunters and imported to the U.S., an increase of 83.6% since 1990.

- Endangered and threatened animals that were imported as trophies in 1993 included: 416 African elephants, 346 leopards, 229 lechwe, 100 bontebok, and 64 Hartmann's mountain zebra.

Mr. Chairman, the fact is, even under the current ESA, too many foreign endangered and threatened species are allowed to come into this country every year. Exemptions in the ESA language, and interpretations of the ESA by the U.S. Fish and Wildlife Service, have already made the importation to the U.S. of trophies of endangered and threatened species easy. For example, did you know, Mr. Chairman, that it costs only $25 to get a permit to import an elephant or leopard trophy to the U.S. and that it can take as little as three days to get such a permit from the U.S. Fish and Wildlife Service?

The U.S. Fish and Wildlife Service (Service) routinely grants permits to import endangered and threatened species to the U.S. Permits are granted based on the finding, under Section 10(a), that the import "enhances the propagation or survival of the species." However, in our experience, the Service does not require proof of enhancement before it issues import permits. For example, the Service grants import permits for Americans who kill elephants in countries that claim to have an elephant management program, of which one element is trophy hunting. But, in our opinion, claims that trophy hunting enhances the survival of species remain unproven, at best.

The Service has granted permits for the import of endangered or threatened species even though the import was detrimental. For example, late last year, the Service granted a permit to an American man to import an elephant trophy from Tanzania, even though the area that the man was hunting in had not had an elephant population survey in over 15 years. In fact, the man killed a 47-year old relatively tame bull elephant who had been the subject of a study in Amboseli National Park in Kenya for nearly twenty years. The elephant had wandered into Tanzania from Kenya and the American hunter was there waiting for him. Because the elephant had been studied for so many years, researchers were able to state unequivocally that the death of the elephant will harm the Amboseli population. Indeed, we note parenthetically that some elephant biologists believe that most African elephant populations are so depleted of older males -- those sought by trophy hunters -- that any hunting pressure will not allow elephant populations to recover from the days of the ivory trade. In spite of these facts, our government allowed the man

to keep his elephant trophy after making a demonstrably unjustifiable finding that the import was not detrimental and that it enhanced the survival of the species.

We are aware that four foreign nations (Zimbabwe, Botswana, Namibia, and Malawi), along with foreign and domestic organizations that promote wildlife exploitation, are advocating that the ESA should not provide protection for foreign species at all, or that the permitting system for the importation of foreign threatened and endangered species should be simplified. There is, for example, a proposal to amend Section 10 of the ESA to grant wildlife importers a ten-year general import permit, which would allow them to import as many endangered and threatened animals as they like over the period of 10 years. We are aware that this proposal would not just affect the permitting process pertaining to the import of endangered and threatened species under the ESA, but would affect the import of all species protected under the Lacey Act, marine mammals protected by the Marine Mammal Protection Act (MMPA), and bird species protected by four Acts: The Wild Bird Conservation Act, the Migratory Bird Conservation Act, the Migratory Bird Treaty Act, and the Bald and Golden Eagle Protection Act.

This proposal is as ludicrous as it is destructive in both content and scope. Diminishing ESA protection for foreign species would invite the importation to the U.S. of even more endangered and threatened foreign species than are already being imported, even when such import is detrimental to wild populations; it would also diminish foreign nations' ability to protect their wildlife from traders who will ravage wildlife populations to supply newly opened U.S. markets.

We know that you will hear testimony today that the ESA is preventing these four southern African countries from selling their wildlife to American trophy hunters or to American importers; that ESA protection is devaluing their wildlife; and that, therefore, the ESA is causing the decline of these species. However, we remind the Subcommittee that there are few, if any, documented examples of how enhancing the economic value of an endangered or threatened species, through commercial or trophy use, has led to its recovery. Yet, there are many examples -- such as the ivory trade that slashed African elephant populations by more than half in only ten years -- that prove the contrary.

Nonetheless, as proven by the startling number of foreign endangered and threatened species that are allowed to be imported under the current ESA, we do not need to change the law to make these nations happy. Indeed, of the 1322 foreign endangered and threatened animals imported to the U.S. as trophies in 1993, 744 (56%) came from those four southern African nations.

The implications of a blanket 10-year permitting system to animals imported for purposes other than as trophies are monumental. For instance, marine mammals and endangered and threatened animal species imported for public display, require permits under the ESA and MMPA. Allowing marine parks or circuses to import animals without restriction under a 10-year permit would open the flood gates, allowing them to remove animals

from the wild and transfer them through facilities in other countries, in effect laundering whales and apes like money and drugs. These proposed changes would impact the MMPA in particular; during the 1994 reauthorization, retaining the requirement for import permits was one of the few positive provisions in regard to public display. This important MMPA restriction would be effectively rendered meaningless if a 10-year permitting system were instated.

The aforementioned four southern African nations have claimed that the importation of foreign species to the U.S. should not be addressed by the ESA and that, instead, CITES alone should govern all international trade in endangered species. These nations call the efforts of the U.S. to control importation of endangered and threatened species into this country "controversial" and "offensive" because they believe that it impinges on their sovereignty. However, under CITES Article 14, the U.S. -- like other CITES Parties -- has the right to enact "stricter domestic legislation." The U.S. has the right as a sovereign nation to make its own judgement -- apart from CITES -- about the need to restrict commercial and trophy importation to the U.S. of threatened and endangered wildlife. This judgement is related to our national ethics and what activities we will condone.

The ESA is the "stricter domestic legislation" envisioned in CITES Article 14. Indeed, because the goal of the ESA is to ensure recovery of endangered and threatened species, the ESA exceeds CITES standards by requiring a determination that the import of endangered and threatened species will actually enhance the survival of the species. While it is true that this rarely is the case and is extremely difficult to demonstrate, the requirement gives the species the benefit of the doubt instead of the importer or trophy hunter. This is an appropriate requirement, considering that species listed under the ESA have been scientifically determined to be endangered or threatened with extinction.

But, the main problem with relying on CITES as a mechanism to ensure that wildlife trade is not detrimental to populations is that CITES is not properly implemented and enforced. We cannot rely on exporting countries to make proper, science-based findings that the export of endangered and threatened species will not have a detrimental impact on wild populations. Although such a finding is required by CITES, it is widely acknowledged that most Parties do not fulfil the requirement. It is important to note in this context that Section 9(c)(2) of the ESA allows the importation to the U.S. of threatened species without an import permit provided that the species is on CITES Appendix II and the import is not for primarily commercial purposes. This exemption is most often used by trophy hunters to import threatened, CITES Appendix II species. However, given that most countries do not make proper non-detriment findings, this exemption should be eliminated from the ESA during this reauthorization.

The four southern African nations have also suggested that those proposing threatened or endangered status for species should have to demonstrate that trophy hunting and commercial imports will damage the species, a proposal that shifts the burden of proof to those fighting for the protection of threatened species. If these nations think that a

particular threatened foreign species could benefit from hunting or trade, then, under the current ESA, they could petition the Fish and Wildlife Service to change the status of the species or allow imports by "special rule" or another mechanism. However, the burden of proof should remain with those wishing to commercialize or hunt endangered or threatened species.

Finally, we would like to address Section 7 of the ESA, which requires interagency cooperation in carrying out programs for the conservation of endangered and threatened species. Federally funded projects overseas are within the scope of the ESA's consultative procedures to ensure that federal funds or actions are not undermining the ESA or CITES. However, it has come to our attention that one U.S. government agency, the U.S. Agency for International Development (USAID), is subsidizing trophy hunting of elephants while another U.S. government agency, the U.S. Fish and Wildlife Service, is trying to ensure the recovery of elephant populations. This scandalous and detrimental situation is a waste of tax-payer money and cannot be condoned. Indeed, the CAMPFIRE and ADMADE programs, in Zimbabwe and Zambia, respectively, that are based on local people selling wildlife to trophy hunters, benefit far less from trophy hunting than they have from U.S. taxpayers, who have unknowingly subsidized these programs for $2 million dollars a year, from USAID, over the last six years.

Despite the negative opinions about the ESA expressed by the four southern African nations, many foreign countries are appreciative of U.S. efforts to control our strong wildlife markets. Without the ESA's import and sale prohibitions, such countries would not be able to adequately protect their flora and fauna from traders who would otherwise ravage their wildlife populations to supply U.S. markets. The ESA should not be changed to benefit those few countries and industries who feel economically hindered by the ESA's protection of a few foreign species, to the detriment of all other countries who count on the U.S. government to control the American market for endangered species products. On the contrary, the U.S. has an obligation to help these countries protect and conserve their wildlife by controlling our wildlife markets.

Based on the findings of our report, The HSUS makes the following recommendations to the Subcommittee and the 104th Congress:

- Reauthorize a strong ESA that does not weaken protection for foreign endangered and threatened species;
- Do not change the permit procedures under ESA Section 10;
- Eliminate the permit exemption for the importation of threatened species that are listed on CITES Appendix II, found in ESA Section 9(c)(2).

- Ensure that funds from USAID are not spent subsidizing American trophy hunting of endangered and threatened species or in setting up local economies based on wildlife sale which will not be sustainable in the long run for people or wildlife; and

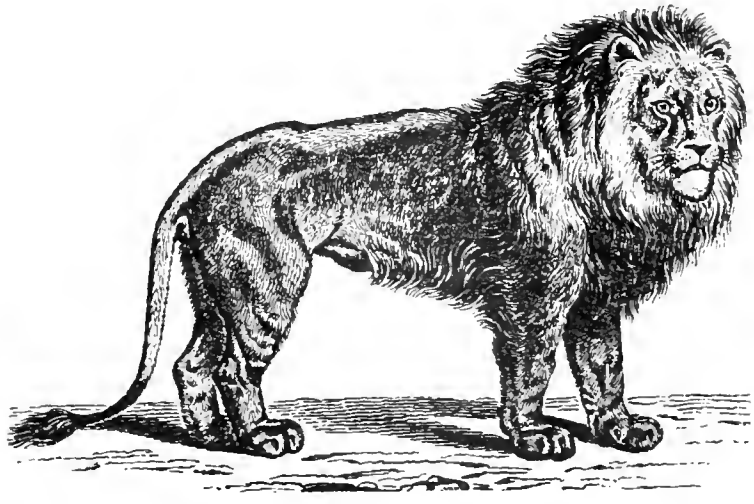
- Ensure that the U.S. Fish and Wildlife Service requires positive scientific proof that imports of endangered and threatened species actually enhance the survival of the species, as required by the ESA.

Mr. Chairman, in closing, I remind you that some of the most magnificent animals on Earth -- elephants, rhinos, leopards -- are being shot and killed for sport by American hunters, or are being imported for entertainment. It would be ludicrous to further weaken ESA protection for the few species that are provided some modicum of protection from those who would gratuitously kill or exploit even more of these animals if given the chance.

Thank you, Mr. Chairman and members of the Subcommittee, for this opportunity to share our views about the trade in endangered species and the relationship between trade prohibitions, under the Endangered Species Act, and conservation of those species and our suggestions for congressional action.

BIG GAME, BIG BUCKS:

THE ALARMING GROWTH OF THE AMERICAN TROPHY HUNTING INDUSTRY



Prepared by

The Humane Society of the United States
Humane Society International

2100 L Street, NW, Washington, DC 20037

A joint report by the Government Affairs and Wildlife sections

Primary authors:
Dr. Teresa Telecky
Doris Lin

July 20, 1995
(First Printing)

BIG GAME, BIG BUCKS:
THE ALARMING GROWTH OF THE AMERICAN TROPHY HUNTING INDUSTRY

Abstract: *The trophy hunting of exotic animals by American big game hunters is increasing at an alarming rate. Over 45,000 foreign animals were killed and imported to the U.S. by American trophy hunters in 1993, a 71% increase in only a four-year period. Among the imported trophies are thousands of threatened and endangered species, as well as species listed under CITES. The number of endangered and threatened species killed and imported by American trophy hunters increased by 83% in the same period. Three factors have contributed to the rising numbers of animals killed and imported by American trophy hunters: 1) The U.S. government's leniency toward trophy hunting, which has led to increased trophy imports and even subsidies of trophy hunting; 2) aggressive promotion of trophy hunting by organizations to cash-poor African nations who are anxious to sell their wildlife to trophy hunters, regardless of the effect on wildlife populations; 3) the ascension of several trophy hunting advocates to positions of major power in the Congress. Americans who trophy hunt foreign animals are very wealthy, spending literally millions of dollars killing foreign animals, with very little of this money going to local communities. Competitions, sponsored by elitist trophy hunting organizations, provide incentive for killing more animals, while feeding the multi-billion dollar industry. Trophy hunting advocates are now attempting to gut the Endangered Species Act and to slacken restrictions on the importation of sport-hunted trophies. This report paints a picture of an industry that is out of control and is threatening the survival of wildlife populations around the globe. The major findings of this report are as follows:*

- *46,582 animals, representing over 250 species, were killed by American trophy hunters and imported to the U.S. in 1993, an increase of 71% since 1990.*
- *1322 animals, representing 40 endangered or threatened species under the ESA, were killed by American trophy hunters and imported to the U.S. in 1993, an increase of 83.6% since 1990.*
- *17,953 animals, representing over 110 species of animals listed on the CITES Appendices, were killed by American trophy hunters and imported to the U.S. in 1993, a seven-fold increase since 1990.*
- *Exemptions in the ESA, and interpretations of the ESA by the U.S. Fish and Wildlife Service (Service), have eased the importation to the U.S. of trophies of endangered and threatened species.*

- *Claims that trophy hunting enhances the survival of species are unproven, at best.*

- *CAMPFIRE and ADMADE, programs in Zimbabwe and Zambia, respectively, that are based on local people selling wildlife to trophy hunters, benefit far less from trophy hunting than they have from U.S. taxpayers, who have unknowingly subsidized these programs for $2 million a year over the last six years.*

- *American hunters routinely spend between $35,000 and $60,000 on single trophy hunting expeditions, most of which goes to hunting outfitters based in the U.S. or other developed nations, not to indigenous people who live in the vicinity of where the animal was killed or to foreign governments for support of programs that enhance the conservation of the species.*

- *SCI is at the hub of the multimillion dollar safari hunting industry, lining up wealthy trophy hunting clients with hunting outfitters and other elements of the industry.*

- *SCI's award competitions provide incentive for hunters to kill more animals -- to win the highest award a hunter would have to kill at least 322 animals -- which, in turn, provides financial benefits to the trophy hunting industry.*

- *SCI's award competitions may have the effect of inducing hunters to pursue unethical hunting practices and illegal activities.*

Introduction

> "At my shot, the lion roars, drops and flops around while trying to get up. It suddenly collapses when van Aswegen [the "professional hunter"] shoots while I am reloading. It is on its side almost in the exact spot in which it was standing when I shot, but now is facing the opposite direction. My bullet has smashed its shoulder, blowing away the top part of its heart and destroying a lung. Van Aswegen's bullet has broken the spine. He and I circle the lion, then I put two more bullets through its backbone and into the lungs from behind and above.... Its boiled-out skull should rank very high in the SCI [Safari Club International, a trophy hunting advocacy organization] Record Book of Trophy Animals."[1]

It is a scene repeated a hundred times a day, in countries all around the world. An American thrill-seeker, driven and supplied by a lucrative and growing safari hunting industry, kills an animal for fun and competition.

American trophy hunters kill tens of thousands of animals in foreign countries annually, including hundreds of rare, endangered, and threatened animals. Foreign governments encourage trophy hunters to kill wildlife because they stand to gain financially from the activity, even though in most cases, they do not know the effect of trophy hunting on their animal populations. The U.S. government has grown increasingly lenient in allowing American trophy hunters to import their foreign trophy animals, even endangered species. And now, the U.S. Congress is considering weakening the Endangered Species Act (ESA), further diminishing protection for foreign endangered and threatened species from trophy hunters. Trophy hunting has already caused the decline and near extinction of a number of now endangered and threatened animal species, including the spectacled bear, tiger, jaguar, and sable antelope, and continues to threaten such species. If current policies persist, or are made worse, the list of imperiled or doomed species is likely to expand.

This report will illustrate the reasons that The Humane Society of the United States and Humane Society International (HSUS/HSI) have become increasingly concerned about the growth of the safari industry and its effect on animal populations around the world. By one estimate, Americans comprise 75% of all foreign trophy hunters in Africa.[2]

This report examines recent trends in the importation to the U.S. of animal trophies by Americans, current U.S. and international law governing the import of and trade in animal trophies and how these laws are implemented, the safari industry, the leading trophy hunting organization, unethical and illegal actions by American trophy hunters, the supposed conservation benefits and demonstrable conservation problems caused by trophy hunting, and the related challenges facing the 104th Congress.

Importation to the U.S. of Sport Hunted Animal Trophies, 1990-1993

The HSUS/HSI analyzed raw data obtained from the U.S. Fish and Wildlife Service's LEMIS Import/Export System to determine the number, species, and origin of trophies imported to the United States from 1990 through 1993.[3] Over 53,000 shipments were analyzed, many containing more than one animal. The results of the analysis are presented in Tables 1 through 13.

The number of animals killed by Americans who imported them as trophies increased from 27,205 in 1990 to 46,582 in 1993 -- an astounding 71% increase in only four years (Table 1).

More than 250 different species of animals were imported as trophies during the four years. The following species were among the top ten animals killed and imported by American trophy hunters in all four years: impala (Aepyceros melampus), American black bears (Ursus americanus), warthogs (Phacochoerus aethiopicus), greater kudu (Tragelaphus strepsiceros), and common zebra (Equus burchelli). Other animals among the top ten in particular years include crested porcupines (Hystrix cristata), ostrich (Struthio camelus), sable antelope (Hippotragus niger), eland (Taurotragus oryx), African buffalo (Syncerus caffer), springbok (Antidorcas marsupialis), gemsbok (Oryx gazella), and mongoose (Ichneumia spp.). Other trophy-hunted animals included African lions (Panthera leo), giraffes (Giraffa camelopardalis), rhinoceros (Ceratotherium simmum), and baboons (Papio ursinus)(Tables 2-5). Most of the animals were killed in the African nations of Zimbabwe, South Africa, Tanzania, Botswana, Zambia, and Namibia. But black bears killed in Canada ranked high among the trophies imported to the U.S.

During the four years for which we have data, the vast majority of animals imported to the U.S. as trophies were mammals (between 76% and 91%). Birds (between 2% and 18%) and fish (between 1.4% and 5.2%) were killed and imported far less often.

It is important to note that, during the four years, 21,265 mammals were imported to the U.S. as trophies, but were not identified as to species. While some of these were confiscated by the U.S. Fish and Wildlife Service (Service), the vast majority were cleared for importation.

Over 40 species of animals classified as endangered or threatened under the U.S. Endangered Species Act were among the trophies imported to the U.S. between 1990 and 1993 (Tables 6-9). In 1993, 1322 animal trophies of endangered and threatened species were imported (Table 1). This represents an astounding 83.6% increase in number of imports over 1990 figures.

The following were among the endangered and threatened species imported to the U.S. as trophies in each of the four years (the symbol "E" means the species is endangered, "T" means threatened): Banteng (Bos javanicus)(E), bontebok (Damaliscus dorcas dorcas)(E), western giant eland (Taurotragus derbianus

derbianus)(E), African elephant (Loxodonta africana)(T), Pyrenean ibex (Capra pyrenaica pyrenaica)(E), lechwe (Kobus leche)(T), leopard (Panthera pardus)(E and T)[4], Arabian tahr (Hemitragus jayakari)(E), Hartmann's mountain zebra (Equus zebra hartmannae)(T), and Nile crocodile (Crocodylus niloticus)(E and T). Other endangered and threatened species that were imported during the four year period included: argali (Ovis ammon)(T), gelada baboon (Theropithecus gelada)(T), giant sable antelope (Hippotragus niger variani)(E), aye-aye (Daubentonia madagascariensis)(E), woodland caribou (Rangifer tarandus caribou)(E), Apennine chamois (Rupicapra rupicapra ornata)(E), Malabar large-spotted civet (Viverra megaspila civettina)(E), Philippine deer (Axis porcinus calamianensis)(E), Corsican red deer (Cervus elaphus corsicanus)(E), Formosan sika deer (Cervus nippon taiouanus)(E), McNeill's deer (Cervus elaphus macneilli)(E), North China sika deer (Cervus nippon mandarinus)(E), Persian fallow deer (Dama dama mesopotamica)(E), Shansi sika deer (Cervus nippon grassianus)(E), Arabian gazelle (Gazella gazella)(E), sand gazelle (Gazella subgutturosa marica)(E), Swayne's hartebeest (Alcelaphus buselaphus swaynei)(E), Tora hartebeest (Alcelaphus buselaphus tora)(E), Barbary hyena (Hyaena nyaena barbara)(E), Brown hyena (Hyaena brunnea)(E), black-faced impala (Aepyceros melampus petersi)(E), Eastern grey kangaroo (Macropus giganteus)(T), Red kangaroo (Macropus rufus)(T), Asiatic lion (Panthera leo persica)(E), straight-horned markhor (Capra falconeri jerdoni)(E), serow (Capricornis sumatraensis)(E), Zanzibar suni (Neotragus moschatus moschatus)(E), red wolf (Canis rufus)(E), Cape mountain zebra (Equus zebra zebra)(E), and saltwater crocodile (Crocodylus porosus)(E).

Over 95% of endangered and threatened animals imported as trophies between 1990 and 1993 were mammals. Reptiles comprised between 2%-4% of the remaining endangered and threatened species trophy imports. Most of the endangered and threatened species killed and imported to the U.S. as trophies originated in the southern African nations of Zimbabwe, Botswana, Tanzania, S. Africa, Zambia, and Namibia.

Over 110 species of animals that are protected by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) were among the trophy animals imported to the U.S. between 1990-1993 (Tables 10-13). In 1993, 17,953 animals representing CITES species were imported as trophies (Table 1). This represents an incredible 674% (nearly seven-fold) increase over 1990 figures.

The following were among the top fifteen CITES-protected species imported to the U.S. as trophies in each of the four years (the symbol "I" means CITES Appendix I, "II" means CITES Appendix II, "III" means CITES Appendix III): African lion (II), leopard (I), chacma baboon (II), lechwe (II), sassaby antelope (Dana lunatus)(III), brown bear (Ursus arctos)(I and II), gray wolf (Canis lupus)(I and II), African elephant (I), hippopotamus (Hippopotamus amphibius)(II), and argali (I and II). Other CITES-listed species that were among the top fifteen species imported as trophies during one or more of the four years: green vervet monkey (Cercopithecus aethiops)(II), roan antelope (Hippotragus equinus)(II), Hartmann's mountain zebra (II), sitatunga antelope (Tragelaphus spekei)(III), blue duiker (Cephalophus monticola)(II), crested porcupine

(III), American black bear (II), bontebok (II), Warren's girdled lizard (Cordylus spp)(II), and red tegu (Tupinambis rufescens (II).

Over 97% of CITES-listed species that were imported to the U.S. as trophies between 1990-1993 were mammals. CITES-listed species of birds and reptiles each comprised between 1-2% of trophy imports each year. Most of the CITES-listed species imported as trophies originated in Botswana, Tanzania, South Africa, Zimbabwe, Zambia, Namibia, and Canada.

During the four year period, the U.S. Fish and Wildlife Service did not clear over 7,000 trophy animals for importation into the country (Table 1). Many trophies were seized, re-exported, or abandoned, including African elephants, black-faced impalas, green sea turtles, leopards, ocelots, leopard cats, margay cats, musk deer, douc langur, tiger, grizzly bear, grey wolf, chacma baboon, green vervet monkey, roan antelope, western puma, and African lion (Tables 2-13).

During the four-year period, 20 species that are protected by the ESA but not by CITES, were imported to the U.S. These include the banteng, woodland caribou, Philippine deer, Corsican red deer, Formosan sika deer, McNeill's deer, North China sika deer, Shansi sika deer, western giant eland, Arabian gazelle, sand gazelle, Tora hartebeest, Barbary hyena, Pyrenean ibex, black-faced impala, eastern gray kangaroo, red kangaroo, Zanzibar suni, Arabian tahr, and red wolf. Many other species and populations of species that are desired as trophies, such as cheetah and certain populations of argali sheep, are protected by the ESA, but not by CITES. The ESA is the only law protecting these species and populations from American trophy hunters.

Trophy Imports and the Law

Two important laws, one domestic and one international, govern the import of trophies into the U.S.: the U.S. Endangered Species Act (ESA) and an international treaty known as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Both ESA and CITES have been in existence since the early 1970s. In the U.S., CITES is implemented through the ESA.

The ESA allows importation of endangered and threatened species only for scientific research or enhancement of propagation or survival of the species. However, the Service has broadly interpreted the term "enhancement" to include a variety of trophy hunting activities.

For example, the Service has decided that "enhancement of propagation or survival" of wildlife held in "captivity" includes so-called "culling" of captive populations. What this means in practical terms is that if an endangered or threatened species is held on a "ranch," then American hunters can kill (or "cull") the endangered or threatened species on the ranch and import the trophy. In general, the trophy hunter would have

to receive permission from the Service before they would be allowed to import a trophy of an endangered or threatened species killed in captivity.

This interpretation of the ESA is used very frequently to justify the importation of trophies of endangered and threatened species. For example, the African antelope known as a bontebok, is highly endangered (only about 1,000 exist in the wild). However, the species is also extensively raised in captive herds on game ranches in South Africa. According to the U.S. Fish and Wildlife Service[5], the reason that they allow bontebok trophies to be imported to the U.S. is that the South African Department of Nature and Environmental Conservation "strictly enforces a management plan for the survival and enhancement of the species and has concluded that properly controlled culling of excess animals from captive herds will ultimately benefit the herd ... In addition, it is felt that the management program provides an incentive to ranchers and other private landowners, not only to tolerate, but to maintain bontebok herds and habitat." In 1993, 100 bontebok trophies were imported by Americans who killed these relatively tame animals on South African game ranches that have met the Service's approval.

The Service has also adopted a broad interpretation of what activities enhance the survival of a species. For example, the Service allows American trophy hunters to import African elephant trophies because a country of origin, Tanzania for example, states that some of the money the country earns from trophy hunting is used for anti-poaching activities. However, it is important to note that the Service does not require proof that money that a country earns from trophy fees actually enhances the survival of the species. While there is little doubt that foreign governments earn money by selling endangered and threatened animals to American trophy hunters, there is little to no proof that this money actually enhances the survival of the species.

In addition to Service interpretations of the ESA language that benefit trophy hunters, the ESA itself contains language that eases the importation of trophies of endangered and threatened species.

For example, the ESA does not protect hybrids of endangered and threatened species. Such hybrids may be imported as trophies without obtaining a permit to do so from the Service. Thus, the Service considers banteng killed in Australia to be feral descendants of hybrids between banteng, an endangered bovine animal indigenous to Asia, and domestic cattle. The Service, therefore, does not require an import permit for banteng killed and imported from Australia.[6]

Also, under ESA section 9(c)(2), trophy hunters may import any threatened species that is also listed on CITES Appendix II -- such as gelada baboons, Nile crocodiles from eleven countries, and Hartmann's mountain zebras -- without obtaining permission from the Service. The ESA states, in section 9(c)(2) that such imports are assumed to be in compliance with the ESA because a CITES export permit is required from the country of origin, but the failure of exporting countries to adequately meet the export requirements is well-known. Most countries issue CITES export permits without

making any determination that the exportation of the animal will not cause harm to wild populations, as is required by CITES.

Presumably due to serious pressure from trophy-hunting advocacy organizations, the Clinton Administration, like previous administrations, supports trophy hunting and has often made special exemptions for trophy hunters to kill endangered species. In November 1994, Secretary of the Interior Bruce Babbitt opined to a crowd gathered at the CITES conference that trophy hunting in Africa provides a valuable source of income and instills a sense of conservation awareness in local communities. Three months later, he supported the auctioning of two permits to import sport-hunted argali sheep in Kyrgystan -- a highly endangered species in that country -- that had been granted to a pro-safari-hunting organization called Safari Club International (SCI). Babbitt stated, "These auctions promise much needed hard currency benefits to argali habitat and enlist area resident in on-the-ground efforts to conserve the species."[7] We have yet to see the proof that the money eamed from the auction sale has been used to provide any tangible benefit to argali in that country.

The Administration's attitude toward trophy hunting is also evident in recent decisions pertaining to the hunting of African elephants, a threatened species. Earlier this decade, trophy hunted elephants could only be imported to the U.S. from two countries (Zimbabwe and South Africa); now they can be imported from six (add Tanzania, Namibia, Cameroon, and Zambia) and the number of countries may be increasing. Botswana has announced that it will allow trophy hunting of elephants to resume, after more than a decade of safety. Kenya, is also considering opening up trophy hunting of elephants and other animals, after a 20-year ban on such activities. Although the Service continues to allow the import of elephant trophies from more and more countries based on promises that the money generated from trophy hunting benefits the species, very little evidence supports this contention.

In fact, it is easy for trophy hunters to get permits to kill and import trophies of endangered and threatened species. The permits, which cost only $25, are handed out like common hunting permits for white-tailed deer or ducks in the U.S., many within a week after the application is received. The U.S. Fish and Wildlife Service assumes that not all permits are going to be filled, arguing that just having the permit is enough for many people, and that many people get the permit thinking that they will book a safari, but are for one reason or another unable to follow through.

Another recent example of the Service's leniency toward trophy hunting, even in the face of evidence of harm caused by the activity, and irregularities involved, occurred in October 1994 when American hunter Darrel Mitchell, an executive from West Springfield, Massachusetts, killed an elephant in Tanzania near the border with Kenya. This area is technically off-limits to hunters, according to a 1988 agreement between the two countries: Tanzania violated the spirit of the agreement by permitting hunts to occur there. The elephant turned out to be 47 year old "RBG", a bull elephant who had been studied for eighteen years by biologists in Kenya (where hunting is banned) and who had been accustomed to close approach by humans. RBG had crossed over

into Tanzania from Amboseli National Park in Kenya, and Mitchell, apprised of the big bull's vulnerable location, killed him. Bulls with big tusks, like RBG, were almost all exterminated during the days of the international ivory trade, which was severely curtailed through international action in 1989. When bulls like RBG become suddenly available to hunters, the word spreads quickly. According to Tanzanian government documents and elephant researchers, Mitchell killed the elephant before he applied for a U.S. permit to import his trophy from Tanzania. Killing an elephant without first obtaining a U.S. import permit is normally a violation of Tanzanian hunting regulations. Yet, in only three working days, Mitchell obtained a permit from the U.S. Fish and Wildlife Service to import his trophy, some twelve days after RBG was killed. It was also discovered that Tanzania had not conducted a survey of the elephant population in the area where RBG was killed in over fifteen years. In the wake of this scandal, The HSUS was able to stop the Service from issuing permits to import elephant trophies from Tanzania for a five-month period. However, the SCI lobbied the Service to resume imports and the Service capitulated in May. Now, almost fifty people have received permission from the Service to import elephant trophies from Tanzania.

CITES govems the international commercial trade in species that are listed on its Appendices. Species listed on CITES Appendix I are considered threatened with extinction, and either are or may be affected by trade. Appendix I species are banned from international commercial trade. Species listed on CITES Appendix II are those that are not necessarily now threatened with extinction but may become so unless trade is subject to strict regulation to avoid utilization incompatible with their survival. International commercial trade in Appendix II species is allowed, but is supposed to be regulated. Exporting countries are allowed to issue CITES Appendix II export permits only when they have determined that the export will not be detrimental to the species. Species listed on CITES Appendix III are those identified by any Party as needing cooperation of other Parties in control of its trade.

Species that are threatened under the ESA and on CITES Appendix II do not require an import permit, as stated in ESA Section 9(c)(2), but do require the CITES export permit from the country of origin. However, if the species is endangered under the ESA, the import requires a permit from the U.S. Fish and Wildlife Service issued in accordance with the provisions of the ESA, and a CITES export permit from the country of origin. Species on Appendix III require the Party that requested the Appendix III listing to issue a CITES export permit; other Parties must issue only a certificate of origin..

Trophies of species that are included on CITES Appendix I may be imported to the U.S. only after the U.S. has issued a CITES import permit and the country of origin has issued a CITES export permit. To issue a CITES import permit, the U.S. Fish and Wildlife Service must determine that the import will be for purposes that are not detrimental to the survival of the species involved and will not be used for primarily commercial purposes.

The Trophy Hunting Industry

Trophy hunting is a huge international industry, worth many billions of dollars annually. The industry is worth $20 million in Tanzania alone.[8] There are magazines that describe hunting adventures. There are companies, called "outfitters", that organize hunts for clients. There are manufacturers of guns, bows and arrows, safari clothing. There are taxidermists, shipping companies, airlines and companies that specialize in insuring trophies against fire and theft.

It is not cheap to engage in the hobby of killing foreign animals, but many of the clients of the trophy hunting industry are wealthy, and they can afford it. Reportedly, 55% of the members of the elitist trophy hunting organization, Safari Club International, have incomes exceeding $100,000 per year.[9] Many are doctors, lawyers, and executives. The president of SCI, John Jackson, a Louisiana lawyer, has reportedly spent over $500,000 hunting elephants.[10]

The cost of trophy hunting safaris varies tremendously, depending on the country, the species killed, the accommodations, and the length of the hunt. But it would not be unusual at all for an American trophy hunter to spend between $35,000 and $60,000 on an African hunting safari. And many trophy hunters take safaris repeatedly to kill new animals, or use different weapons, or hunt in a different country.

There are a few myths about safari hunting that need to be dispelled. First, when Americans go to Africa on a trophy hunting safari, they are not generally "roughing" it. The outfitters provide the client with an array of comforts. The hunters sleep in "tents" that often are equipped with individual flush toilets and hot water showers. The beds are raised off the ground and have mattresses. The outfitter has staff members who wash and iron the hunter's clothes daily and clean their "room." There is a cook who serves three meals a day, in some cases, gourmet meals. One Italian outfitter, Federico Gellini who operates in Tanzania, offers "exclusive camps ... the favorite hunting area of Ernest Hemingway ... We have first class professional hunters, luxury camps, Italian cuisine and the best hunting areas."[11] One hunter who hunted with this outfitter said that the camp had a "waiter dressed in crisp whites carrying fresh drinks."[12]

The hunter client is accompanied by a "professional hunter" as well as one or two assistants. Hunter clients often hire another company to video-tape their entire hunt. The professional hunter tracks the animals, if tracking is needed, and the client merely follows in his footsteps. The professional hunter tells the client which animal to shoot, sometimes even helping the client to line up his shot. If the client hunter does not kill the animal on the first shot, the professional hunter delivers a second shot and a third if necessary. After the kill, the hunter client does not even take part in cleaning the carcass. The professional hunter's assistants remove the parts of the animal the client wants as a trophy and haul them back to camp, where they are further processed by the assistants. The remaining parts of the carcass, except in some circumstances,

are left to rot. In essence, the role of the hunter client is to pay the money and pull the trigger.

The second myth is that American trophy hunters only hunt in the dangerous "bush". On the contrary, many American trophy hunters kill animals on foreign game ranches. In some countries, like South Africa, the vast majority of hunting occurs on privately owned game ranches, which vary in size from 4,000 acres to 150,000 acres.[13] Animals who live on game ranches are typically accustomed to humans and are fenced and unable to escape. There are a limited number of known watering holes and salt licks that hunters can position themselves at, and there are fences that animals can be driven up against. Animals on game ranches are easy targets. Game ranch hunting is preferred by hunter clients who want a relaxing hunting experience, or those who want to practice killing relatively tame animals at close range, or those who use unconventional weapons like bows or handguns. Many hunters bring the whole family to the ranch, where they can enjoy a family vacation, staying at the hotels operated by the game ranches. The hotels have luxury accommodations, including swimming pools and gourmet food. Game ranches stock their land with animals from the wild. One 28,000 acre hunting ranch located 180 miles from Johannesburg, South Africa, offers hunting of 30 species, including leopard and rhino.[14]

Given this level of pampering, it is easy to see how the price of a trophy hunting safari can climb into the tens of thousands of dollars very quickly.

The price of a popular elephant and leopard trophy hunting safari in Zimbabwe[15] would cost an American approximately $42,000. This would include a $9,000 elephant trophy fee, a $2,750 leopard trophy fee, and a $75 fee to kill an impala that will be used as bait for the leopard. The outfitter's fee for the 21 day safari would be $18,900. Charter flights in Zimbabwe, field preparation of trophies and shipment of trophies to the U.S. would cost about $4,500. Round-trip first class airfare and accommodations before and after the hunt would be about $6,500. The estimate does not include the common 20% gratuities, taxes, or the cost of mounting the trophies once they are shipped to the U.S. This could add another $10,000 to the cost of the safari. Many families go on safari together[16] and this can increase the price of a safari dramatically.

The cost of killing animals on a game ranch can be just as high if the species is rare. One South African ranch placed a classified ad in Safari Times, offering a "huge white rhino" claiming that there are perhaps only one or two other bulls of this size in existence today. Total cost, including the trophy fee and ten hunting days, was advertised for $21,000 (not including airfare, taxidermy, taxes and gratuity).[17] Kido Safaris of South Africa offers 14 "exotics" on its game ranch, including the scimitar horned oryx for $4,500, the addax for $4,700, the lama for $1,650, letchwe Kafue $1,600, nilgai $1,650, and the Pere David deer $1,650 (not including the daily rate and other expenses).[18]

Of course, the goal of trophy hunting, as described by one trophy hunting outfitter, is to get a "muy macho wall hanger".[19] The cost of taxidermy for the trophy hunted animals depends of the type of mount and the size of the animal. Jonas Bros. Taxidermy of Colorado[20] charges $2,395 for a life-size leopard mount, $3,075 for a shoulder mount of a white rhino, $1,200 to make a zebra skin rug; $1,950 for a whole mount of a baboon; and $2,475 for a giraffe mounted at the shoulder. They can also make "attractive novelties" out of animal parts, such as a cape buffalo "pizzle cane" for $225; scrotum pouches for $140; a warthog skin beer mug for $125; a 1' Nyala table lamp for $210; rhino feet ashtrays for $330; an elephant foot footstool for $595; a map of Africa on an elephant ear for $925; or an elephant ear coffee table for $1,525. Prices do not include shipping.

Where Does the Money Go? Third Myth About Trophy Hunting

Despite claims to the contrary, most of the money spent by American trophy hunters goes to hunting outfitters based in the U.S. or other developed nations, not to indigenous people who live in the vicinity of where the animal was killed or to foreign governments for support of programs that enhance the conservation of the species. In fact, most of the money paid by the hunter client goes directly to the hunting outfitters or the owners of game ranches, who are often millionaires themselves. The outfitters, usually based in the U.S., Europe, or South Africa, are paid in U.S. currency. An average outfitter earns about $400,000 per year if he has 20 clients.[21] On a 21-day leopard safari in Tanzania[22], worth approximately $42,678 (all inclusive), the hunting outfitter would earn $24,990 (58.6%), while $2,100 (4.9%) would go to the government for "protection and conservation of wildlife". The remaining money would go into a general government fund, and for packing trophies, airfare, trophy shipments and charter flights. Just because a government says it is going to put money earned from trophy hunting into "protection and conservation of wildlife," does not mean that money will actually go to such activities or enhance the survival of the species the hunter kills, or that it will do anything other than enter the treasury of the country in question.

Nevertheless, the fact that some amount of money, however small in comparison with the total amount of money spent on the hunt, makes its way to the governments of these countries, often means that they will condone trophy hunting. This "money for killing privileges" strategy has paid off for the trophy hunting industry in terms of expansion of trophy hunting opportunities, which translates into growth of the trophy hunting industry.

The trouble, in most cases, is that cash-poor governments are selling their wildlife to trophy hunters even though they do not know the effect of hunting on the species that is being hunted. For example, elephant biologists have argued that, based on the reproductive biology of elephants, elephant populations that have been subjected to heavy poaching are extremely sensitive to the offtake of mature males, and may go into a further decline due to trophy hunting. In many countries that allow elephant hunting, such as Tanzania, surveys of populations of elephants in areas where they

are hunted have not been conducted in over fifteen years.[23] But facts like these have not stopped more and more countries from trying to cash in on their elephants by selling them to American trophy hunters. Rather than basing their decisions on the needs of the animal species, it is clear that countries are opening up hunting strictly for economic purposes. As Lt. Gen. C.S. Tembo, Zambia's Minister of Tourism, noted "our policies must encourage investment on the basis of free market principles so that the true market value of safari hunting is realized."[24]

Economic incentives do not generally aid wildlife conservation. On the contrary, putting a price on wildlife is an incentive to sell it. For example, in Tanzania, the government has accommodated safari companies by assigning each a quota and a parcel of land every year.[25] As the number of safari companies has risen over the years, the parcels have grown smaller, while the quotas have remained the same. Wildlife has been completely exterminated in one hunting block, which the Tanzanian government allocated to the United Arab Emirates as a private hunting ground. Local economies based on selling wildlife may soon out-strip the ability of the wildlife to reproduce and sustain itself. Faced with poverty or starvation, people may be reluctant to make changes to their use practices even though they realize the source of their income will be eventually eliminated.

The few instances where money from trophy hunting has been demonstrated to bring money into a local community, and where the community has then agreed to tolerate wildlife and their habitat needs, have occurred when a huge and expensive-to-maintain infrastructure has been developed to ensure that the relationship between trophy hunting money and conservation actually happens. The two programs most commonly referred to in this context are the CAMPFIRE program in Zimbabwe and the ADMADE program in Zambia. Both of these programs are based on the premise that if people who live in the vicinity of wildlife see that the wildlife has monetary value, through selling the hunting rights to foreign trophy hunters, then the people will preserve the wildlife and its habitat instead of converting the habitat to agriculture and eliminating the wildlife in the process. To their credit, both CAMPFIRE and ADMADE have accomplished this goal on a local level.

Trophy hunting advocacy organizations, like SCI, use CAMPFIRE and ADMADE to demonstrate that trophy hunting can have positive benefits to wildlife, assuming that what may be true for two programs is true all over the continent. This could not be further from the truth. In fact, even in Zimbabwe and Zambia, trophy hunting outside of these programs gives no tangible benefits to local people or to wildlife.

Moreover, the huge management infrastructure set up to run CAMPFIRE and ADMADE is not funded by trophy hunting, but by American taxpayers. Funding for CAMPFIRE has come from a six-year (1989-1994) grant of $7.6 million from the U.S. Agency for International Development (USAID). Similarly, USAID funded the six year (1990-1995) ADMADE project for $4.8 million.[26] The reality is that U.S. taxpayers have subsidized the trophy hunting industry to the tune of at least $2 million per year over the last six years. It is largely because of this subsidy that any money actually

paid by trophy hunters is making its way back into local communities and is possibly helping to provide some tangible conservation benefit to species of wildlife that live in the vicinity of those communities. If the U.S. Government is going to help people, it should do so in ways which capitalize on the beauty of living wildlife rather than support one based on the death of innocent creatures.

Safari Club International

By far the most prominent trophy hunting advocacy organization in the world is Safari Club International (SCI). Founded in 1971, SCI is based in Tuscon, Arizona, but has 114 chapters in 15 countries. It has a distinctively wealthy membership of 22,000 -- many of whom are doctors, lawyers, and executives -- 55% of which have an annual income exceeding $100,000 per year. SCI has an annual budget of $7.5 million and a paid staff of 40. Its chief lobbyist is former Montana representative Ron Marlene, who distinguished himself as an extreme anti-environmentalist during his years in Congress. Its stated purpose is to conserve wildlife and protect the rights of hunters. SCI operates an Apprentice Hunter's Program that promotes trophy hunting to children aged 12-17; the program offers the children a week-long lesson in wildlife killing at a Texas game ranch. SCI also has a program to assist disabled people who want to kill animals.

SCI says it supports "conservation projects" in a number of countries, but these projects focus on expansion of hunting privileges in those countries. In 1993, SCI spent $32,500 out of its $7.5 million budget on international "scientific studies, conservation workshops, (and) program assistance."[27]

Although they often characterize themselves as a conservation organization, SCI is doing more harm than good by supporting two activities that have been demonstrated to diminish biodiversity and are harmful to the conservation of wild populations of animals: game ranching and the maintenance of introduced animal populations, such as banteng in Australia, for hunting purposes. Game ranching has had a negative impact on wild populations because these operations act as reservoirs for disease that can quickly spread to wild populations.[28] Similarly, it has been demonstrated that introduced species compete with indigenous species for food and habitat and spread disease into indigenous species populations. Moreover, SCI continues to support the notion of killing for trophy as a form of recreation, which makes a mockery of a true conservation and humane ethics.

SCI's annual conventions attract 10,000 would-be trophy hunters, despite a $265 attendance fee. At the 1995 annual convention, there were 610 exhibiters and hunt outfitters. Hunts are sold at the SCI's convention, like printers are sold at a computer convention. Featured speakers and registered celebrity guests at their 1995 convention included: Interior Secretary Bruce Babbitt; General Norman Schwarzkopf; former U.S. Vice President Dan Quayle; Rep. Bill Brewster (D-OK); Rep. Don Young (R-AK); Rep. Jack Fields (R-TX, SCI Legislator of the Year, recognized for his work in

amending the U.S. Marine Mammal Protection Act to allow America's hunters to import polar bear trophies from Canada; he is the first congressman to receive the award twice)[29]; Rep. Billy Tauzin (D-LA); Rep. Collin Peterson (D-MN); Rep. Richard Pombo (R-CA); Rep. James Barcia (D-MI); actor Steven Seagal; entertainers Glen Campbell and Eddie Rabbitt; General Chuck Yeager; South African author Wilbur Smith; Muhidin Ahamad Mdolanga, Director of Wildlife, Tanzania; Juma Hanad Omar, Minister of Tourism, Natural Resources and Environment for Tanzania (Tanzania received the SCI Conservation Award); and a delegation representing Zambian president F.J.T. Chiluba and the Republic of Zambia.

SCI is an enabler of the trophy hunting industry. Through its publications and conventions, it titillates people into booking more and more trophy hunts and helps to hook up money-carrying trophy hunting clients with the industry. The thick, glossy, bimonthly magazine of the SCI, Safari, contains page after page of advertisements for trophy hunts; many have grisly photographs of the hunter with a freshly killed leopard draped over his shoulders like a stole, or a hunter, gun in hand, with his foot resting on a dead elephant. The magazine also contains romantic, Hemingway-esque stories of hunters' experiences stalking and killing exotic animals that are viewed, ironically, as dangerous to the hunter; stories of the near misses, the one-shot kills, the hours or days spent stalking a wounded animal are told in all their glory and in all their gory detail. Through its lobbying efforts, both in the U.S. and abroad, it has expanded trophy hunting opportunities. But, by far, the single most important thing that SCI has done for the trophy hunting industry is to conduct its elite trophy competitions.

The competitions provide those who can afford trophy hunting with a playing field so that they can "compete" with others of their kind to kill the most animals of a particular type -- for example, all the bear species of the world -- or the biggest animals of each species. The competitions create a driving desire in the hunters to book more hunts so that they can upgrade entries into the next higher levels. Kenneth Winters writes in Safari (June 1994), "what does a man my age do when the competitiveness of athletics and the adventure of the military have long passed? For me, the answer has been to refocus my energies on big game hunting, and how else better to do that than through Safari Club International?" He goes on to say that SCI's World Hunting Awards program "allows me the opportunity to combine my love of adventure with a renewed competitive spirit."[30]

SCI's award programs encourage hunters to hunt more, which is of course the real purpose that the competitions were developed by SCI founder C.J. McElroy. By encouraging more trophy hunting, the SCI award programs have enhanced the growth of the trophy hunting industry. For example, in Tanzania alone, the number of hunting outfitters has increased from 9 in 1984, to 21 in 1991, to 41 in 1994.[31] So, even more important than providing fun competition for its members, SCI award programs have caused the trophy hunting industry to boom.

There are 26 categories of SCI trophy competitions that are divided into two general types: grand slams and inner circles.

The nine "grand slams" are: the Africa Big Five (leopard, lion, elephant, buffalo, rhino); Cats of the World (African lion, African leopard, cougar, lynx, and a small African cat or bobcat); Bears of the World (polar bear, Alaska brown bear, grizzly bear, Eurasian brown bear (Europe), Eurasian Brown bear (Asia), mideastern brown bear); North American 29 (including all bears, bison, all sheep, moose, caribou, and deer); North American Wild Sheep; North American Caribou; Moose of the World; North American Deer; and White-tailed Deer. In order to achieve a grand slam, you must kill between 4 and 29 animals, depending on the slam.

The 16 "inner circles" awards include: Trophy Animals of Africa; Spiral-Horned Animals of Africa; Trophy Animals of North America; Introduced Trophy Animals of North America; Red Deer/Wapiti; Trophy Animals of South America; Antlered Game Animals of the Americas; Trophy Animals of Europe; Trophy Animals of Asia; Trophy Animals of the South Pacific; Wild Goats of the World; Wild Sheep of the World; Wild Oxen of the World; and Antlered Animals of the World. In addition, there is the "Top Ten Award" for those hunters whose trophies were big enough to have made it into the top ten of the SCI record book in any category, and a "Hunting Achievement Award", which, to win at the highest level, diamond, would require that 125 animals be killed and that they are big enough to make it into the record book. Trophies are measured by any of 3,000 official SCI trophy measurers, who have completed classes on the subject. Top ten awards and inner circle awards are offered at five basic levels, from lowest to highest, depending on the number of trophies needed to make the level: copper, bronze, silver, gold, diamond.

Finally, there is the "Pinnacle of Achievement" award. To reach the first pinnacle, you must have achieved any 6 of 25 inner circles or grand slams, killing at least 20 animals; to reach the second pinnacle, you must have achieved 5 of 16 inner circles at the silver level, killing at least 34 animals; to reach the third pinnacle, you must have achieved 4 of 16 inner circles at the gold level, killing at least 45 animals; and to reach the fourth pinnacle, you must have achieved 3 of 16 inner circles at the gold level and 1 at the diamond level, killing at least 29 animals. To say that these are competitions which relish death would be to understate the obvious.

In order for a hunter to win these competitions in all 26 categories at the highest level, he would have to kill at least 322 animals, and spend literally millions of dollars on trophy hunting safaris. Indeed, a trophy hunting safari in Zambia to get the "Africa Big Five" would cost at least $85,000.[32] The super slam of sheep would cost $185,000 to complete.[33]

The winner of the 1995 Safari Club International Hunting Award, Gerald L. Wamock M.D., a radiologist from Portland, Oregon, has killed 278 different species (and an unknown number of individual animals), has 285 trophies in the SCI Record Book, and has taken 228 major hunting trips. He has made all of SCI's Inner Circles at the Diamond Level, and nine grand slam awards. He has the fourth pinnacle and crowning achievement award. Now he is going back to kill the same animals with a muzzle loader.[34]

One arguable consequence is that it may drive some people to commit illegal or unethical activities just to win the top award -- which is not to say that SCI intends for its competitions to have that consequence or that SCI is responsible for the illegal acts of its members. Nevertheless, that SCI's competitions have this effect is acknowledged by the larger hunting community. For example, an article in the hunting magazine Sports Afield (February 1995), states that the SCI competitions "have spurred some members to stretch the boundaries of ethical hunting behavior."

Examples abound of unethical, un-sportsmanlike behavior by American big game hunters overseas. For example, lions and leopards are lured to bait set by the hunters, who shoot the cats from a blind at night.[35] The bait is often an impala or zebra that has been hung from a tree. Some governments have reduced trophy fees for killing animals that are to be used as bait for hunting lions and leopards. Baiting leopards and lions often occurs on the periphery of National Parks; the lions and leopards are drawn out of the parks, where they are protected from hunting, into the hunter's lair. Since the killing is done at night, lights are used to stun the cats when they come to the bait, and also to provide the hunter with the light he needs. Many leopards and lions are wounded in these situations, and crawl off into the brush. Because it is night, the hunters cannot follow the leopard or lion and kill it.[36] In Botswana, for example, it has been estimated that about 25% of all shot animals are wounded but not caught.[37] Trophy hunting outfitters acknowledge that many animals are wounded and are never recovered.

Animals are often shot by trophy hunters from vehicles.[38] Even though this activity is illegal in many countries, outfitters will make adjustments as needed to make up for the poor health of their clients.

Polar bears are hunted with sled dogs that, having brought the hunter to the bear, are cut loose to bring the bear to bay, at which time it is shot.[39] Grizzly bears are hunted with snowmobiles in the spring and black bears are hunted over bait or with radio-collared dogs.

Elephants are often hunted on the periphery of National Parks, where they are protected from hunters. Outfitters always make hunter clients kill an elephant first, before killing other animals in the area, because the elephants are smart and at the sound of gunfire, they run back into the National Park.

In the quest for a new experience, trophy hunters are, more and more, using unconventional weapons like bows, muzzle loaders, and handguns, which often do not result in a quick kill. In once instance, it took a bow hunter five arrows, and several hours, to kill a wounded, frightened elephant.[40] The details of one elephant killed with a bow in Mozambique were provided in a recent article in Safari. The first arrow hit the elephant in the spleen and when he ran off, the hunters retumed to camp. Later, they found the bull in a herd. After breaking up the herd with an overhead gun shot, a second arrow was put into the elephant's heart. A third arrow hit the elephant in the femoral artery at the back leg. A fourth arrow was put into the elephant's chest,

apparently severing an aorta, but the elephant still tried to walk away. The fifth and final arrow was put behind the elephant's shoulder and the elephant fell to the ground, dead.

Many hunters are not even interested in fair chase. The Kwalata Game Ranch in South Africa[41] offers bowhunting from its shaded blinds which are situated near water holes and salt licks to "ensure success throughout the hunt." Bow hunters are "collected for lunch." For their comfort, they are issued "two blankets, radio, breakfast pack, juice or drinks of your choice as well as a urine bottle." Accommodations at the ranch include well-appointed guest rooms, pool, a well-stocked bar, and food is "par excellence". Similarly, the Moshate Ranch in South Africa[42], whose brochure states that it is "ideally suited for the bowhunter with 3 blinds strategically over-looking waterholes in addition to the river section.". Game ranches often provide dogs to help locate animals that have been wounded by hunters.

Numerous wild animal populations are threatened by the unethical and illegal behavior of trophy hunters. According to one account by world-famous wildlife film-maker Derek Joubert,[43] who makes his home in Botswana, "men shoot from the backs of vehicles into buffalo herds, wounding animals and leaving them to die while they chase after the herd to shoot another. Lions and leopards are sometimes wounded, and when they run into thickets a fire is set to flush them out. With a few exceptions, every hunter who has used this area has broken the law." In the Linyanti area of northern Botswana, where Joubert knew 120 lions in the early 1980s, he saw only 36 in late 1992. Now, few cubs are seen; in fact, none have been seen in three years. Joubert estimates that 3,000 lions have been killed in the area in 10 years. When males are killed, their partners lose their territory and cubs die. Every year, all the available pride males were shot along the Linyanti river front. Killing males left females with an uphill struggle to ward off hyenas from their kills. The stability of the pride broke down and breeding stopped. Joubert reports that animal numbers today in Northwestern Botswana are only one-tenth what they were in the 1970s. Buffalo have declined steadily from about 250,000 in the 1970s to only 500 today. According to Joubert, "we estimate that various safari companies have at times shot up to 25% more than their quota by wounding animals and not following up." Joubert said the alteration of hunting licenses had been confirmed and ten times the number of animals allowed under the license quota had been removed.

In a 1991 expose of the trophy hunting industry,[44] author Ted Williams related perhaps the best known case of illegal activities by American trophy hunters, which came to light as part of a four year undercover investigation that broke up a $100 million poaching ring in nineteen states. Even back then, the SCI was complaining about the difficulty their constituents had in obtaining permission to import trophies of endangered species. But certain hunters found a way around the law.

The case revolved around John Funderburg, a former curator of the North Carolina Museum of Natural Sciences in Raleigh. Federal investigators discovered that trophy hunters had donated more than 1,800 specimens, with an alleged value of $8.4

million, to the museum. In return, the trophy hunters got a tax break for donating the trophies, which occasionally moved out of the museum right back to the hunters. Some of the trophy hunters were able to kill species legally off-limits to trophy hunters because they had been given "associate curator" status by Funderburg, and the trophies were imported ostensibly for scientific purposes.[45] Funderburg got probation and a $5000 fine for agreeing to cooperate with the government. A Chicago appraiser, R. Bruce Duncan, who had introduced trophy hunters to Funderburg, got 10 months in prison and a $30,000 fine.[46]

Carolyn Williams, who was the first woman to make a grand slam of all 29 North American big game animals and who received SCI's Outstanding Hunting Achievement award in 1988, desperately needed a walrus to complete another grand slam. Federal agents discovered a letter in her possession from Funderburg promising to help her get one even though they are protected from trophy hunters by the Marine Mammal Protection Act (MMPA). Williams admitted to a federal agent that she already had to smuggle a polar bear hide back into the U.S. because its illegal to import them under the MMPA. She also admitted her intention, with Funderburg's help, to get her walrus too, by donating it to a museum, for ostensibly "scientific purposes."[47]

Paul Asper, SCI member and owner of his own museum, was found guilty of violating the ESA. He had imported a Jentink's duiker from Liberia, a black-faced impala from Namibia, two goral and two serrow from Nepal, and two northern huemul from Peru, all of which were exhibited at his museum. He was sentenced to 2.5 years in prison and fined $195,946 for nine felonies and seven misdemeanors. He had actually had a history of illegal activities. In 1976 he had attempted to smuggle into the U.S. skins of Nile crocodile and leopard, both hidden in the skin of an elephant, for which he was fined a $1200 administrative fee by the U.S. Fish and Wildlife Service. He reportedly has killed 650 animals in his lifetime.[48]

Richard Mitchell, a U.S. Fish and Wildlife Service employee, advised SCI director at large Paul Broun of how SCI could manipulate natural history museums and use the foreign museum authorities to import endangered species they had killed. Mitchell's idea, expressed in a letter to Broun, was that SCI members who wanted to hunt endangered species could give the trophies to a museum in China and Pakistan and then set up a swap with SCI's museum in Tuscon, Az. The trophies would eventually make it back to the original hunter.[49] But that's not all. In 1988, Mitchell helped three hunters import four Ovis ammon hodgsoni, at that time an endangered subspecies of argali sheep.[50] The three hunters were arrested and the sheep confiscated. It is interesting to note, that five years later, in 1993, under SCI pressure, the U.S. Fish and Wildlife Service decided to down-list the species O. ammon from endangered to threatened. In 1993, Mitchell was convicted of smuggling animal skins into the U.S., a misdemeanor. In the end, he got 2 years probation and a $1000 fine.[51]

SCI Hall of Fame inductee Andrew Samuels admitted to federal agents that he had killed endangered foreign game including the Sulieman markhor, Punjab urial,

Jentink's duiker, goral, black-faced impala, ocelot, and jaguar and that he was going to smuggle the trophies into the U.S. by falsifying shipping documents. He was certain that his plan would work because he considered the U.S. Fish and Wildlife Service to be incompetent. Under a plea agreement he had to pay $100,000 in fines, spend thirty days in jail, perform 800 hours of community service, and forfeit his world hunting rights for three years.[52]

Just recently, big game hunter and SCI member Ronald Coleman was convicted and fined $200,000 for poaching a rare desert bighorn sheep in Mexico and smuggling the hide and horns into the U.S.[53]

Trophy hunters also seem to be violating U.S. Customs regulations, when they undervalue their trophy imports, which allows them to avoid paying Customs import taxes. Of the 335 elephants that were killed in Zimbabwe and imported to the U.S. in 1993, 82% (276) of the elephant trophy imports were declared by the hunter-importer to have a value of zero. The remainder were valued at between $25 and $42,000. The trophy fee for killing an elephant in Zimbabwe is US$9000.[54] The costs associated with elephant hunting in Zimbabwe in 1993 adds up to more than $3 million. Yet, the combined hunter-declared value of elephant trophies imported from Zimbabwe in 1993 was only $120,991.

The 104th Congress Under Pressure to Ease Import of Trophies of Endangered and Threatened Species

During the 103rd Congress, the SCI, through its PAC donated $47,650 to members of Congress. One of Congress' most avid hunters, Representative Don Young (R-AK), who received $4500 over the same period, is chairman of the House Resource Committee. Young's Committee is currently considering reauthorization of the U.S. Endangered Species Act (ESA). Last year, during the reauthorization of the Marine Mammal Protection Act (MMPA), Representative Young led a successful campaign to legalize the importation of trophy-hunted polar bears.

Now, the ESA is up for reathorization and Representative Young is gearing up to provide more exemptions than already exist for the import of trophies. In recent months, Congressman Young has been lobbied by four foreign governments (Zimbabwe, Botswana, Malawi, and Namibia) to eliminate foreign species from the ESA or, at least, to exempt the importation of trophy hunted endangered and threatened species from the ESA. The countries, members of the Southern African Centre for Ivory Marketing (SACIM), claim that the ESA is infringing on their sovereign rights to manage their wildlife as they see fit, in this case to sell it to American trophy hunters. They are not as much interested in protecting wild animal populations from over-use as they are in making foreign currency.

The U.S. is one of the 128 signatory nations to CITES. CITES expressly allows nations to have "stricter domestic measures" to protect wildlife. The ESA is such a

measure. The ESA provides protection from sport hunting to endangered and threatened species by allowing sport-hunted trophy imports only when it can be demonstrated that killing the animal will, in fact, enhance the survival of the species. This is a reasonable requirement that is in the best interest of the animal populations. In fact, as described in this report, the U.S. Fish and Wildlife Service is extremely lenient in granting permits for the importation of trophy hunted foreign endangered and threatened species. In most cases, trophy hunters do not need to obtain permission from the Service to import foreign animal trophies. In many other cases, the species desired by trophy hunters are not protected by CITES, and the ESA is the only law that requires some level of assurance that American trophy hunting is not causing a detriment to wild populations of animals. The Service already grants trophy import permits far more often than is warranted. If the ESA is severely weakened, Americans will be allowed to hunt even more threatened and endangered animals without restriction.

With the many threats facing wildlife populations today -- habitat destruction, pollution, poaching -- we need a strong ESA to ensure that Americans are not contributing to the further decline of these magnificent species by killing them as trophies

Recommendations

- The 104th Congress should reauthorize a strong ESA that does not weaken protection for foreign endangered and threatened species;
- The 104th Congress should ensure that funds from the U.S. Agency for International Development are not spent subsidizing American trophy hunting of endangered and threatened species or in setting up local economies based on wildlife sale which will not be sustainable in the long run for the people or the wildlife;
- The Clinton Administration should abandon its unqualified support for trophy hunting;
- The U.S. Fish and Wildlife Service should cease granting permits to import trophies of foreign endangered and threatened species unless there is positive proof that trophy hunting enhances the survival of the species, as required by the ESA.

Endnotes

1. Bill Quimby, Shumbah! Poro! Shumbah! Poro!, SAFARI 21:60 (1995), explanatory statements in brackets added.

2. Anonymous, Killing Elephants Outrages Both Sides, POST AND COURIER, 19 December, 1994.

3. The raw LEMIS data was obtained on May 23, 1994 from the U.S. Fish and Wildlife Service, through a Freedom of Information Act request. The Service's data is based on the declaration forms which are required for all wildlife imports. 1994 data are incomplete.

The raw data contained several errors which we attempted to correct. Conversations with the Service's Marion Dean, a management analyst; and Sheila Einsweiler, a wildlife inspector, indicate that staff at the ports are overworked, and accuracy is sometimes sacrificed for speed. The staff at the ports enter the species name of a trophy as a four-letter code, so a single keystroke error could change a Persian leopard to a manus island tree snail.

Among these errors are several shipments of hundreds of thousands of live fish and live invertebrates, which were imported for aquariums but entered as trophies. Also, there were several large shipments of fish which, though not entered as "live," were imported by pet shops, or imported by the same companies which imported live fish and live invertebrates. These fish were left out of our analysis. All other fish were included.

Another problem was the definition of "trophy." Several shipments of plants were entered as trophies. Many shipments of insects, seashells, coral, and crustaceans were entered as trophies. Although someone may bring a beautiful leaf, seashell, or butterfly back from a foreign country, these objects are not "trophies" in the conventional sense of the word. Therefore, we left all plants and all invertebrates out of our analysis.

The data also included several anomalies. Two bear species which are endangered only in the U.S., were listed in the database as endangered when they came from Canada. These bears were taken out of our analysis of ESA species, but included in our analysis of all trophies. Similarly, several other species, which are endangered/threatened in some areas but not others, were excluded from our ESA analysis when coming from a non-protected population. Also, for our analysis of ESA-listed and CITES-listed species, we used the listing that would have been in effect at the time of the importation, and marked those species whose listings have changed since the importation. For example, American black bears were not listed under CITES until 1992, so our tables for 1990 and 1991 CITES-listed species do not include black bears.

Some unusual data, such as the trophies imported into the U.S. from the U.S. in 1993, may be accurate. Hunters may move out of the U.S., take their trophies with them, and then move back to the U.S., listing the country of origin as the U.S. when they return. Also, hunters may send their trophies to other parts of the world for exhibitions or competitions, and then bring them back, listing the U.S. as the country of origin. Because of these possible situations, we believe these data may be accurate.

Lastly, there are a great deal of ambiguous data. Many trophies have only "XX" listed as their country of origin. We listed these trophies as coming from an "unknown" export country. Many entries have no final disposition stated, and some of these have no initial action stated, either. When both the final disposition and the initial action are blank, we marked the import "status unknown." When the final disposition is blank, but the initial action is marked "refused," we marked the import "refused." Another example of ambiguous data is "mammal," the single most popular trophy. These appear in the database as "mammals, all," "mammals, non-CITES," and "mammals, nonCITES." We combined all three categories into "mammal, unidentified." Also, hundreds of trophies are entered only as "N" or "X," with no further information on the species or even the class of the animal. Also, because an ESA or CITES listing sometimes depends on an animal's origin, it is impossible for us to tell if a particular individual came from an endangered or a threatened population. For that reason, some species are listed as "B" for "Both." In cases where an animal clearly came from one population or another, we indicated, for example, which bears came from an Appendix I population, and which came from an Appendix II population.

We counted "mammals, all," "mammals, non-CITES," and "mammals, nonCITES" as a single species. Similarly, we counted all "N" and "X" trophies as a single species, so the actual number of different species imported is probably higher. Also, in counting the number of species, we counted different subspecies together as a single species.

The data were received from the service in ASCII, and were converted to dBASE III+. The data were analyzed using dBASE III+.

4. Some species are listed under the ESA and/or CITES according to location or subspecies. Therefore, leopards are considered threatened in some areas, and endangered in others.

5. Letter to The Humane Society of the United States, from R.K. Robinson, of the U.S. Fish and Wildlife Service, dated August 19, 1987.

6. Washington Council, Importing Your Big Game Trophy Animals into the USA, SAFARI TIMES, June 1995, p. 14.

7. Anonymous, Interior Secretary Babbitt Okays Argali Permits, SCI CONVENTION NEWS, Feb. 2, p. 13 (1995).

8. Richard Lamprey, The Management of Sport, SWARA March/April:10-15 (1995).

9. Anonymous, Who's Who in American Hunting, SPORTS AFIELD, Feb., p. 94 (1995).

10. Killing of Elephant Outrages Both Sides, supra note 2.

11. Advertisement for Federico Gellini - Tanzania, SAFARI 21:30 (1995).

12. R. Douglas Yajko, The Green Hills of Africa, SAFARI 21:52(1995).

13. Brochure, Hunting in South Africa: How the Nature Conservation Agencies can Help You, pubiisher unknown, date unknown.

14. Brochure, Kwalata Game Ranch, P.O. Box 2207, Benoni 1500, South Africa.

15. Brochure, The Hunting Consortium Ltd., Route 1, Box 112, Boyce, VA 22620 USA.

16. See, for example, Featured Hunt, SAFARI 21:239 (1995)

17. Advertisement for Tony da Costa's Safari Headquarters, SAFARI TIMES, April 1995, p. 21.

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19. Brochure, Sellers Enterprises International Inc., P.O. Box 496, Port Aransas, TX 78373 USA.

20. Brochure, Jonas Bros. Taxidermy, 11901 Allison Street, Broomfield, CO 80020 USA.

21. The Management of Sport, supra note 8.

22. Brochure, Tanganyika Wildlife Safaris, Dar-es-Salaam - Arusha, Tanzania.

23. The Management of Sport, supra note 8.

24. D.M. Lewis, D.M., Safari Hunting and Conservation: A Guidebook to Zambia, National Parks and Wildlife Services, Ministry of Tourism (1993).

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29. Ron and Cindy Marlenee, Congressmen are Safari Club's Guests at Convention, SCI CONVENTION NEWS, Feb. 1, p. 10.

30. Kenneth T. Winters, Reaching Beyond the First Pinnacle of Achievement, SAFARI, June 1994 Awards Edition, p. 15.

31. The Management of Sport, supra note 8.

32. Anonymous, A Big Five Hunt Chance for Only $200, SAFARI TIMES, Jan. 1995, p. 32 and Anonymous, Donated Hunts Still Growing for SCI XXIII-Las Vegas 1995 Convention, SAFARI TIMES, Jan. 1995, p. 33-35.

33. Ted Karasote, Bloodties, Kodansha International, NY (1994).

34. SCI XXIII booklet of award recipients (1995).

35. Tom Bulloch, Blind Luck, SAFARI 21:33 (1995).

36. Craig Boddington, Bad Week for Leopard, SAFARI 20:33 (1994).

37. Anonymous, Steep Decline in Lions in Northern Botswana, CAT NEWS 19:19 (1993).

38. The Management of Sport, supra note 8.

39. Brochure, Canadian North Outfitting Inc., P.O. Box 3100, Ontario, Canada K0A 1A0 and Jerome Knap, Lord of the Ice, SAFARI 21:38 (1995).

40. Adrian de Villiers, Bowhunting Dangerous Game, SAFARI 20:33 (1994).

41. Brochure, Kwalata Game Ranch, supra note 14.

42. Brochure, Moshate Ranch in South Africa, c/o 177 Buckhorn Flats Road, Riverton, WY 82501 USA.

43. Steep Decline in Lions in Northern Botswana, supra note 37.

44. Ted Williams, Open Season on Endangered Species, AUDUBON, Jan. 1991, p. 26.

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46. Michael Flagg, Hunting the Hunters, LOS ANGELES TIMES, Dec. 2, 1991.

47. Open Season on Endangered Species, supra, note 44.

48. Bloodties, supra, note 33.

49. Open Season on Endangered Species, supra, note 44.

50. Eliot Marshall, Mountain Sheep Experts Draw Hunters' Fire, SCIENCE, 248: 437-438 (1990).

51. Anonymous, Man Gets Probation for Smuggling Skins, WASHINGTON TIMES, Aug. 14, 1993.

52. Open Season on Endangered Species, supra, note 44.

53. Christopher Cook, Broker Fined $200,000 for Shooting Rare Sheep, DETROIT FREE PRESS, September 29, 1993.

54. Brochure, Safaris Africa, 165 Thornbury Lane, Powell, OH 43065

Table 1

Trophy Import Trends

	# of Trophies Imported*	# of Trophies Not Cleared For Importation by FWS	# of Different Species Imported*
All Species			
1990	27205	496	186
1991	25401	3951	195
1992	32563	1440	209
1993	46582	780	250
Species Listed Under the Endangered Species Act			
1990	720	20	25
1991	752	20	27
1992	958	21	25
1993	1322	28	35
Species Listed Under CITES			
1990	2319	64	74
1991	2213	34	78
1992	7032	43	78
1993	17953	61	112

*includes trophies not cleared for importation

Table 2

1990
Trophy Imports

	Top Exporter Countries										
	Zimbabwe	S. Africa	Tanzania	Canada	Zambia	Botswana	Hong Kong	Mexico	Unknown	Other	TOTAL
Top 10 Species											
Mammal, Unidentified	2452	2724	1799	615	396	568	-	10	5	1137	*9706
Impala	1024	354	68	-	43	84	-	-	-	2	*1575
Bear, American Black	-	-	-	1548	-	-	-	-	-	2	1550
Ostrich, Southern African	63	537	10	-	180	30	-	-	-	3	*823
Warthog	303	115	26	-	246	65	-	-	-	17	*772
Kudu, Greater	414	203	43	-	21	60	-	-	1	21	763
Antelope, Sable	214	19	226	-	233	26	-	-	-	1	719
Eland	112	52	521	-	13	3	-	-	-	6	707
Zebra, Common	321	121	75	-	71	59	-	-	-	12	*659
Buffalo, African	286	161	68	-	33	71	-	-	-	14	*633
Other Select Species											
Baboon, Chacma	185	46	13	-	17	11	-	-	-	10	*282
Elephant, African	43	3	11	-	-	1	-	-	-	4	62
Giraffe	96	18	10	-	1	1	-	-	-	-	126
Leopard	124	32	104	-	43	26	-	-	-	5	*334
Lion, African	57	74	133	-	40	42	-	-	2	4	352
Rhinoceros (various)	-	10	-	-	-	-	-	-	-	-	10
Other species	1727	1580	866	1184	498	396	1000	506	30	345	8132
TOTAL	7421	6049	3973	3347	1835	1443	1000	516	38	1583	27205

*some or all not cleared for importation by FWS. See list below.

Classes of Trophies

	Quantity	%
Mammals	24785	91.1
Birds	1835	6.7
Reptiles	48	0.2
Amphibians	8	<0.1
Fish	376	1.4
Unidentified	153	0.6
TOTAL:	27205	100

Trophies Not Cleared by FWS for Importation

2	Baboon, Chacma	abandoned	6	Warthog	status unknown
10	Baboon, Chacma	seized	33	Zebra, Common	refused
1	Buffalo, African	abandoned	2	Zebra, Common	re-exported
5	Impala	status unknown	2	Zebra, Common	status unknown
1	Impala	abandoned	369	Other than above	seized
5	Leopard	seized	4	Other than above	re-exported
3	Mammal, Unidentified	seized	8	Other than above	abandoned
1	Mammal, Unidentified	refused	26	Other than above	refused
1	Ostrich, S. African	status unknown	17	Other than above	status unknown

Table 3

1991
Trophy Imports

	Top Exporter Countries										
	S. Africa	Zimbabwe	Tanzania	Botswana	Canada	Zambia	Namibia	Netherlands	Unknown	Other	TOTAL
Top 10 Species											
Mammal, Unidentified	1628	1068	870	360	176	300	76	2	9	602	*5091
Ostrich, Southern African	3595	-	7	9	-	-	3	-	-	-	*3614
Impala	424	1021	77	157	-	37	42	-	-	-	*1758
Springbok	1219	1	-	127	-	3	79	-	-	-	*1429
Kudu, Greater	360	422	20	63	-	27	99	-	-	4	*995
Warthog	224	341	26	72	-	46	82	-	-	2	*793
Gemsbok	384	2	17	32	-	4	193	-	-	2	*634
Pheasants, All Species	-	-	-	-	25	-	-	600	-	-	625
Buffalo, African	47	289	90	93	-	-	40	-	1	4	*564
Zebra, Common	124	221	58	61	-	51	15	-	-	1	*531
Other Select Species											
Baboon, Chacma	67	126	4	17	-	9	19	-	-	2	*244
Elephant, African	2	46	-	-	-	-	-	-	-	-	48
Giraffe	69	31	-	-	-	1	2	-	-	-	*103
Leopard	35	139	66	21	-	43	8	-	-	1	*313
Lion, African	41	52	97	24	-	30	4	-	1	4	253
Rhinoceros (various)	16	-	-	-	-	-	-	-	-	-	16
Other species	1594	1592	657	300	1077	558	340	-	15	2257	*8390
TOTAL	9829	5351	1989	1336	1278	1109	1002	602	26	2879	*25401

*some or all not cleared for importation by FWS. See list below.

Classes of Trophies

	Quantity	%
Mammals	19466	76.6
Birds	4599	18.1
Reptiles	34	0.1
Amphibians	450	1.8
Fish	374	1.5
Unidentified	478	1.9
TOTAL:	25401	100

Trophies Not Cleared by FWS for Importation

2	Baboon, Chacma	abandoned	2030	Ostrich, S. African	status unknown
2	Baboon, Chacma	seized	1024	Springbok	status unknown
9	Buffalo, African	status unknown	31	Warthog	status unknown
1	Gemsbok	refused	1	Zebra, Common	re-exported
241	Gemsbok	status unknown	18	Zebra, Common	status unknown
25	Giraffe	status unknown	2	Zebra, Common	refused
96	Impala	status unknown	69	Other than above	seized
102	Kudu, Greater	status unknown	1	Other than above	re-exported
7	Leopard	seized	11	Other than above	abandoned
20	Mammal, Unidentified	re-exported	6	Other than above	refused
1	Mammal, Unidentified	abandoned	171	Other than above	status unknown
81	Mammal, Unidentified	status unknown			

Table 4

1992
Trophy Imports

	Top Exporter Countries										
	Zimbabwe	Canada	India	S. Africa	Mexico	Tanzania	Zambia	Botswana	Unknown	Other	TOTAL
Top 10 Species											
Mammal, Unidentified	276	116	3624	148	1	98	49	29	1	228	*4570
Bear, American Black	-	4295	-	-	-	-	-	-	-	153	4448
Impala	874	-	-	762	-	114	91	153	-	41	*2035
Elk	-	47	1744	-	-	-	-	-	1	212	2004
Fish, Unidentified	11	9	-	-	1202	-	-	-	1	394	1617
Warthog	648	-	-	391	-	47	84	69	1	161	*1401
Kudu, Greater	471	-	-	310	-	16	64	74	-	144	*1079
Mongoose (Genus Ichneumia)	1004	-	-	3	-	-	1	-	-	-	1008
Zebra, Common	342	-	-	191	-	77	102	124	1	26	863
Gemsbok	10	-	-	537	-	24	2	66	-	180	*819
Other Select Species											
Baboon, Chacma	122	-	-	35	-	1	16	6	-	21	*244
Elephant, African	77	-	-	8	-	1	-	-	-	12	98
Giraffe	32	-	-	28	-	1	-	-	-	-	61
Leopard	151	-	-	29	-	48	66	15	-	3	*312
Lion, African	78	-	-	59	-	73	54	45	-	4	*313
Rhinoceros (various)	-	-	-	16	-	-	5	-	-	1	22
Other species:	2483	919	-	2459	537	1167	1056	471	16	2604	*11712
TOTAL:	6579	5386	5368	4976	1740	1667	1590	1052	21	4184	*32563

*some or all not cleared for importation by FWS. See list below.

Classes of Trophies

	Quantity	%
Mammals	29220	89.7
Birds	643	2.0
Reptiles	227	0.7
Amphibians	2	<0.1
Fish	1686	5.2
Unidentified	785	2.4
TOTAL:	32563	100

Trophies Not Cleared by FWS for Importation

1	Baboon, Chacma	abandoned	1	Warthog	seized
1	Baboon, Chacma	seized	3	Warthog	status unknown
10	Impala	status unknown	2	Zebra, Common	seized
22	Kudu, Greater	status unknown	1092	Other than above	seized
5	Leopard	seized	1	Other than above	re-exported
1	Lion, African	seized	4	Other than above	abandoned
2	Mammal, Unidentified	status unknown	295	Other than above	status unknown

1993
Trophy Imports

	Top Exporter Countries										
	Botswana	S. Africa	Zimbabwe	Canada	Tanzania	Mexico	Zambia	Namibia	Unknown	Other	TOTAL
Top 10 Species											
Porcupine, Crested	8002	10	10	-	5	-	-	1	-	6	8034
Ostrich, Southern African	4089	2029	27	-	16	-	-	5	-	3	6169
Bear, American Black	-	-	-	6295	-	-	-	-	-	9	*6304
Impala	341	557	1443	3	140	-	43	15	-	24	*2566
Mammal, Unidentified	69	881	316	90	113	2	83	56	1	287	*1898
Skink	-	-	1400	-	-	-	-	-	-	-	1400
Buffalo, African	364	133	489	2	199	-	56	-	-	20	1263
Kudu, Greater	38	420	557	-	30	-	79	60	-	16	1200
Warthog	60	472	474	-	60	-	34	42	-	23	1165
Zebra, Common	110	487	277	-	108	-	48	9	-	13	1052
Other Select Species											
Baboon, Chacma	22	68	136	-	11	-	18	10	1	5	271
Elephant, African	-	30	335	-	4	-	-	20	23	4	416
Giraffe	7	26	45	-	-	-	1	3	-	4	86
Leopard	15	31	169	-	86	-	36	4	1	4	*346
Lion, African	39	43	49	2	102	1	23	-	-	7	*266
Rhinoceros (various)	-	11	-	-	-	-	-	-	-	-	11
Other species	694	4043	2481	1018	1742	1132	432	363	35	2195	*14135
TOTAL	13850	9241	8208	7410	2616	1135	853	588	61	2620	*46582

*some or all not cleared for importation by FWS. See list below.

Classes of Trophies

	Quantity	%
Mammals	36315	78.0
Birds	7048	15.1
Reptiles	1645	3.5
Amphibians	0	0
Fish	689	1.5
Unidentified	885	1.9
TOTAL:	46582	100

Trophies Not Cleared by FWS for Importation

3	Bear, American Black	seized	3	Mammal, Unidentified	seized
1	Bear, American Black	re-exported	579	Other than above	seized
2	Bear, American Black	status unknown	31	Other than above	re-exported
1	Impala	status unknown	34	Other than above	abandoned
1	Leopard	re-exported	4	Other than above	refused
9	Leopard	seized	111	Other than above	status unknown
1	Lion, African	re-exported			

Table 6

1990
Species Listed Under the Endangered Species Act

	Top Exporter Countries										
	Zimbabwe	Botswana	Tanzania	S. Africa	Zambia	Namibia	Australia	Denmark	Unknown	Other	TOTAL
Mammals											
Baboon, Gelada (T,2)	-	-	-	-	-	-	-	-	-	1	1
Banteng (E)	-	-	-	-	-	-	6	-	-	-	6
Bontebok (E,2)	-	-	-	16	-	-	-	-	-	-	*16
Caribou, Woodland (B)	-	-	-	-	-	-	-	-	-	1	1
Deer, Formosan Sika (E)	-	-	-	-	-	-	-	7	-	-	7
Deer, McNeill's (E)	-	-	-	-	-	-	1	-	-	-	1
Deer, North China Sika (E)	-	-	-	-	-	-	-	-	-	2	2
Eland, Western Giant (E)	1	-	-	1	-	-	-	-	-	-	2
Elephant, African (T,1)	43	1	11	3	-	-	-	-	-	4	*62
Gazelle, Sand (E)	-	-	-	-	-	-	-	-	-	1	1
Ibex, Pyrenean (E)	-	-	-	-	-	-	-	-	-	6	6
Impala, Black-faced (E)	1	-	-	1	-	1	-	-	-	-	*3
Lechwe (T,2)	13	118	2	28	63	-	-	-	-	-	224
Leopard (B,1)	124	26	104	32	43	4	-	-	-	1	*334
Ocelot (E,1)	-	-	-	-	-	-	-	-	1	-	*1
Suni, Zanzibar (E)	-	-	1	2	-	-	-	-	-	-	*3
Tahr, Arabian (E)	-	-	-	-	-	-	-	-	-	2	2
Wolf, Red (E)	-	-	-	-	-	-	-	-	-	1	1
Zebra, Hartmann's Mountain (T,2)	1	-	-	10	-	18	-	-	-	-	*29
Birds											
Falcon, Peregrine (B,1)	-	-	-	-	-	-	-	-	-	1	*1
Flycatcher, Seychelle's Paradise (E)	-	-	-	-	-	-	-	-	-	1	1
Roller, Long-tailed Ground (E)	1	-	-	-	-	-	-	-	-	-	1
Reptiles											
Crocodile, Nile (B,2)†	12	-	1	-	-	-	-	-	-	-	*13
Sea Turtle, Green (B,1)	-	-	-	-	-	-	-	-	1	-	*1
Sea Turtle, Hawksbill (E,1)	-	-	-	-	-	-	-	-	-	1	*1
TOTAL	196	145	119	106	93	23	7	7	2	22	*720

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*some or all not cleared for importation by FWS. See list below.
†Downlisted to "Threatened" in 9/93

Classes of Endangered/Threatened Trophies

	Quantity	%
Mammals	702	97.5
Birds	3	0.4
Reptiles	15	2.1
Amphibians	0	0
Fish	0	0
TOTAL:	720	100

Trophies Not Cleared by FWS for Importation

1 Bontebok	seized	5 Leopard	seized
1 Bontebok	abandoned	1 Ocelot	seized
1 Crocodile, Nile	seized	1 Sea Turtle, Green	seized
1 Elephant, African	seized	1 Sea Turtle, Hawksbill	seized
1 Falcon, Peregrine	seized	1 Suni, Zanzibar	seized
2 Impala, Black-faced	seized	3 Zebra, Hartmann's Mt.	seized
1 Impala, Black-faced	abandoned		

Table 7

1991
Species Listed Under the Endangered Species Act

	Top Exporter Countries											
	Zimbabwe	Botswana	Zambia	S. Africa	Tanzania	Namibia	Australia	Spain	N. Zealand	Unknown	Other	TOTAL
Mammals												
Antelope, Giant Sable (E,1)	-	1	-	-	-	-	-	-	-	-	-	1
Aye-Aye (E.1)	-	-	-	-	-	-	-	-	-	1	-	1
Banteng (E)	-	-	-	-	-	-	15	-	-	-	-	15
Bontebok (E,2)	-	-	-	27	-	-	-	-	-	-	-	*27
Caribou, Woodland (B)	-	-	-	-	-	-	-	-	-	-	1	1
Cat, Leopard (E,1)	-	-	-	-	-	-	-	-	-	-	1	*1
Chamois, Apennine (E,1)	-	-	-	-	-	-	-	-	1	-	-	1
Deer, Corsican Red (E)	-	-	-	-	-	-	-	9	-	-	7	16
Deer, Phillipine (E)	-	-	-	-	-	-	-	-	-	-	2	*2
Eland, Western Giant (E)	-	-	-	1	-	-	-	-	-	-	-	1
Elephant, African (T,1)	46	-	-	2	-	-	-	-	-	-	-	48
Hartebeest, Tora (E)	-	-	-	3	-	-	-	-	-	-	-	3
Hyena, Brown (E,1)	-	-	-	1	-	-	-	-	-	-	-	1
Ibex, Pyrenean (E)	-	-	-	-	-	-	-	-	-	-	1	1
Impala, Black-faced (E)	5	1	-	-	1	-	-	-	-	-	-	*7
Kangaroo, Eastern Gray (T)	-	-	-	-	-	-	1	-	-	-	-	1
Lechwe (T,2)	1	100	73	25	-	2	-	-	-	-	2	203
Leopard (B,1)	139	21	43	35	66	8	-	-	-	-	1	*313
Margay, Central American (E,1)	-	-	-	-	-	-	-	-	-	-	1	*1
Serow (E,1)	-	-	-	-	-	-	-	-	-	1	-	*1
Suni, Zanzibar (E)	-	-	-	2	1	-	-	-	-	-	-	3
Tahr, Arabian (E)	-	-	-	-	-	-	-	-	8	-	-	8
Zebra, Hartmann's Mountain (T,2)	8	-	1	15	-	50	-	-	-	-	-	*74
Reptiles												
Crocodile, Nile (B,2)'	18	-	-	-	-	-	-	-	-	-	-	*18
Crocodile, Saltwater (E,1)	-	-	-	-	-	-	2	-	-	-	-	2
Sea Turtle, Green (B,1)	-	-	-	-	-	-	-	-	-	1	-	*1
Sea Turtle, Hawksbill (E,1)	-	-	-	-	-	-	-	-	-	1	-	*1
TOTAL	217	123	117	111	68	60	18	9	9	4	16	*752

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*some or all not cleared for importation by FWS. See list below.
'Downlisted to "Threatened" in 9/93

Classes of Endangered/Threatened Trophies

	Quantity	%
Mammals	730	97.1
Birds	0	0
Reptiles	22	2.9
Amphibians	0	0
Fish	0	0
TOTAL:	752	100

Trophies Not Cleared by FWS for Importation

1 Bontebok	seized	1 Margay, Central American	seized
1 Cat, Leopard	abandoned	1 Sea Turtle, Green	seized
1 Crocodile, Nile	seized	1 Sea Turtle, Hawksbill	seized
2 Deer, Phillipine	seized	1 Serow	abandoned
1 Impala, Black-faced	seized	1 Zebra, Hartmann's Mt.	re-exported
7 Leopard	seized	2 Zebra, Hartmann's Mt.	seized

Table 8

1992
Species Listed Under the Endangered Species Act

	Top Exporter Countries										
	Zimbabwe	Zambia	S. Africa	Botswana	Tanzania	U.S.S.R.	Namibia	Australia	Unknown	Other	TOTAL
Mammals											
Argali (B,V)	-	-	-	-	-	54	-	-	-	34	88
Banteng (E)	-	-	-	-	-	-	-	16	-	-	16
Bontebok (E,2)	-	-	38	1	2	-	1	-	-	-	*42
Cat, Leopard (E,1)	-	-	-	-	-	-	-	-	-	1	*1
Deer, Corsican Red (E)	-	-	-	-	-	-	-	-	-	2	2
Deer, McNeill's (E)	-	-	-	-	-	1	-	-	-	2	3
Deer, Musk (B,2)	-	-	-	-	-	1	-	-	-	-	*1
Deer, Persian Fallow (E,1)	-	-	-	-	-	-	-	-	-	12	12
Deer, Shansi Sika (E)	-	-	-	-	-	-	-	-	-	2	2
Eland, Western Giant (E)	16	-	5	-	6	-	4	-	-	3	*34
Elephant, African (T,1)	77	-	8	-	1	-	12	-	-	-	98
Gazelle, Arabian (E)	-	-	-	-	3	-	-	-	-	-	3
Gazelle, Sand (E)	-	-	-	-	-	1	-	-	-	1	2
Hyena, Barbary (E)	-	-	1	-	-	-	-	-	-	-	1
Ibex, Pyrenean (E)	-	-	-	-	-	-	-	-	-	5	5
Kangaroo, Eastern Gray (T)	-	-	-	-	-	-	-	11	-	-	11
Kangaroo, Red (T)	-	-	-	-	-	-	-	8	-	-	8
Langur, Douc (E,1)	-	-	-	-	-	-	-	-	-	1	*1
Lechwe (T,2)	-	132	30	86	-	-	-	-	-	-	248
Leopard (B,1)	151	66	29	15	48	-	3	-	-	-	*312
Tahr, Arabian (E)	-	-	-	-	-	-	-	-	-	2	2
Tiger (E,1)	-	-	-	-	-	-	-	-	1	-	*1
Zebra, Hartmann's Mountain (T,2)	1	-	7	-	-	-	34	-	-	-	*42
Reptiles											
Crocodile, Nile (B,2)†	21	1	-	-	-	-	-	-	-	-	*22
Crocodile, Saltwater (E,1)	-	-	-	-	-	-	-	1	-	-	1
TOTAL	266	199	118	102	60	57	54	36	1	65	*958

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*some or all not cleared for importation by FWS. See list below.
†Downlisted to "Threatened" in 9/93

Classes of Endangered/Threatened Trophies

	Quantity	%
Mammals	935	97.6
Birds	0	0
Reptiles	23	2.4
Amphibians	0	0
Fish	0	0
TOTAL:	958	100

Trophies Not Cleared by FWS for Importation

5 Bontebok	seized	1 Eland, Western Giant	status unknown
4 Crocodile, Nile	seized	1 Langur, Douc	seized
1 Crocodile, Nile	abandoned	5 Leopard	seized
1 Cat, Leopard	seized	1 Tiger	seized
1 Deer, Musk	seized	1 Zebra, Hartmann's Mt.	seized

Table 9

1993
Species Listed Under the Endangered Species Act

	Top Exporter Countries										
	Zimbabwe	S. Africa	Tanzania	Botswana	Zambia	Namibia	Spain	U.S.**	Unknown	Other	TOTAL
Mammals											
Antelope, Giant Sable (E,1)	2	-	-	-	-	-	-	-	-	-	2
Argali (B,V)	-	-	-	-	-	-	1	-	-	6	7
Banteng (E)	-	-	-	-	-	-	-	-	-	10	10
Bontebok (E,2)	-	99	-	-	-	1	-	-	-	-	*100
Cat, Leopard (E,1)	-	-	-	-	-	-	-	-	1	-	*1
Chamois, Apennine (E,1)	-	-	-	-	-	-	2	2	-	9	13
Civet, Malabar Large-spotted (E,3)	-	1	-	-	-	-	-	-	-	-	1
Deer, Corsican Red (E)	-	-	-	-	-	-	-	3	-	1	4
Deer, Formosan Sika (E)	-	-	-	-	-	-	-	2	-	-	2
Deer, Musk (B,2)	-	-	-	-	-	-	-	-	1	-	*1
Deer, Persian Fallow (E,1)	-	5	-	-	-	-	20	1	-	2	28
Deer, Phillipine (E)	-	-	-	-	-	-	-	-	-	1	1
Eland, Western Giant (E)	4	-	1	-	-	-	-	-	-	1	6
Elephant, African (T,1)	335	30	4	-	-	20	-	2	23	2	416
Gazelle, Sand (E)	-	-	-	-	-	-	-	-	-	1	1
Hartebeest, Swayne's (E)	-	-	3	-	-	-	-	-	-	-	3
Hartebeest, Tora (E)	-	1	-	-	-	-	-	-	-	-	1
Hyena, Brown (E,1)	-	-	3	-	-	-	-	-	-	-	3
Ibex, Pyrenean (E)	-	-	-	-	-	-	1	-	-	-	1
Impala, Black-faced (E)	3	2	7	-	-	-	-	-	-	-	12
Kangaroo, Eastern Gray (T)	-	-	-	-	-	-	-	-	-	2	2
Kangaroo, Red (T)	-	-	-	-	-	-	-	-	-	3	3
Lechwe (T,2)	2	71	2	94	55	-	-	4	1	-	*229
Leopard (B,1)	169	31	86	15	36	4	-	3	1	1	*346
Leopard, Persian (E,1)	-	-	1	-	-	-	-	-	-	-	1
Lion, Asiatic (E,1)	-	-	-	1	-	-	-	-	-	-	1
Markhor, Straight-horned (E,1)	-	-	-	-	-	-	-	-	-	2	2
Suni, Zanzibar (E)	-	2	1	-	-	-	-	-	-	-	3
Tahr, Arabian (E)	-	-	-	-	-	-	-	2	-	2	4
Zebra, Mountain (E,1)	-	-	-	-	-	1	-	-	-	-	1
Zebra, Hartmann's Mountain (T,2)	-	14	-	-	2	47	-	1	-	-	*64
Reptiles											
Crocodile, Nile (B,2)†	45	-	2	-	-	-	-	1	-	-	*48
Turtle, S. American Red-lined (E)	1	-	-	-	-	-	-	-	-	-	1
Sea Turtle, Green (B,1)	-	-	-	-	-	-	-	-	2	-	*2
Sea Turtle, Hawksbill (E,1)	-	-	-	-	-	-	-	-	-	2	*2
TOTAL	561	256	110	110	93	73	24	21	29	45	*1322

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*some or all not cleared for importation by FWS. See list below.
**See Data Analysis Section
†Downlisted to "Threatened" in 9/93

Classes of Endangered/Threatened Trophies

	Quantity	%
Mammals	1270	96.0
Birds	0	0
Reptiles	53	4.0
Amphibians	0	0
Fish	0	0
TOTAL:	1323	100

Trophies Not Cleared by FWS for Importation

1 Bontebok	abandoned	1 Leopard	re-exported
7 Bontebok	seized	9 Leopard	seized
1 Cat, Leopard	seized	1 Sea Turtle, Green	refused
1 Crocodile, Nile	seized	2 Sea Turtle, Hawksbill	refused
1 Deer, Musk	abandoned	3 Zebra, Hartmann's Mt.	seized
1 Lechwe	seized		

Table 10

1990
Species Listed Under CITES

	Top Exporter Countries										
	Zimbabwe	Tanzania	S. Africa	Botswana	Canada	Zambia	Mongolia	Ethiopia	Unknown	Other	TOTAL
Top 15 Species											
Lion, African (2)	57	133	74	42	-	40	-	1	2	3	352
Leopard (1,B)	124	104	32	26	-	43	-	-	-	5	*334
Baboon, Chacma (2)	185	13	46	11	-	17	-	-	-	10	*282
Lechwe (2,T)	13	2	28	118	-	63	-	-	-	-	224
Antelope, Sassaby (3)	85	8	7	36	-	1	-	2	-	1	140
Bear, Grizzly/Brown (V, B)											*126
Appendix I Population	-	-	-	-	-	-	-	-	-	1	
Appendix II Population		-	-	-	107	-	-	-	1	17	
Argali (V)	-	-	-	-	-	-	66	-	-	26	†92
Wolf, Gray (V)	-	-	-	-	81	-	4	-	-	1	*†86
Antelope, Roan (2)[¤]	1	29	2	-	-	27	-	-	-	15	74
Elephant, African (1,T)	43	11	3	1	-	-	-	4	-	-	*62
Monkey, Green/Vervet (2)	37	-	17	-	-	-	-	1	-	-	55
Antelope, Sitatunga (3)	1	3	2	33	-	5	-	-	-	1	45
Hippopotamus (3)[‡]	14	8	5	-	-	12	-	1	-	-	40
Puma, Western (2)	-	-	-	-	37	-	-	-	-	1	38
Caracal/Persian Lynx (2)[°]	8	-	23	1	-	-	-	4	-	1	37
Other species	88	36	60	2	16	8	3	28	14	75	*332
TOTAL	656	347	299	270	241	216	73	41	17	159	*2319

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*some or all not cleared for importation by FWS. See list below.
†All of these are from Appendix II populations
‡Has since been uplisted to Appendix II
°Has since been uplisted to Appendix I
¤Has since been delisted from CITES

Classes of Endangered/Threatened Trophies

	Quantity	%
Mammals	2251	97.1
Birds	27	1.2
Reptiles	41	1.7
Amphibians	0	0
Fish	0	0
TOTAL:	2319	100

Trophies Not Cleared by FWS for Importation

10	Baboon, Chacma	seized	1	Wolf, Gray	re-exported
2	Baboon, Chacma	abandoned	1	Wolf, Gray	seized
1	Bear, Grizzly/Brown	re-exported	4	Other than above	abandoned
2	Bear, Grizzly/Brown	seized	2	Other than above	re-exported
1	Elephant, African	seized	35	Other than above	seized
5	Leopard	seized			

Table 11

1991
Species Listed Under CITES

	Top Exporter Countries										
	Zimbabwe	S. Africa	Tanzania	Zambia	Canada	Botswana	Namibia	Mongolia	Unknown	Other	TOTAL
Top 15 Species											
Leopard (1,B)	139	35	66	43	-	21	8	-	-	1	*313
Lion, African (2)	52	41	97	30	-	24	4	-	1	4	*253
Baboon, Chacma (2)	126	67	4	9	-	17	19	-	-	2	*244
Lechwe (2,T)	1	25	-	73	-	100	2	-	-	2	203
Bear, Grizzly/Brown (V,B)											139
Appendix I Population	-	-	-	-	-	-	-	2	-	-	
Appendix II Population	130	-	-	-	130		-	-	-	7	
Antelope, Sassaby (3)	48	17	10	5	-	-	-	-	-	1	116
Hippopotamus (3)[‡]	13	8	62	18	-	-	-	-	-	-	101
Wolf, Gray (V)	-	-	-	-	81	-	-	-	-	3	†84
Zebra, Hartmann's Mountain (2,T)	8	15	-	1	-	-	50	-	-	-	*74
Monkey, Green/Vervet (2)	35	29	3	-	-	1	-	-	-	1	*69
Argali (V)	-	-	-	-	-	-	-	34	1	30	†65
Antelope, Roan (2)[‡‡]	-	1	17	34	-	-	4	-	2	1	*59
Antelope, Sitatunga (3)	-	4	6	11	-	29	-	-	-	1	51
Elephant, African (1,T)	46	2	-	-	-	-	-	-	-	-	48
Serval (2)	19	-	5	-	-	-	-	-	-	6	30
Other Species	73	107	37	23	42	3	3	3	8	64	*364
TOTAL	560	351	307	247	253	230	90	39	12	124	*2213

E = ESA Endangered list T = ESA Threatened list B = Both (ESA listing varies, depending on location/subspecies)
1 = CITES Appendix I 2 = CITES Appendix II 3 = CITES Appendix III V = Varies (CITES listing varies, depending on location/subspecies)
*some or all not cleared for importation by FWS. See list below.
†All of these are from Appendix II populations
‡Has since been uplisted to Appendix II
‡‡Has since been delisted from CITES

Classes of Endangered/Threatened Trophies

	Quantity	%
Mammals	2158	97.5
Birds	30	1.4
Reptiles	25	1.1
Amphibians	0	0
Fish	0	0
TOTAL:	2213	100

Trophies Not Cleared by FWS for Importation

1	Antelope, Roan	seized	4	Monkey, Green/Vervet	seized
1	Baboon, Chacma	abandoned	1	Zebra, Hartmann's Mt.	re-exported
2	Baboon, Chacma	seized	2	Zebra, Hartmann's Mt.	seized
7	Leopard	seized	4	Other than above	abandoned
1	Lion, African	seized	11	Other than above	seized

Table 12

1992
Species Listed Under CITES

	Top Exporter Countries										
	Canada	Zimbabwe	Zambia	S. Africa	Tanzania	Botswana	U.S.**	U.S.S.R.	Unknown	Other	TOTAL
Top 15 Species											
Bear, American Black (3)[††]	4295	-	-	-	-	-	153	-	-	-	*4448
Lion, African (2)	-	78	54	59	73	45	-	-	-	4	*313
Leopard (1,B)	-	151	66	29	48	15	-	-	-	3	*312
Lechwe (2,T)	-	-	132	30	-	86	-	-	-	-	248
Antelope, Sassaby (3)	-	74	25	14	38	50	-	-	-	9	210
Baboon, Chacma (2)		122	16	35	1	6	-	-	-	21	*201
Bear, Grizzly/Brown (V,B)	121	-	-	-	-	-	7	50	-	-	*†178
Wolf, Gray (V)	95	-	-	-	-	-	3	2	-	11	†111
Elephant, African (1,T)	-	77	-	8	1	-	-	-	-	12	98
Hippopotamus (3)[‡]	-	39	34	6	11	-	-	-	-	4	94
Argali (V,B)	-	-	-	-	-	-	-	54	-	34	†88
Antelope, Roan (2)[‡‡]	-	8	42	-	21	-	-	-	-	4	75
Antelope, Sitatunga (3)	-	-	24	18	8	23	-	-	-	1	74
Duiker, Blue (2)	-	1	7	25	-	-	-	-	-	23	56
Puma, Western (2)	42	-	-	-	-	-	2	-	-	5	*49
Other Species	43	95	37	139	35	3	2	5	3	113	*476
TOTAL	4596	645	437	363	236	228	167	111	3	246	*7032

E = ESA Endangered list T = ESA Threatened list B = Both (ESA listing varies, depending on location/subspecies)
1 = CITES Appendix I 2 = CITES Appendix II 3 = CITES Appendix III V = Varies (CITES listing varies, depending on location/subspecies)
*some or all not cleared for importation by FWS. See list below.
**See Data Analysis Section
†All of these are from Appendix II populations
††Listed in Appendix III as of 3/92 CITES meeting. Has since been uplisted to Appendices I and II
‡Has since been uplisted to Appendix II
‡‡Has since been delisted from CITES

Classes of Endangered/Threatened Trophies

	Quantity	%
Mammals	6960	99.0
Birds	47	0.7
Reptiles	25	0.4
Amphibians	0	0
Fish	0	0
TOTAL:	7032	100

Trophies Not Cleared by FWS for Importation

1	Baboon, Chacma	abandoned	1	Lion, African	seized
1	Baboon, Chacma	seized	2	Puma, Western	seized
3	Bear, American Black	seized	2	Other than above	abandoned
1	Bear, Grizzly/Brown	seized	27	Other than above	seized
5	Leopard	seized			

Table 13

1993
Species Listed Under CITES

	Top Exporter Countries										
	Botswana	Canada	Zimbabwe	S. Africa	Tanzania	Zambia	Namibia	Ethiopia	Unknown	Other	TOTAL
Top 15 Species											
Porcupine, Crested (3)	8002	-	10	10	5	-	1	3	-	3	8034
Bear, American Black (3)††	-	6295	-	-	-	-	-	-	-	9	*6304
Hippopotamus (3)‡	1	-	219	203	21	32	-	3	-	1	480
Elephant, African (1,T)	-	-	335	30	4	-	20	-	23	4	416
Leopard (1,B)	15	-	169	31	86	36	4	-	1	4	*346
Baboon, Chacma (2)	22	-	136	68	11	18	10	3	1	2	271
Lion, African (2)	39	2	49	43	102	23	-	4	-	4	*266
Lechwe (2,T)	94	-	2	71	2	55	-	-	1	4	*229
Bear, Grizzly/Brown (V,B)	-	111	-	-	-	-	-	-	-	50	*†161
Wolf, Gray (V)	-	157	-	-	-	-	-	-	-	2	†159
Antelope, Sassaby (3)	38	-	66	16	19	11	-	3	-	3	156
Bontebok (2,E)	-	-	-	99	-	-	1	-	-	-	*100
Monkey, Green/Vervet (2)	2	-	13	56	-	-	-	6	-	3	80
Lizard, Warren's Girdled (2)	-	-	79	-	-	-	-	-	-	-	79
Tegu, Red (2)	-	-	-	-	-	-	-	-	-	72	72
Other Species	24	86	101	185	74	47	51	62	10	160	800
TOTAL	8237	6651	1179	812	324	222	87	84	36	321	17953

E = ESA Endangered list T = ESA Threatened list B = Both (ESA listing varies, depending on location/subspecies)
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*some or all not cleared for importation by FWS. See list below.
†All of these are from Appendix II populations
††Has since been uplisted to Appendices I and II.
‡Has since been uplisted to Appendix II

Classes of Endangered/Threatened Trophies

	Quantity	%
Mammals	17693	98.6
Birds	51	0.3
Reptiles	209	1.2
Amphibians	0	0
Fish	0	0
TOTAL:	17953	100

Trophies Not Cleared by FWS for Importation

1	Bear, American Black	re-exported	
3	Bear, American Black	seized	
2	Bear, American Black	status unknown	
1	Bear, Grizzly/Brown	seized	
3	Bear, Grizzly/Brown	status unknown	
1	Bontebok	abandoned	
7	Bontebok	seized	
1	Lechwe	seized	
1	Leopard	re-exported	
11	Leopard	seized	
1	Lion, African	re-exported	
1	Other than above	abandoned	
3	Other than above	re-exported	
24	Other than above	seized	
1	Other than above	status unknown	

STATEMENT OF GINETTE HEMLEY, DIRECTOR FOR INTERNATIONAL WILDLIFE POLICY, WORLD WILDLIFE FUND

Mr. Chairman, members of the Subcommittee, I am Ginette Hemley, Director of International Wildlife Policy with World Wildlife Fund. I very much appreciate the opportunity to appear today to discuss the international provisions of the Endangered Species Act and their implementation by the United States.

I would like to address my comments today to two issues raised by the Committee: the relationship between the ESA and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and the role of the ESA and CITES in conservation of threatened or endangered species outside the United States.

WWF has extensive experience with both the ESA and CITES, the principal vehicles through which the United States controls commerce in endangered and threatened species. Through TRAFFIC, the wildlife trade monitoring program of WWF and the World Conservation Union, WWF devotes significant resources to help ensure that wildlife trade is not detrimental to the species involved and done in accordance with domestic and international laws and agreements, including the ESA. WWF has also participated as a non-governmental observer in the CITES Conferences of the Parties over the last 15 years and regularly provides information and technical and financial support to the Convention. In addition to CITES, WWF supports field conservation programs in more than 70 countries worldwide, and we are privileged to be working in the two countries represented on the panel today.

The issues surrounding CITES and the ESA are broad and complex. I would like to stress three key points:

- The United States plays an important leadership role in the global effort to conserve endangered species, including, in particular, the control of illegal and detrimental wildlife trade.
- The ESA is essential to U.S. leadership, authorizing U.S. implementation of CITES, and providing broader support for endangered species conservation efforts around the world.
- The international provisions of ESA, including the listing of foreign species, should be retained unchanged. These provisions promote the conservation of species listed by CITES, authorize national and international enforcement activities, and help raise public awareness and support for conservation. In some instances, ESA also provides protections beyond those secured by CITES that are critical to the survival of endangered species.

INTERNATIONAL WILDLIFE TRADE

The international wildlife trade is a huge global business, and one that is largely unregulated. TRAFFIC estimates the global value of wildlife commerce at a minimum $10 billion per year, excluding timber and fisheries products. The United States alone imports about $1 billion in wildlife annually, according to official trade records, and is probably the world's largest wildlife consuming nation.

Trade has been a major threat to many species. Unbridled commerce has driven some species to extinction, such as the passenger pigeon here in the U.S. It has caused the near collapse of populations of other species, such as rhinos and tigers.

At the same time, in some countries wildlife use and trade plays an important role in the conservation of species. Namibia and Zimbabwe, for example, have been pioneers in wildlife conservation, relying in part on wildlife use and trade to provide important income for rural communities, particularly through controlled sport hunting. WWF recognizes the conservation value of these programs and we have actively supported them.

THE ROLE OF ESA AND CITES IN CONTROLLING TRADE

The vast majority of international wildlife trade involves species that are not listed by either CITES or the ESA. In fact, probably no more than 20 or 25 percent of this trade falls under CITES' purview, and only a tiny fraction of U.S. wildlife imports consists of species listed by the ESA. For example, more than 24,000 wildlife trophies have been exported to the U.S. from east and southern Africa in the past 2 years. Fewer than 1,500 of these trophies have been of species protected under the ESA, mostly leopard and elephant. Because of the high value of these two species, however, a disproportionate amount of attention has focused on ESA's restrictions.

ESA establishes the U.S. Federal Government's authority to implement CITES. It grants the U.S. Government broad powers to enforce the rules of CITES, including far-reaching authority and significant penalties for violations, which go beyond

U.S. borders. American citizens are bound by ESA's commerce restrictions everywhere in the world, and these measures have helped directly in international crackdowns on global wildlife smuggling, a black market industry valued at $2–3 billion per year. Such provisions have helped give teeth to CITES and reinforce wildlife protection laws of other countries.

U.S. IMPLEMENTATION OF CITES DECISIONS

Some have questioned whether the ESA unduly restricts trade in species allowed in commerce under CITES, and why the list of foreign species protected under the ESA differs from those listed under CITES. Historically, the ESA and CITES have evolved down parallel paths; many of the foreign species originally listed under the ESA were also listed by CITES at its inception. In recent years, the Convention has begun to selectively reduce trade restrictions for a few species, particularly those which are no longer considered endangered by trade. In general, the U.S. has followed CITES' lead.

The leopard was downlisted under the ESA from "endangered" to "threatened" in 1982 after sufficient evidence showed that the change was warranted. A special rule was adopted to allow hunters from the United States to import their own trophies, while at the same time prohibiting the import of leopard-skin coats or other commercial products. CITES has adopted a similar rule. In 1993 and 1994 over 625 leopard trophies were legally imported into the United States from at least 10 African countries, according to the Fish and Wildlife Service; these are tracked through the CITES permit system which allows for the trade to be monitored but does not impede it unless problems become evident.

Similarly, the "threatened" listing of the African elephant under ESA provides for a special rule that allows trophy imports from countries which have elephant conservation programs. The special allowance for elephant imports is based on a somewhat stricter finding than that for leopard because the elephant has been more susceptible to heavy poaching in the recent past. Under this special ESA rule, government trade records show that over 200 elephant trophies from at least eight African countries were imported into the United States in 1993 and 1994, the vast majority from Zimbabwe.

The United States has not yet implemented CITES' downlisting of the Nile crocodile from east and southern Africa, although CITES took such action some time ago. We agree with our southern African colleagues that the U.S. should implement this change and that the delay has not been justified. In our view, however, this problem can be remedied by administrative action, and does not justify any change to the Act itself.

IMPORTANCE OF ESA AUTHORITY TO LIST FOREIGN SPECIES

While the U.S. should generally defer to CITES decisions, WWF believes it is also important for the U.S. to retain authority to take stricter measures when circumstances warrant. What would happen if we did not provide protection to foreign species under the ESA? Real protection for some species could suffer.

The authority to act for the protection of foreign species is important in emergencies. When a sudden increase in poaching or an epidemic threaten a species, or if export controls fail because of political instability or corruption, CITES often cannot act swiftly enough to meet the crisis. Prompt individual action by the U.S. and other countries is essential.

Often, the plight of a species is so dire that CITES listing is not itself enough. Such is the situation now facing tigers and most of the world's rhinos, an issue addressed just a few days ago in the House of Representatives. CITES has listed all tigers and rhinos on Appendix I and has banned their trade, yet their numbers continue to decline from illegal hunting for international commerce. In such cases, WWF believes it is incumbent on all nations to rely not only on CITES listing, but to enact all possible additional protection measures like those offered by the ESA, which include international enforcement actions and prohibitions on interstate commerce.

The Act's protection of foreign species has also been important in catalyzing broad public support for their conservation. The importance of this aspect of the ESA's benefits is hard to quantify, but has in our view been crucial to raising public awareness both here and abroad about the conservation needs of critically endangered species and to building a financial basis for support of their conservation.

And, the ESA's provisions have helped secure more effective conservation efforts on the ground. The giant panda, WWF's own symbol and one of the world's most endangered creatures with as few as 1,000 in the wild. is a good example. Under the ESA, pandas may be imported into the United States only if the import is di-

rectly linked to projects enhancing the conservation of the species in the wild in China. CITES requires only a finding that the trade is "not detrimental," with no affirmative conservation obligation. The endangered listing of the giant panda under the ESA is helping to build a comprehensive program of support for the conservation of the species in the wild, among zoos, private organizations, and the U.S. and Chinese governments.

CITES explicitly authorizes all countries to take stricter measures for the conservation of species protected under the Convention. Many if not most parties have done so. Some nations, both developed and developing, have prohibited all wildlife imports and exports, going well beyond-the mandate of CITES. The European Union has implemented authority similar to that provided in ESA. The challenge for the U.S., in WWF's view, is to strike an appropriate balance. WWF believes the U.S. has generally met that challenge. Overall, trade records indicate that few, if any, well-managed species are unduly restricted from commerce in the United States by the ESA.

WWF believes that the Fish and Wildlife Service has effectively used the flexibility of the ESA to accommodate the unique conservation needs of threatened species by allowing imports under certain conditions on a country-specific basis. Wildlife conservation and trade control capabilities vary enormously among countries, and ESA provides the latitude to address these differences. From a global perspective it is critically important for the U.S. to retain that authority. We recognize, however, the concerns of some countries over the potential for U.S. import restrictions to undercut investments in conservation programs that depend on the U.S. market for their products and are sympathetic to these points. We urge the Secretary of Interior to take a hard look at these specific cases to ensure that conservation programs are not undermined by excessive U.S. regulation.

As the U.S. implements CITES and makes decisions on listings under the ESA, it is clearly important to consult regularly and fully with range States, to better understand their conservation programs, and to support these programs where appropriate. CITES has formally recognized the need for broad consultation with range States on listing decisions. The administration should implement this recommendation by making consultation with range States a higher priority by adopting it as formal policy in all matters related to foreign species. The U.S. should not, however, curtail its authority to protect species, and we support the listing of foreign species when the conservation status of the species calls for it.

In conclusion, WWF believes that the ESA is sufficiently broad but appropriately flexible to implement the requirements of CITES as well as to provide protections for foreign species not covered by the Convention. Implementation of the Act and its CITES provisions, including its accommodation of the conservation needs of some foreign countries and some species, could and should be improved through administrative actions.

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FAX TRANSMISSION COVER SHEET

Date: July 26, 1995

To: Jim Tate

Subject: Record of 7/20/95 Hearing on ESA

From: Dr. James R. Woehr, Senior Scientist

No. Pages: 5 (Including Cover Sheet)

Jim -

Please enter the following 4 pages into the official record of the 7/20/95 hearing on the ESA. These four pages consist of two separate reviews of Gregg Easterbrook's book *A Moment on the Earth*, one by Dr. Jack Schultz, professor of entomology at Penn State University, and the other by Dr. David W. Orr, chair of the environmental studies program at Oberlin College. Both reviews appeared in the August 1995 issue of *Natural History* magazine. Basically, they indicate that Easterbrook's book is decidedly not based on science.

Thanks,

Jim Woehr

REVIEWS

When Nature Writers Get It Wrong

by Jack C. Schultz

Reading these two books together makes one thing clear: ignoring rigorous science, using sources and opinions selectively, employing illogic, and invoking mysticism can permit polemicists to promote wildly different and highly personal viewpoints about the state of the environment. To Gregg Easterbrook, author of *A Moment on the Earth: The Coming Age of Environmental Optimism*, nature's garden is in the best shape ever, and anyone who thinks otherwise is a selfish, deluded alarmist. But Charles Little, in *The Dying of the Trees: The Pandemic in America's Forests*, sees disease in the forested part of the garden, and states that we are the culprits behind the epidemic. In each of eight short chapters, Little describes a "catastrophic" problem in a forest somewhere in the United States. While a few of these problems have well-documented human causes (for example, ozone damage in the Los Angeles basin), the sources of others (acid rain) are debatable or unknown (the epidemic of dogwood disease called anthracnose). Some (replacing old growth forests with younger stands; gypsy moth outbreaks) might not even be considered problems.

Little, a journalist who has worked the environmental beat for thirty years, depends heavily on the views of local observers and advocates, and on the emotional statements of a few interested scientists from diverse disciplines. Nary a refereed publication nor a balanced scientific treatment is referred to in the book's pages, despite a huge literature on many relevant topics. But then, Little is convinced that establishment science is too "beholden to industry" and too constrained by political interests to make fair-minded evaluations. This will surprise the many fine researchers funded by grants from such agencies as the National Science Foundation. A dose of rigorous, refereed science—which generally indicates that complex interactions rarely have simple, much less single, causes—would have taken the wind out of Little's exhortative sails. Although his point that forests in the United States have long been badly managed is a good one, his argument that diverse phenomena—such as gypsy moth outbreaks, dogwood anthracnose, true dieback in Vermont and Appalachia, and forest fires in the West—can all be traced to a common cause just doesn't impress.

THE DYING OF THE TREES: THE PANDEMIC IN AMERICA'S FORESTS, by Charles E. Little. *Viking Press; $21.95; 264 pp.* A MOMENT ON THE EARTH: THE COMING AGE OF ENVIRONMENTAL OPTIMISM, by Gregg Easterbrook. *Viking, $27.95; 745 pp.*

Little repeatedly assumes that there is broad scientific agreement about the causes and effects of many environmental phenomena. In the case of global CO_2 accumulation, for example, he ignores the growing body of evidence that many of its environmental effects are likely to be positive. Eschewing such "details," Little concludes that this is the time for despair and alarmist rhetoric. He is clearly sincere, but I'm afraid that his premise is false, providing grist for Easterbrook's mill.

In a mammoth, three-part polemic, Easterbrook, a magazine journalist, looks into nature's garden and concludes that we live in the best of all possible worlds, and that it's only getting better. In Part I, he attempts to convince us that nature is nothing less than a highly resilient, mystical superorganism—even a deity—with its own "needs" and "values." Reviving some old philosophy and some bad science in support of this viewpoint, he reintroduces John Locke's version of natural law, under which human values and inalienable rights are on a par with nature's and are thus permitted to compete with them. Hence, causing the extinction of a species is not only a trivial "natural" act (nature itself has caused many more) but is justifiable under natural law.

Conveniently, natural law's tenets are perceptible only to humans who believe in them, and so the concept has been used periodically to validate any number of viewpoints—minority, liberal, conservative, status quo, or revolutionary. Easterbrook upholds that tradition by condemning those who might place nature's values in conflict with those of humans. These "enviros," as Easterbrook labels them, are caricatured as ponytailed, bluejeaned, selfish misanthropes who crave solitude, adore nature, and favor population control because they hate other humans and harbor deep-seated, "fashionably correct" guilt for "having defiled the garden." Having placed environmentalists beneath contempt with that bit of psychobabble, Easterbrook proceeds to twist science and nature to his own ends.

Part I contains some of the most egregious cases of misunderstood, misstated, misinterpreted, and plainly incorrect "science" writing I've ever encountered. The

abuse of the concept of natural selection here could turn Darwin in his grave, were it worthy of contemplation. In his own time, Darwin refuted Easterbrook's bastardized version of evolutionary theory, called progressivism, because it asserts that evolution constantly improves organisms according to some human standard. Seeing Easterbrook twist one of my professional specialties—plant chemistry—to show that plants need not suffer increasing ultraviolet light levels gave me something worse than sunburn. The section-ending list of "Nature's Values" had me laughing out loud. Examples: "cooperation is better than competition"; "creatures, ecologies [sic], and people get better (evolutionarily) with the passage of time"; "most changes are good for living things"; "physical objects are not as . . . important as the lowliest living creature." Easterbrook isn't even consistent from chapter to chapter. The supreme value of the "lowliest" creature goes out the window when a property value is compromised, as in efforts to protect an endangered species or any time the creature is an insect. He appears to have a severe case of entomophobia (protecting beetles is "nonsense").

In Part II, Easterbrook launches his argument that the current environmental situation not only isn't bad; it's good and getting better. Here, he reveals an appreciation for the complexity of the world's ecosystems that Little lacks. He realizes, for example, that recent studies suggest that forests will absorb more of the potential increase in atmospheric CO_2 than we'd thought. Although he provides repeated "that's no excuse for environmental abuse" disclaimers in this and other scenarios, the clear conclusion is "don't worry; be happy." Of course, our present understanding doesn't permit this conclusion—we simply don't know what will happen. What Easterbrook has done differently from Little is simply to take another turn in the incomplete maze of ecological understanding.

Throughout Part II, we are treated to ever more logical and factual wonders: the main reason acid precipitation may be a problem in the Blue Ridge Mountains is that those darn peaks are just so high that they intercept the stuff (I'd hate to see the remedy for this); the desire by enviros to limit population is "self-centered," but the desire to sacrifice endangered species for personal gain is not; the desire to preserve old-growth forest is motivated in Saab-driving "snobs" by a hatred of logging trucks; and, again, every animal on earth "may be vital to the cosmic enterprise" and should be preserved "with joy" except, apparently, for insects.

In his ignorant optimism, Easterbrook sees no difference between a monotypic tree farm and a complex, unmanaged forest, thereby concluding that if the total tree count is okay, so is the world. (This is what I call a "suburban lawn" view of the world—my lawn's enough nature for me! Perhaps that's why he seems to think that increasing human population density will have no negative consequences for the quality of life and why he acknowledges the tragedy of fifty lives lost annually to tigers by "poor unarmed people risking their lives to . . . feed their children" but not that of the hundreds or thousands of lives lost to poor, armed people in any of our crowded American cities.)

Easterbrook almost managed to get my respectful attention back on track at the start of Part III with a discussion of the underappreciated resilience of nature. But soon came signs of a final derailment in an attempt to foresee the environmental future: species will "get better" (meaning more humanlike, I suspect); predation will end as species live in "enlightened cooperation" (except for plants, which would be the big losers as all animals, not just people, go vegetarian); there will be no more extinction since "disease is a defect of nature" (just think of a world with no predators or parasites to regulate the plant eaters). As Easterbrook violated more and more natural laws (not natural law), I began looking for the joke's punch line. What I found instead was a penultimate chapter seriously proposing colonizing the

Illustrations by Yvonne Buchanan

planets. When the final paragraphs proposed inserting religious (Christian) values into environmentalism, the derailment was complete.

These are dangerous books for dangerous times; I'm sure Easterbrook's volume is near the top of many Congressional reading lists. There are some among us—mostly active scientific researchers—who can explain what we do know and draw valid, albeit limited conclusions. They are the ones who should be writing about science for the general public rather than those who would exploit ignorance to fit their own agendas. Why don't they? The usual explanation is that popularizing science costs an academic respect and credibility. Now I understand why.

Jack C. Schultz is a professor of entomology at Penn State University. He teaches and does research on forest entomology, ecology, and plant physiology.

Denial in the Fortress

by David W. Orr

Gregg Easterbrook begins *A Moment on the Earth: The Coming Age of Environmental Optimism* with a summation of what he calls "ecorealism," which is essentially his view that the war to preserve a habitable earth is all but won—or will be by the year 2000—and that those who won it ought now to be upbeat and happy. Alas, they are not. Six hundred and ninety-eight pages later, he zooms back from outer space, having greened Mars, trashed all manner of what he deems to be insufficiently optimistic thinking, and created what he calls a "new nature" on earth—one without predation, aging, violence, species extinctions, and killer asteroids. Easterbrook envisions two possible long-run scenarios for Earth: one in which an overall "human population of hundreds of billions or even trillions of souls" could be living throughout the cosmos, with Earth as "a planet-size preserve"; the other a world where "a small human contingent uses advanced knowledge to live the nonmaterialist lifestyle of ecological longing." Easterbrook advertises himself as an "ecorealist."

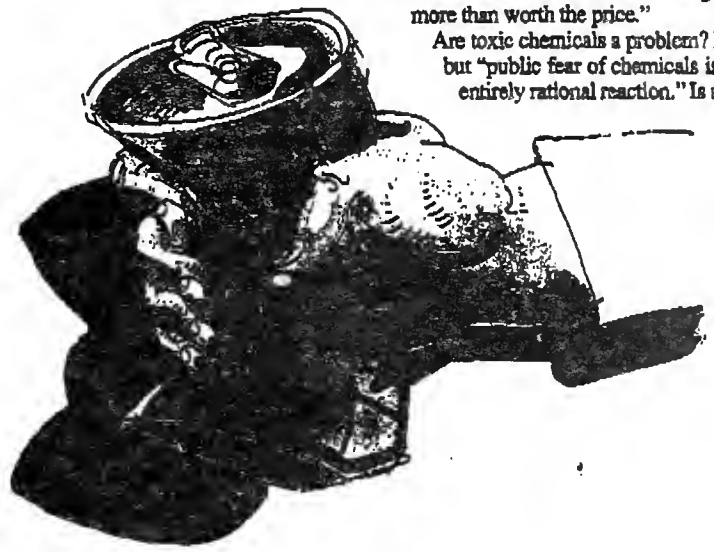
Two things happen in the book between Easterbrook's description of ecorealism and his vision of the human takeover of the cosmos. First, some 157 pages instruct us in what the author calls "the long view of Earth's environmental problems." Such things as human-induced climate change and soil erosion are portrayed as minor events; shifting continents, glaciation, and collision with asteroids have wreaked far greater havoc. "Nature," he says, "has for millions of centuries been generating worse problems than any created by people." I do not for a moment doubt the truth of this assertion. Nor do I doubt that from, say, Alpha Centauri, millions of light-years away, a nuclear war on earth would scarcely make the midday farm report. The earth is a "fortress," says Easterbrook, capable of withstanding all manner of insult and technological assault. Somehow I take little comfort.

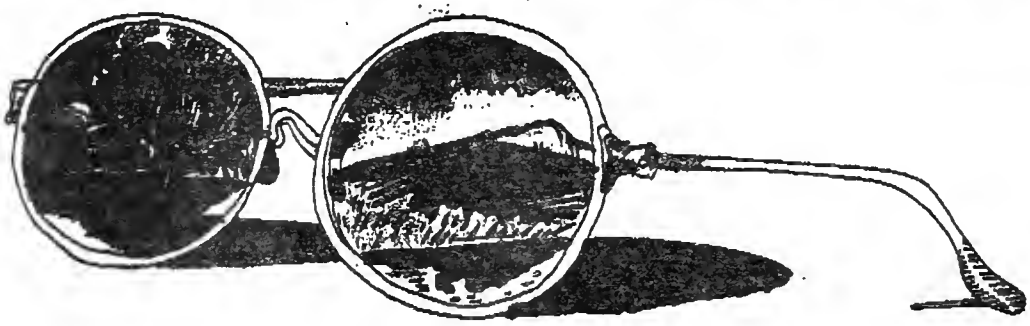
Having informed the reader that in the cosmic scheme of things, our ecological problems are not really that bad, Easterbrook then attempts to prove that they do not exist in the short-term either. In the process, we are whipsawed back and forth between environmental success stories, denial, selective use of evidence, outright error, and caveats that hedge all of Easterbrook's optimistic bets. (By the way, the Environmental Defense Fund has recently published "A Moment of Truth: Correcting the Scientific Errors in Gregg Easterbrook's *A Moment on the Earth*," edited by Leonie Haimson and Billy Goodman.)

In fact, there are really two Easterbrooks: one carefully selecting evidence to advance a view that the war for a habitable Earth has been won; the other following quickly behind to say that it may not be so. Early on, he admits that "humanity may be executing many subtle forms of damage to the biosphere, damage that . . . is not yet apparent from our short-lived perspectives." Then he proceeds to ridicule those, including Rachel Carson, who have ever taken this view seriously.

On page 111, he downplays the possibility of global warming: "When people act in ways that put extra carbon dioxide into the air, all they do is confront nature with a bit more of a substance that would have been in the air man or no." Thirty-nine pages later, he reverses himself: "By tampering with the climate, people play with exactly that aspect of nature experience suggests [is] most likely to do them in. Even if the odds of an artificially triggered climate emergency are low, prevention is amply justified." On page 301, he asserts that "warming is probably in society's interest," but fifteen pages later he advises that "any reasonable policy that reduces the odds of climate change is more than worth the price."

Are toxic chemicals a problem? No, but "public fear of chemicals is an entirely rational reaction." Is acid





rain a problem? Well, "no," but this "does not rule out [cause for] alarm." Genetic engineering? Not a problem, but "a disaster cannot be ruled out." Overpopulation? A short-term "disaster" but "over the long term . . . a boon for the natural scheme." Farmland preservation? Not necessary, but "primal nature will not last unless society adapts a general vision of land preservation." And so it goes.

Easterbrook's grand denial rests on the assumption that "the portion of Earth taken over by humanity is fantastically exaggerated" and that humans are still a small, insignificant part of an infinitely resilient biosphere. He arrives at this view, which informs all that follows, without any reference whatsoever to the sizable volume of evidence that exists about human effects on net primary productivity, ecological carrying capacity, the circulation of materials, biotic systems, and biogeochemical cycles.

Toward those who hold alternative positions, Easterbrook is dismissive. Although he applauds the "extraordinary success of modern environmental protection . . . perhaps the best instance of government-led social progress in our age," he does not like the tens of thousands of people who brought it about, whom he calls the enviros. They "pine for bad news." They suffer from a "primal urge to decree a crisis" and from dubious "subconscious motives to be alone with nature." Pessimism, for them, is "stylish." (He does, however, have kind things to say about former Environmental Protection Agency Director William Reilly, who in turn says exceedingly flattering things about the book on its jacket.) Mostly, Easterbrook approves of those whose focus is purely technological and dislikes those who raise larger and messier questions about ethics, justice, and politics.

Ah yes, politics. In the fall of 1994, about the same time that Easterbrook would have been working over the galley pages for *A Moment on the Earth*, agents for the Republican Party were drafting the final version of "The Contract with America," one part of which aimed to dismantle the environmental protections so painstakingly erected over the past twenty-five years. Easterbrook and his happy book were blindsided by reality. From the rubble of collapsed illusions, he wrote in the *New York Times* on April 21 that "until the new Congress began, all signs seemed encouraging." Where has Easterbrook been? Were these signs not apparent in virtually every legislative and regulatory battle of the past twenty-five years? Now he plaintively wonders whether "all the apparent progress in the chemical industry [has] been merely a public-relations ploy" or whether he was duped by the logging industry, which "recently embraced a bill that would make a mockery of the Endangered Species Act."

Easterbrook's ecorealism rests on a foundation of political naïveté. Few environmentalists have ever doubted that we had the technical know-how to lessen human damage to the environment. The problem has always been whether we had the political will and moral energy to do so. But *A Moment on the Earth* has virtually nothing to say about human arrogance, greed, stupidity, and evil—all of those things that keep people and whole societies from doing what they can do and what they ought to do. Nor does it have anything but scorn for recent attempts to recalibrate our ethics and religious beliefs to include care for the natural world. Easterbrook, who describes himself as a liberal Presbyterian, parodies this belief system as "Earthianity."

The enviros for whom he has such scorn, the very people who brought about the "extraordinary success of modern environmental protection," are more often than not motivated by some larger vision of reality than Easterbrook wishes to acknowledge. The global movement to preserve a habitable and beautiful earth is not just fuzzy sentimentality or self-interest: it is about transcending self-interest in order to be faithful to larger duties and obligations. For many enviros, it is about the sense of wonder experienced before the mystery of creation itself. For people so motivated, the principle of caution preempts economic and technological carelessness. Easterbrook likes the results of the enviros efforts—environmental protection—but does not like the combination of moral outrage and plain good sense that have so far made it happen.

A Moment on the Earth is already out of date, but its influence will, unfortunately, linger for a long time. Yes, there have been notable environmental successes, but they mostly concerned issues that were relatively easy to deal with. Even these gains are tentative and currently under assault. The hard issues and the difficult choices are still to come. When we do finally confront these things, we will discover that they are as much involved with politics and morals as with science and technology. That being the case, it's foolish to hold the victory party quite so soon.

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$25.00

GOING BROKE?

Costs of the
Endangered Species Act

as Revealed in

Endangered Species Recovery Plans

by the
National Wilderness Institute

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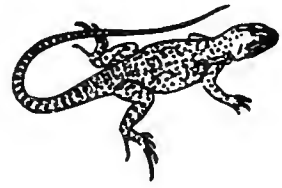

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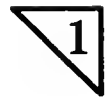
All drawings are from respective U.S. Fish & Wildlife Service Endangered Species Recovery Plans.



Executive Summary

The Endangered Species Act was designed to identify plants and animals endangered with extinction, add them to a list of federally regulated species, and then improve their condition to the point at which they could be removed from the list. After a plant or animal is added to the list, the US Fish & Wildlife Service (FWS) or the National Marine Fisheries Service (NMFS) typically produces a plan incorporating the steps that need to be taken to improve the status of a particular plant or animal, a "recovery plan." A plant or animal has reached the Act's ultimate goal of "recovery" once it has improved to the point where it can be "delisted." Between its listing and delisting, the level of protection afforded to a species may change. A species originally listed as "Endangered" whose status has improved to "Threatened" has gone through a "downlisting."

This study reviews the cost estimates of 306 recovery plans written between passage of the Act and 1993. These plans include 8 Amphibians, 72 Birds, 57 Fish, 58 Invertebrates, 35 Mammals, 135 Plants and 23 Reptiles covering 388 of the 853 currently listed endangered and threatened species. In most cases, recovery plans include cost estimates for some of their planned actions. In Section 2, these estimated costs are the basis for a list which ranks reviewed recovery plans by cost with all values expressed in constant 1994 dollars. A brief summary of the review:

Highest Plan Cost	$88,236,000
Median Plan Cost	$367,000
Average Plan Cost	$3,059,391
Total Cost of Plans	$884,164,000

(For purposes of comparison, the Fish and Wildlife Service has requested $81,411,000 for endangered species in FY 1995.)

The reader is cautioned, however, that these figures do not reflect the actual cost of the Endangered Species Act. Many costs are not revealed in the recovery plan cost estimates. Additional costs include:

Actions called for in recovery plans for which costs are not estimated

Costs of maintaining at present levels, downlisting or delisting for those species which have plans with interim goals such as 'stabilization'

Costs of recovery for 466 species already listed but not covered by one of the plans reviewed in this study

Costs of recovery and other associated costs as mentioned above for some fraction of the current 3,996 official candidate species which will be added to the Endangered Species List

Listing and delisting of candidates or delisting species already on the list

Expenditures on any species in this study prior to the approval of its recovery plan

Costs of reduced or terminated business activities and jobs lost as a result of conflict

Increased costs of providing services by federal, state, county or city governments which result from conflict

Losses of tax revenue from reduced or terminated business income, personal income or property devaluation resulting from conflict

Derivative costs of public assistance provided to individuals who have lost jobs as a result of conflict

Section 3 provides a comparison between estimated plan costs and actual government expenditures over a three year period. Section 4 provides a count of those plans that reveal existing or potential conflicts with different activities, businesses, etc. which could result in higher total costs of implementation. Section 5 provides examples of the types of costs described on the previous page that are generally not reflected in recovery plan estimates.

During the course of reviewing the recovery plans in this study, several other important findings were made including:

- Plans often reveal that there is little information about plants or animals considered endangered or threatened
- Plans often call for additional laws and regulations
- Plans, in conflict with the definition of 'conservation' in the Act, often state that recovery is unlikely or impossible
- Plans often have criteria for 'delisting' or 'downlisting' which appear unattainable
- Plans routinely call for habitat purchase; often because the land on which a species exists is privately owned

Section 6 provides examples of these findings. Notes taken from selected recovery plans demonstrate in Section 7 that the cost estimates of recovery plans are often incomplete, and these notes illustrate some of the findings listed above or are of interest for other reasons. Section 8 offers some brief suggestions for improvement of current endangered species policy. Section 9 provides the outline for a guesstimate of the cost of implementing the Endangered Species Act, and Section 10 contains comments on the methodology used in calculating the costs in recovery plans. Finally, the Appendices contain samples of implementation schedules from several recovery plans and a recovery plan action diagram.

Conclusion

The federal endangered species program is out of control. Expenditures identified in recovery plans grossly understate the actual costs of recovery because many tasks called for in the plans do not include cost estimates and none of the costs imposed on the private sector are included. The government has no idea of the true cost of the endangered species program. Cost estimates in the recovery plans do not correspond to actual expenditures identified in ESA expenditure reports given to Congress.

Though unmeasured, the costs of implementing the Act as currently written are in the multi-billions, yet in over twenty years not a single endangered species has legitimately been recovered and delisted as a result of the Endangered Species Act.

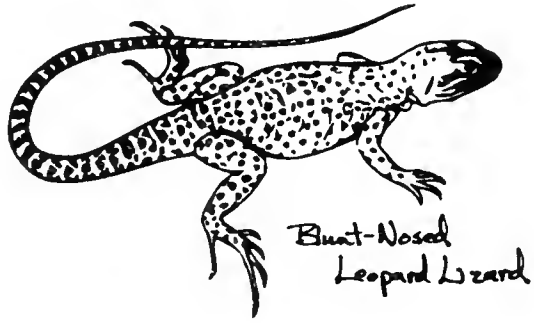
Rational, balanced decisions on how to allocate resources available for endangered species cannot be made under the law as presently written.

This study is only a first step toward gaining a full understanding of the costs of the Endangered Species Act. All figures used in this report are taken from government estimates of the cost of implementing official recovery plans.

RECOVERY PLANS RANKED BY COST

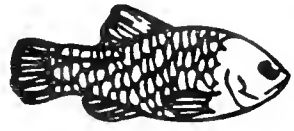
TOP 10 SPECIES

1	Atlantic Green Turtle	$88,236,000[1]
2	Loggerhead Turtle	$85,947,000[1]
3	Blunt-Nosed Leopard Lizard	$70,252,000[2]
4	Kemp's Ridley Sea Turtle	$63,600,000[3]
5 - 8	Colorado Squawfish Humpback Chub Bonytail Chub Razorback Sucker	$57,770,000[4]
9	Black-Capped Vireo	$53,538,000
10	Swamp Pink	$29,026,000

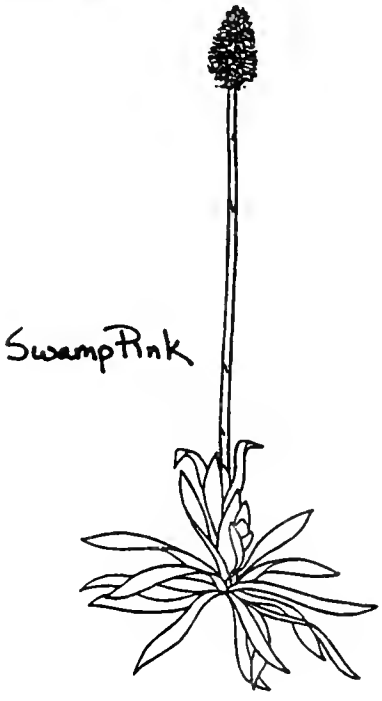


Whooping Crane	$22,639,000
Florida Panther	21,438,000
West Indian Manatee (Florida population)	20,849,000
Bald Eagle (Pacific population)	19,757,000
Guam Broadbill Guam Rail Guam Micronesian Kingfisher Guam Bridled White-Eye Mariana Crow	19,081,000
Florida Bonamia Pygmy Fringe Tree Snakeroot Scrub Celery Highlands Scrub Hypericum Scrub Blazingstar Scrub Lupine Papery Whitlow-Wort Wireweed Polygonella Scrub Plum Carter's Mustard Florida Ziziphus	16,065,000

Ash Meadows
Naucorid



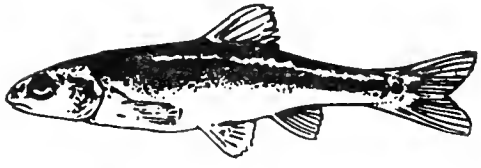
Devil's Hole Pupfish



Hawaiian Creeper Hawaii 'Akepa 'Akiapola 'au 'O'u	$15,410,000
Cui-Ui	14,797,000
Eastern Timber Wolf	14,310,000
Golden-Cheeked Warbler	12,602,000
Guam Mariana Fruit Bat Little Mariana Fruit Bat	9,606,000
Bald Eagle (Northern States population)	9,159,000
Devil's Hole Pupfish Warm Springs Pupfish Ash Meadows Amargosa Pupfish Ash Meadows Speckled Dace Ash Meadows Naucorid Spring Loving-Centaury Ash Meadows Ivesia Ash Meadows Blazing Star Ash Meadows Gumplant Amargosa Niterwort Ash Meadows Milk-Vetch Ash Meadows Sunray	8,373,000

Red-Cockaded Woodpecker	$8,315,000
Blue Pike	7,986,000
Grizzly Bear	7,761,000
Arizona Trout	7,228,000
Leatherback Sea Turtle	7,144,000
California Condor	6,496,000
Bald Eagle (Southwest population)	6,234,000
Kirtland's Warbler	5,643,000
Peregrine Falcon (Eastern population)	5,450,000
Salt Marsh Harvest Mouse California Clapper Rail	5,332,000
Red Wolf	5,137,000
Piping Plover (Interior Population)	4,969,000
Aleutian Canada Goose	4,726,000

Red-Cockaded Woodpecker



Spikedace

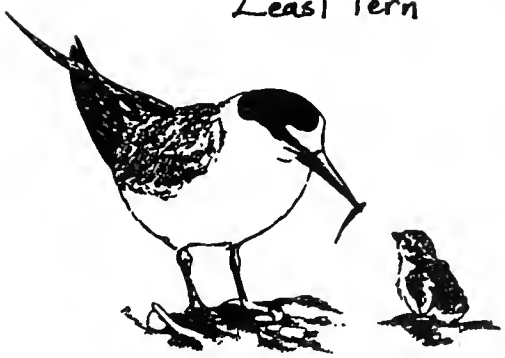
Puerto Rican Parrot	$3,909,000
Mariana Common Moorhen	3,854,000
Attwater's Greater Prairie-Chicken	3,715,000
Black-Footed Ferret	3,546,000
Bald Eagle (Southeastern population)	3,515,000
Spikedace	3,239,000
Pahrump Killifish	2,992,000
Everglade Snail Kite	2,739,000
Mississippi Sandhill Crane	2,725,000
Southern Sea Otter	2,598,000
Pecos Bluntnose Shiner	2,399,000
Lakeside Daisy	2,384,000
Light-Footed Clapper Rail	2,291,000

Small Kauai Thrush Large Kauai Thrush 'O'o Kauai Akialoa Kauai Nukupu'u 'O'u	$2,244,000
Least Tern	2,120,000
Fat Pocketbook Mussel	2,118,000
Mount Graham Red Squirrel	2,076,000
San Marcos Salamander Texas Wild-Rice San Marcos Gambusia Fountain Darter	1,957,000
Wyoming Toad	1,744,000
Peregrine Falcon (Pacific Coast population)	1,734,000
Selkirk Mountain Caribou	1,715,000
'Alala	1,626,000

Virginia Northern Flying Squirrel

Carolina Northern Flying Squirrel Virginia Northern Flying Squirrel	$1,550,000
Santa Cruz Long-Toed Salamander	1,531,000
Mona Ground Iguana	1,409,000
California Least Tern	1,396,000
Northern Rocky Mtn. Gray Wolf	1,379,000
Hawaiian Monk Seal	1,308,000
Salt Marsh Bird's-Beak	1,256,000
Pahranagat Roundtail Chub	1,240,000
Mona Boa	1,230,000
Hualapai Mexican Vole	1,218,000
Columbian White-tailed Deer	1,215,000
Vanikoro Swiftlet	1,187,000
Yuma Clapper Rail	1,177,000

Least Tern



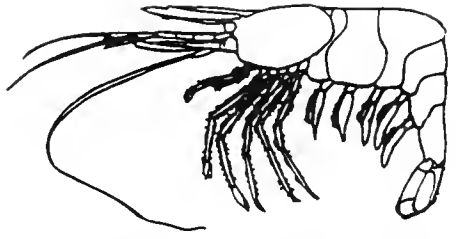
Masked Bobwhite	$1,164,000
Gray Wolf (Mexican population)	1,129,000
Curtis' Pearly Mussel	1,104,000
Blowout Penstemon	1,101,000
Monito Gecko	1,095,000
San Joaquin Kit Fox	1,084,000
Peregrine Falcon (Rocky Mnt. & Southwest population)	1,079,000
Woundfin	1,058,000
Utah Prairie Dog	1,036,000
San Clemente Island Indian Paintbrush San Clemente Island Larkspur San Clemente Island Broom San Clemente Island Bush-Mallow San Clemente Loggerhead Shrike San Clemente Sage Sparrow Island Night Lizard	1,035,000

Utah Prairie Dog

American Burying Beetle

West Indian Manatee (Puerto Rico population)	$1,005,000
Sonoran Pronghorn	998,000
Morro Bay Kangaroo Rat	981,000
Curtus' Mussel Marshall's Mussel Judge Tait's Mussel Penitent Mussel Stirrup Shell	974,000
Houston Toad	918,000
American Burying Beetle	906,000
Gila Topminnow Yaqui Topminnow	890,000
Large-Fruited Sand Verbena	882,000
Prairie Bush-Clover	878,000
San Francisco Garter Snake	855,000

Hawaiian Duck Hawaiian Coot Hawaiian Gallinule Hawaiian Stilt	$847,000
Inflated Heelsplitter	834,000
Peregrine Falcon (Arctic[5] and Alaskan)	805,000
Kearney's Blue-Star	794,000
Truckee Barberry	774,000
Maryland Darter	762,000
Loach Minnow	744,000
Kentucky Cave Shrimp	709,000
Roseate Tern	695,000
Puerto Rican Whip-Poor-Will	686,000
Malheur Wire Lettuce	678,000
Niangua Darter	674,000



Kentucky Cave Shrimp

Malheur Wire Lettuce

Puerto Rican Plain Pigeon	$671,000
White Cat's Paw Pearly Mussel	670,000
Fanshell	661,000
Cracking Pearly Mussel	661,000
Cumberland Pigtoe Mussel	656,000
Hinckley's Oak	642,000
White Bladderpod	642,000
Yellow-Shouldered Blackbird	641,000
Ring Pink Mussel	637,000
Leopard Darter	633,000
Palila	623,000
Alabama Beach Mouse Perdido Key Beach Mouse Choctawahatchee Beach Mouse	614,000

Kuenzler Hedgehog Cactus	$601,000
Higgins' Eye Mussel	595,000
Bald Eagle (Chesapeake Bay population)	590,000
Virgin Islands Tree Boa	578,000
Eastern Indigo Snake	568,000
Arkansas Fatmucket	560,000
Minnesota Trout Lily	559,000
Dark-Rumped Petrel Newell's Manx Shearwater	555,000
Speckled Pocketbook Mussel	547,000
American Crocodile	544,000
Delta Green Ground Beetle Solano Grass	535,000
Greenback Cutthroat Trout	528,000

California Brown Pelican	$510,000
Price's Potato Bean	507,000
Small Whorled Pogonia	500,000
Purple Cat's Paw Pearly Mussel	487,000
Piping Plover (Atlantic population)	486,000
Jaguarundi Ocelot Margay	479,000
Neosho Madtom	476,000
Coachella Valley Fringe-Toed Lizard	471,000
Fasset's Locoweed	463,000
Owens Pupfish	446,000
Cheat Mountain Salamander	443,000
Golden Coqui	436,000
Autumn Buttercup	436,000

Wood Stork	$428,000
Moapa Dace	428,000
Slender Rush-Pea	421,000
Clasping Warea	420,000
Unarmored Threespine Stickleback	411,000
Running Buffalo Clover	409,000
Kern Primrose Sphinx Moth	368,000
Virginia Round-Leaf Birch	367,000
Eureka Valley Dunegrass Eureka Valley Evening Primrose	365,000
Gopher Tortoise	363,000
Knowlton Cactus	362,000
Texas Snowbells	359,000
Rhamnaceae	349,000

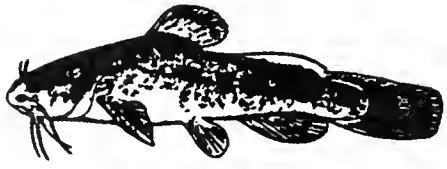
Unarmored Threespine Stickleback

Monito Gecko

Indiana Bat	$341,000
Valley Elderberry Longhorn Beetle	320,000
Nene (Hawaiian Goose)	317,000
Tar River Spinymussel	300,000
Cape Sable Seaside Sparrow	298,000
Florida Key Deer	297,000
Mohave Tui Chub	283,000
Mancos Milkvetch	283,000
Canby's Dropwort	275,000
Paiute Cutthroat Trout	268,000
Nichol's Turk's Head Cactus	264,000
Siler Pincushion Cactus	260,000
Brady Pincushion Cactus	259,000
Northern Wild Monkshood	259,000

Laysan Finch Nihoa finch Nihoa Millerbird	$257,000
Ozark Big-Eared Bats Virginia Big-Eared Bats	256,000
Palos Verdes Blue Butterfly	248,000
James Spinymussel	246,000
Black Lace Cactus	245,000
Small-Anthered Bittercress	244,000
Mountain Sweet Pitcher Plant	242,000
Audubon's Crested Caracara	240,000
Chihuahua Chub	239,000
Navajo Sedge	236,000
Florida Torreya	235,000
Tobusch Fishhook Cactus	229,000

Mount Graham Red Squirrel



Neosho Madtom

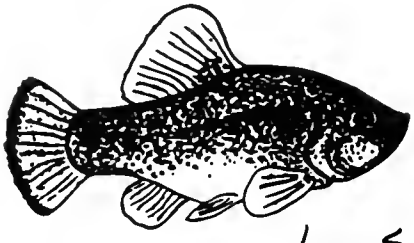
Desert Slender Salamander	$229,000
Aleutian Shield Fern	226,000
Sonora Chub	221,000
Puerto Rican Boa	218,000
Boulder Darter	215,000
Blackside Dace	215,000
Gila Trout	214,000
Navasota Ladies'-Tresses	209,000
Lotis Blue Butterfly	206,000
Conasauga Logperch Amber Darter	205,000
Harperella	202,000
Davis' Green Pitaya	200,000
Osterhut Milkvetch Penland Beard Tongue	199,000

Cape Fear Shiner	$195,000
Peebles Navajo Cactus	187,000
Nellie Cory Cactus	184,000
McDonald's Rock-Cress	184,000
New Mexican Ridge-nosed Rattlesnake	183,000
Ashy Dogweed	179,000
Okaloosa Darter	176,000
Peters Mountain Mallow	174,000
Zuni Fleabane	167,000
Wright Fishhook Cactus	166,000
Ruth's Golden Aster	165,000
Texas Poppy-Mallow	161,000
Key Tree Cactus	160,000
Kral's Water-Plantain	160,000

Slackwater Darter	$159,000
Gray Bat	159,000
Clear Creek Gambusia	152,000
Mesa Verde Cactus	149,000
Gypsum Wild-Buckwheat	146,000
Todsen's Pennyroyal	145,000
Bayou Darter	142,000
Smoky Madtom	140,000
Johnston's Frankenia	137,000
Lange's Metalmark Butterfly	136,000
Contra Costa Wallflower Antioch Dunes Evening-Primrose Spineless Hedgehog Cactus	135,000
Culebra Island Giant Anole	134,000
Sneed Pincushion Cactus Lee Pincushion Cactus	133,000

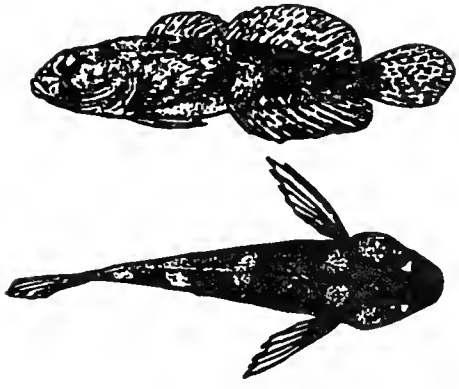
Relict Trillium	$132,000
Kendall Warm Springs Dace	131,000
Schaus Swallowtail Butterfly	128,000
Raven's or Presidio Manzanita	126,000
Beautiful Goetzea	124,000
Snail Darter	124,000
Leon Springs Pupfish	124,000
Robbins' Cinquefoil	124,000
Eastern Cougar	123,000
Iowa Pleistocene Snail	120,000
McKittrick Pennyroyal [6]	119,000
Clay-Loving Wild-Buckwheat	118,000
Vahl's Boxwood	118,000
Ringed Sawback Turtle	118,000

Alabama Leather Flower	$118,000
Santa Barbara Island Liveforever	117,000
Jesup's Milk-Vetch	116,000
Pecos Gambusia	112,000
Green Pitcher Plant	111,000
Tuberculed-Blossom Pearly Mussel Turgid-Blossom Pearly Mussel Yellow-Blossom Pearly Mussel	110,000
Cave Crayfish	110,000
Mohr's Barbara's Buttons	108,000
Uinta Basin Hookless Cactus	105,000
Chapman's Rhododendron	104,000
Comanche Springs Pupfish	103,000
Socorro Isopod	102,000
Shale Barren Rock-Cress	101,000



Macfarlane's Four-O'clock	$99,000
Pygmy Sculpin	98,000
Deltoid Spurge Garber's Spurge Crenulate Lead-Plant Small's Milkpea Tiny Polygala	95,000
Missouri Bladder-pod	95,000
Furbish Lousewort	93,000
North Park Phacelia	91,000
Nashville Crayfish	89,000
Vicia menziesii	87,000
Ozark Cavefish	85,000
St. Croix Ground Lizard	84,000
Longspurred Mint Scrub Mint Lakela's Mint	83,000

Socorro Isopod



Pygmy Sculpin

St. Thomas Prickly-Ash	$83,000
Brown Pelican	83,000
Flat-Spired Three-Toothed Snail	82,000
Heller's Blazingstar	78,000
Blue Ridge Goldenrod	78,000
Laysan Duck	76,000
Virginia Fringed Mountain Snail	75,000
Slender Chub	72,000
Yellowfin Madtom	72,000
Oregon Silverspot Butterfly	68,000
Decurrent False Aster	65,000
Florida Scrub Jay	65,000
Alabama Cavefish	62,000

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Dwarf Bear-Poppy	$62,000
Hawaiian Hawk	61,000
Chittenango Ovate Amber Snail	61,000
Red Hills Salamander	55,000
Spotfin Chub	55,000
Bunched Arrowhead	54,000
Plymouth Red-Bellied Turtle	50,000
Tennessee Coneflower	48,000
Harper's Beauty	47,000
Alabama Red-Bellied Turtle	45,000
Stock Island Snail	45,000
Sandplain Gerardia	44,000
Florida Grasshopper Sparrow	42,000

Bunched Arrowhead

Noonday Snail	$40,000
Mountain Golden Heather	40,000
Four-Petal Pawpaw Beautiful Pawpaw Rugel's Pawpaw	39,000
Borax Lake Chub	37,000
Persistent Trillium	32,000
Painted Snake Coiled Forest Snail	28,000
Hairy Rattleweed	26,000
Fragrant Prickly-Apple Cactus	25,000
Clay Phacelia	25,000
Watercress Darter	16,000
Florida Golden Aster	16,000

Oregon Silverspot Butterfly

Alabama Lamp Pearly Mussel[7]	No Estimate
Appalachian Monkeyface Pearly Mussel	No Estimate
Cumberland Bean Pearly Mussel	No Estimate
Cumberland Monkeyface Pearly Mussel	No Estimate
Dromedary Pearly Mussel	No Estimate
Fine-Rayed Pigtoe Pearly Mussel	No Estimate
Green-Blossom Pearly Mussel	No Estimate
Orange-footed Pearly Mussel	No Estimate
Pale Lilliput Pearly Mussel	No Estimate
Pink Mucket Pearly Mussel	No Estimate
Rough Pigtoe Pearly Mussel	No Estimate
Shiny Pigtoe Mussel	No Estimate
Tan Riffle Shell Mussel	No Estimate
White Warty Back Pearly Mussel	No Estimate
Flattened Musk Turtle	No Estimate
Shortnose Sturgeon	No Estimate

[1] *Costs shared between the loggerhead turtle and the Atlantic green turtle have been allocated equally.*
[2] *Costs have been taken from the 1980 plan. Although many of the tasks are similar, the 1985 revision contains few cost estimates. While both plans name the same areas to be 'protected' or 'secured' only the '80 plan attaches any cost estimate to these activities.*
[3] *An unspecified portion of this amount is shared with recovery costs of other sea turtles.*
[4] *The Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin covers only tasks in the upper basin excluding the San Juan River. Separate plans were prepared for the Colorado Squawfish, Humpback Chub and Bonytail Chub but they were not included in calculations in this report and were treated as a group here with the razorback sucker. Recovery costs outside of those covered by the Implementation Program for upper basin fish as referred to in the squawfish plan are not reflected in this figure.*
[5] *Arctic Peregrine Falcon— Proposed for delisting. FWS Director Mollie Beattie attributed its recovery to the banning of DDT which is unrelated to the Endangered Species Act.*
[6] *McKittrick Pennyroyal— delisted recently as a "data error" because FWS discovered it was more plentiful than originally believed. It has not been included in the calculations for total, average and median costs of recovery plans.*
[7] *Plans having no estimated costs (beginning with the Alabama Lamp Pearly Mussel) were not included in the calculations of total, average and median costs.*

3

Recovery Plan Estimates vs. Actual Government Expenditures

As you refer to the chart on the following page, note that figures in columns A and B are in constant '94 dollars. Column B reveals some of the government expenditures on selected species over the three year period 1989 - 1991 and do not reflect any of the expenditures made outside that period. Column D reveals that some of the species have been listed for more than two decades. Column C shows by percentage the large discrepancy between the cost estimates in recovery plans (column A) and in actual expenditures (column B) during a single three year period. These discrepancies may result from several factors including:

- Many of the costs identified in column B are for activities other than recovery—such as actions taken pursuant to Section 7 of the Endangered Species Act—and may not be identified in a recovery plan
- Many actions called for in recovery plans have no associated cost estimate
- Many actions in plans are deemed 'continuous,' but cost estimates are only provided for a short, designated period of time, usually three years.
- Many of the actions in recovery plans are likely underestimated
- Many plans have an interim goal such as 'stabilizing a population' and do not reflect the cost of recovering a species in accordance with the law

Additionally, it is important to note that the figures in column B do not represent a complete accounting of the total cost of the respective endangered or threatened species over the period 1989 - 1991. These are the only figures currently available but do not include any costs borne by the private sector. Additionally, these costs may not present a complete picture of governmental (federal, state, county or local) expenditures on the respective species during the three year interval as is revealed in the report from which they were drawn, "Federal and State Endangered Species Expenditures, for the Fiscal Years 1991, 1990 &1989, U.S. Fish & Wildlife Service."

The FWS report states:

> *"A good faith effort was made to develop species by species expenditures for this report. However, the information presented again this year does not reflect the total governmental (federal and state) effort toward threatened and endangered species conservation and presents an incomplete funding picture... A significant portion of... conservation activities at all levels include law enforcement, consultation, recovery coordination, and other actions that are not easily or reasonably funded by species* [easily attributed to a particular plant or animal]. *Accounting procedures for staff salaries and operational, maintenance and other support services are not normally creditable towards individual species totals. Also, there exists significant variability among the various federal and state agency reports."*
> *"Also not recorded here are the extensive efforts of the private sector; many groups, individuals, corporations, and others have contributed a considerable amount of resources and volunteer time towards listed species."*

RECOVERY PLAN ESTIMATES VS. ACTUAL GOVERNMENT EXPENDITURES

	A Recovery Plan Cost Estimate	B Identified Government Expenditures 1989-91	C Expenditures as a % of Recovery Plan Cost Estimate	D Year added to Endangered List
Black - Footed Ferret	3,546,000	4,208,000	119%	1967
Red-Cockaded Woodpecker	8,315,000	14,987,000	180%	1970
Higgens' Eye Pearly Mussel	592,000	1,382,000	233%	1976
Okaloosa Darter	176,000	416,000	236%	1973
Indiana Bat	341,000	822,000	241%	1967
Gray Bat	159,000	606,000	381%	1976
Masked Bobwhite	1,164,000	4,574,000	393%	1967
Iowa Pleistocene Snail	120,000	471,000	393%	1978
Valley Elderberry Longhorn Beetle	320,000	2,330,000	728%	1980
Schaus Swallowtail Butterfly	128,000	1,417,000	1,107%	1984
Florida Scrub Jay	65,000	21,671,000[1]	33,340%	1987

[1] *Plans for all other species on this list were written prior to 1989. This plan was written in 1990. The known 1991 government expenditures for the Florida Scrub Jay were* $19,733,070.

The estimated costs in recovery plans do not reflect those costs imposed upon the private sector by implementation of the Endangered Species Act. Although these costs have not been reliably measured, they are certainly substantial. This fact is often revealed in instances of conflict between a protected species and some activity in the private sector such as developers and the California gnat catcher, Idaho ranchers and the Bruneau hot springs snail, Texas farmers and the San Marcos salamander or Southeastern forestry businesses and the red-cockaded woodpecker. The two columns below may give some indication of the likelihood that a particular activity will come into conflict with one or more of the endangered or threatened species covered by this study. The left hand column is a list of words which were searched for (including derivatives or related words/phrases) during a review of recovery plans. The right hand column reveals the number of plans in which a particular word occurred one or more times. For example, 153 plans mentioned the word 'agriculture' or a related word at least one or more times. Therefore, it is likely that more than a third of the 388 species covered in this review are already considered in conflict with some agricultural activity or threatened by some possible agricultural activity. In addition to the listed activities, at least 236 plans called for law enforcement actions/implementation, indicating that the author(s) perceived some human activity to be in conflict with or pose a threat to an endangered species.

Activity and the number of recovery plans in which it is mentioned	
Agriculture	153
Cattle	100
Collecting	117
Development	245
Forestry	113
Grazing	128
Habitat Manipulation [1]	199
Hunting/Fishing [2]	83
Irrigation	43
Mining	121
Off Road Vehicles	63
Oil/Natural Gas Development	64
Outdoor Recreation [3]	146
Pesticide (insecticide, herbicide & rodenticide)	150
Water Development (dams etc.)	147
Wetlands Degradation (draining, ditching, etc.)	21

[1] *A question currently before the courts is whether habitat modification can be considered a "take" of an endangered species even though no actual effect on an individual member of an endangered species has been demonstrated. Criminal violation of the prohibition against taking an endangered species could result in fines of up to $50,000 and a jail term of one year for each violation. USFWS has warned property owners that actions such as creating firebreaks or clearing vegetation could constitute a violation of the Act.*

[2] *Many occurrences of this or related words and phrases were in regard to the introduction of 'exotic' or non-indigenous game fish which are cited as competitors with, causes of hybridization of or predators of a federally threatened or endangered species.*

[3] *This activity can encompass other activities listed elsewhere such as hunting/fishing or off-road vehicles but also includes species such as the Chittenango Ovate Amber Snail and the Noonday Snail which are considered affected or potentially affected by park visitors or canoeists.*

COSTS THIS STUDY DOES NOT REFLECT

5

A. Decreases in property values

- The vivid news scenes from last October when wildfires swept through California charring 25,000 acres and destroying 29 homes are something most Americans can easily recall. Local homeowners point out that ESA restrictions made the area more vulnerable to fire. Because of kangaroo rat habitat, many homeowners could not get permission to clear brush or build firebreaks around their homes. "My home was destroyed by a bunch of bureaucrats in suits and so-called environmentalists who say animals are more important than people. The only way to protect against fire is to build a firebreak, and we weren't allowed to do that," complained rancher Ishmael Garcia. Another area resident, Michael Rowe managed to save his house by creating a firebreak by discing (removing vegetation by cutting into topsoil) and clearing a section of his property between the fire and his home. Months earlier, Rowe had unsuccessfully requested permission from the Fish and Wildlife Service to build a firebreak. FWS's Carlsbad office denied having ever explicitly told Rowe or his neighbors that discing would break federal law. However, FWS's written response to Rowe's request said the proposed firebreak posed "potential endangered species conflicts" and that harm to the rat or its habitat would make him "liable for both state and federal prosecution."

B. Lost jobs as a result of restrictions imposed by the Act

- During testimony to Congress, Professor Brian Gerber (one of the authors of the Forest Ecosystem Management Assessment Team report which includes the 'Option 9' plan for resolving the spotted owl issue) was asked about how many jobs would be lost as a result of implementing the plan and forgoing the harvest of 4 billon board feet. Professor Gerber stated that the multiplier would be 16.5 jobs lost per 1 million board feet or a total of 66,000 jobs.

C. Reduced or terminated business activities

- Cindy and Andy Domenigoni, Sacramento farmers, have lost $75,000 of their annual gross income since 1990 because of ESA prohibitions against farming 370 of their 720 tillable acres because of protections afforded the California kangaroo rat.

- Brandt Child planned to build a campground and golf course on his property in Three Lakes, Utah. The project, however, was brought to a halt when the Service declared Child's pond to be prime habitat for the endangered Kanab Ambersnail. The area was fenced off, people were no longer allowed on the pond's banks, and Child was forbidden to work in the area. He dutifully contacted FWS one day to report that a flock of domestic geese had taken up residence at his pond which might result in violations for the geese's owner if any snails were consumed. FWS requested the Utah Department of Wildlife and Resources to send someone to shoot the geese, remove their stomachs and bring the contents to Salt Lake City so they could determine how many snails had been eaten. But when a state wildlife agent and a Highway Patrolman arrived and saw newsmen and photographers, they decided not to shoot the geese. When it became clear that the press intended to stay to see what would happen, the wildlife agent decided that because the geese were domestic animals, not wildlife, he did not have jurisdiction. Later, FWS devised a new strategy which included inducing vomiting in the geese which would provide evidence of snails consumed by the geese. The results proved negative. Mr. Child has personally estimated his loss at $2,500,000.

- An example of the high cost the Act can impose upon the private sector is FWS's jeopardy opinion to the Shorelands Company regarding a 740 acre property known as the Baumberg Tract in the San Francisco Bay area. The property, formerly a salt harvesting facility, has salt laden clays that are barren, sterile and support no vegetation. The Service's jeopardy opinions stated that development there would endanger the California clapper rail, a hen shaped marsh bird, the California least tern, a water bird, and the salt marsh harvest mouse. However, none of these species inhabits the property and there is no suitable habitat at the site nor any prospect that suitable habitat could naturally develop. FWS jeopardy opinion stated that global warming will result in the oceans and, therefore, San Francisco Bay, rising dozens of feet and as a result existing habitat for these endangered species would be inundated and new habitat would have to be created at sites like the Baumberg Tract. After investing over $12,000,000, the company which had planned to develop the property has now filed for bankruptcy. FWS had previously identified this property as one of its top acquisition priorities.

- A 37-foot draw down of Idaho's Granite Dam was conducted to test the physical impact of a plan to recover and manage the sockeye salmon. Thousands of other fish were stranded and killed, a marina went bankrupt, docks were destroyed, and half a million dollars damage was done to a road in neighboring Whitman County, Washington. According to the Director of the Port of Lewiston, physical damage to the port area reached almost $2,000,000 and business losses were over $3,000,000. Major General Harrail of the Corps of Engineers has stated that as research progresses a price tag in excess of a billion dollars "is in fact becoming a probability."

D. Derivative costs such as support provided to individuals who have lost their jobs as a result of the Act

- Professor William McKillop from the University of California at Berkley estimated in 1993 that the increase of unemployment compensation resulting from the implementation of the plan for the Northern Spotted Owl known as Option 9 to be $745,900,000.

E. Costs to federal, state, county or city governments which result from conflict with the Act

- The Act provides that all federal agencies must consult with the FWS when any activity permitted, funded or conducted by that agency may affect a listed species or designated critical habitat. If the Service determines that one of these activities may jeopardize the existence of an endangered species or its critical habitat it issues a 'jeopardy opinion' which prohibits the activity from being carried out as planned. While FWS does not issue an extraordinary number of jeopardy opinions, the Service does often provide modifications to actions which the Service terms "reasonable and prudent alternatives" in order that a party may avoid having a project blocked entirely. These alternatives can prove expensive.

- An observatory construction project managed by the University of Arizona and conducted in cooperation with the Smithsonian, the Vatican and the Italian and German governments came into conflict with the federally listed Mount Graham red squirrel. The site of the controversy is the Pinaleno Mountains in Graham County, Arizona on Forest Service property. The Mount Graham red squirrel is a subspecies of the abundant, common red squirrel from which it is distinguished by such traits as being somewhat smaller than other nearby red squirrels and a "higher pitched chatter and generally narrower skull." In a GAO deposition, FWS biologist Leslie Fitzpatrick was questioned about the "reasonable and prudent alternatives" suggested by FWS so that the observatory could be constructed without jeopardizing the squirrel's existence. Ms. Fitzpatrick responded:

> "...There was some effort made by the Regional Office to suggest features that would make the development unpalatable to the Forest Service and University. FWS did not want to take a stand against development but hoped to make their suggestion a poison pill that would cause the Forest Service to reject development or the University to abandon the project."

FWS's annual reports on endangered species expenditures reveal that the Forest Service has spent about $800,000 on the squirrel between 1989 and 1990 alone.

F. Losses of tax revenue from reduced or terminated business or property devaluation

- According to the Deputy Chief Tax Appraiser in Travis County, Texas, property values decreased some $358,700,000 in 1991 due to the listing of the black-capped vireo and golden-cheeked warbler to the federal list of Endangered and Threatened Wildlife and Plants. As a result, a shortfall in tax revenue to the City of Austin was estimated at $2,100,000.

G. Costs for implementing recovery plans for approximately 466 listed species which are not covered by a recovery plan in this study

- 289 (plans) • $3,059,391 (average cost per plan) = $884,164,000
- 466 (species) • (average cost for these plans) = ? dollars

H. Costs of recovery and other associated costs as mentioned above for approximately 3,996 candidate species, some fraction of which will be added to the Endangered Species List

- This fraction, estimated to be in the range of 43% to 60% of all candidates by the Inspector General's 1990 Audit Report, appears in the calculations below for percent of total candidates to be listed in the future.

- (43%) 1,718 • (average cost for these plans) = ? dollars
- (60%) 2,398 • (average cost for these plans) = ? dollars

I. Listing and Delisting of candidate species and delisting of currently listed species

- In 1990 the federal government has estimated that to list a single species costs an average of $60,000, while delisting a single species averaged $37,000—that is $97,000 (or $110,580 in 1994 dollars.)

- $42,000 (dollars to delist) • 853 (total number of currently listed species) = $36 Million

- $110,580 (list and delist) • [(43% candidates) 1,718 to (60% candidates) 2,398] = $190-265 Million

General findings

During the course of reviewing the recovery plans covered by this study several other important findings were made including:

A. Plans often reveal that there is little information about plants or animals considered endangered or threatened

Examples:

Alabama Lamp Pearly Mussel: "Other aspects of the ecology of this species are totally unknown." "The historically restricted distribution of *L. virescens* and lack of information about changes in various stream populations prevents a more precise determination of the reasons for the species's decline."

Atlantic Green Turtle: "More information is needed before detailed distribution maps or estimates of population number and structure can be made..." "The number of nests deposited in Florida appears to be increasing, but whether this number is due to an increase in the number of nest or more thorough monitoring of the nesting beeches is uncertain."

Cracking Pearly Mussel: "Because of its rarity little is known of the mussels biology."

Cave Crayfish: "Sufficient data to estimate population size or trends is lacking."

Desert Slender Salamander: "No information is available on the historical distribution of the desert slender salamander..."

Flat-Spired Three-Toothed Snail: "We do not consider surveys to be extensive enough to provide reliable population estimates."

Higgins' Eye Pearly Mussel: "The historical distribution of *L. higginsi* is difficult to accurately assess because of the taxonomic problems involving the species complex to which it belongs." "Numerically *L. higgensi* may be less rare today than previously thought, but in all probability this reflects a significantly greater collecting effort and the ability of a larger number of collectors to identify it."

Hualapai Mexican Vole: "...the subspecies is considered poorly defined owing to limited material available..."

Kentucky Cave Shrimp: "The very small estimated population size of the species at the time of listing (approximately 500 individuals) made it stand out as being extremely vulnerable to extinction. Since the time of listing, new populations have been discovered... Population estimates... range from approximately 7,000 to 12,000 individuals."

Knowlton Cactus: "...there is inadequate biological data for *P. Knowltonii*..."

Louisiana Pearlshell Mussel: "...practically no information on the life history, population levels, and habitat requirements for this species..."

Mona Iguana: "The status of the Mona Iguana prior to... 1972... only can be inferred."

Noonday Snail: "Essentially nothing is known about the snail's biology," "No estimates of population size have been made since the exact range has never been determined."

Palos Verdes Blue Butterfly: "The historical distribution of the butterfly is unknown..."

Painted Snake Coiled Forest Snail: "Information on the snail's ecology and natural history is almost completely lacking."

Price's Potato Bean: "It is very likely that undiscovered populations of *A. priceana* exist..."

Puerto Rican Boa: "A lack of population estimates prevents reaching conclusions regarding the status of the species."

Red Hills Salamander: "Comparative data relating temporal trends in population densities are unavailable..."

Virginia Fringed Mountain Snail: "Almost nothing is known about the numbers, population dynamics or reproduction of *P. virginianus*..."

Virgin Islands Tree Boa: "Population trends cannot be determined because of lack of data," "lack of available information on this secretive, nocturnal snake precludes formulation of a quantitative recovery level."

In at least 79 of the 306 plans reviewed there was some degree of uncertainty regarding the taxonomic classification of an endangered plant or animal.

B. Plans often call for additional laws and regulations or the employment of legal tools other than the Act

Of the 306 plans reviewed in this study, at least 51 called for or suggested that additional laws or regulations be considered to protect a particular species. Numerous plans called for the application of other laws such as the Clean Water Act or consideration for the application of other federal laws such as designating a Scenic River to protect a species. Additionally, numerous plans called for encouraging, requesting or otherwise influencing state or lower level governmental entities to pass regulations, employ other laws or enforce ordinances, such as zoning laws, as a tool to protect listed species.

Examples:

Cumberland Monkeyface Pearly Mussel: "Investigate the use of Scenic River Status, mussel sanctuaries, land acquisition..."

Florida Golden Aster: "Arrange for protection of land through ownership, cooperative agreements with landowners or other legal measures."

Key Tree Cactus: "Local ordinances should be employed to prevent taking from non-federal lands."

Painted Snake Coiled Forest Snail: "The species cannot be fully secure without some control of land use in the cove." "If landowners are not in agreement, investigate other options for protecting habitat."

Blunt-Nosed Leopard Lizard: "Use zoning process and ordinances."

Swamp Pink: "In addition, the enforcement capability of existing regulations will be strengthened where possible, and nontraditional avenues for endangered species protection that may benefit *Helonias* (through wetlands legislation, soil erosion control requirements, etc.) will be investigated."

C. Recovery Plans often conflict with the definition of "conservation" in the Act by stating that recovery is unlikely or impossible

The Endangered Species Act defines "conservation" as the use of all methods and procedures necessary to bring listed species to the point at which the Act's protection is no longer needed. FWS states that, "The principal goal of the U. S. Fish and Wildlife Service and the National Marine Fisheries Service is to return listed species to a point at which protection under the Act is no longer required." Several recovery plans, however, conclude that delisting is unachievable or even not "desirable."

Examples:

Cave Crayfish: "Due to the apparent limited potential for discovering new populations, the delisting objective may never be attainable."

Florida Scrub Jay: "Because of the extreme usefulness of the Act in this case, it is not desirable to remove the scrub jay from protection under the Endangered Species Act." "There is no anticipated date of recovery because it may never be feasible to delist this species."

Mexican Wolf: "...the Mexican Wolf Recovery Team sees no possibility for complete delisting of the Mexican wolf."

Red Hills Salamander: [delisting] "may not be attainable within the foreseeable future because of the animals small range..."

Ring Pink Mussel: "Total recovery is not thought possible."

Spikedace: "Protection of existing population. Eventual delisting, if possible."

Tar River Spinymussel: "Though the ultimate goal is to recover the species to the point where it can be removed from the Federal List of Threatened and Endangered Wildlife and Plants, full recovery of the Tar River Spinymussel may not be possible."

Tuberculed-Blossom, Turgid-Blossom & Yellow-Blossom Pearly Mussels: "it is highly improbable, if and when living specimens of any one of the three subject species are found that... the species can ever recover to the point of delisting."

White Cat's Paw Pearly Mussel: "...recovery to the point where the species no longer requires protection under the Act is unlikely."

D. Plans often have criteria for "delisting" or "downlisting" which appear unattainable

Examples:

Iowa Pleistocene Snail: "With a return to glacial conditions it will be resuscitated over the major part of the upper Midwest, provided its relictual areas are preserved and maintained..."

Mount Graham Red Squirrel: "...at least 100 to 300 years will be necessary to restore Mount Graham red squirrel habitat."

Stock Island Snail: "Although no estimates of historical population sizes are available, the extant population is presumed to have been moderately stable in the recent past because its present habitat has been stable... for the last 40 years... 4.8 acres." Recovery criteria called for expanding the snail's population from the only known 4.8 acre habitat to 20 acres and establishing 30 new populations. "Hopefully, the 'recovered' population would then be able to withstand the major stress of a severe hurricane."

Utah Prairie Dog: "To establish and maintain the species as a self-sustaining, viable unit with retention of 90 percent of its genetic diversity for 200 years."

E. Plans often call for large scale habitat purchase

Of the 306 plans reviewed, at least 184 call for purchase or 'securing' of property for endangered species.

Examples:

Blunt-Nosed Leopard Lizard: " A current target acreage figure of 30,000 acres has been established for the San Joaquin Valley floor, with acquisitions emphasis on optional habitats containing high density blunt-nosed leopard lizard (BNLL) populations in identified "priority" habitat areas... conflicting land users will be reduced or eliminated in an effort to restore habitat to optimal condition. Consideration for delisting would be appropriate when similar objectives have been obtained for adjacent foothill and plain areas known to contain BNLL populations."

Eastern Indigo Snake: "two 10,000-acre tracts recommended for acquisition: one in GA, one in FL."

Loggerhead Turtle: Recovery criteria require that "25% of all available nesting beaches (560 km) is in public ownership..."

7

NOTES FROM SELECTED RECOVERY PLANS

(DOLLAR FIGURES MENTIONED IN THIS SECTION ARE NOT ADJUSTED FOR INFLATION)

Common Name: Alabama Lamp Pearly Mussel, invertebrate
Scientific Name: *Lampsilis virescens*
Taxonomic Status: Species
Recovery Plan Goal: Delisting
Notes: None of the plan's 17 tasks have a cost estimate, including: "Determine... present distribution and status," "Implement reintroductions," "Locate suitable sites" and "Conduct life history research." The plan states: "Other aspects of the ecology of this species are totally unknown," and "The historically restricted distribution of *L. virescens* and lack of information about changes in various stream populations prevents a more precise determination of the reasons for the species decline."

Common Name: American Crocodile, reptile
Scientific Name: *Crocodylus acutus*
Taxonomic Status: Species
Recovery Plan Goal: "Due to the nature and the extent of the threats to the crocodile, complete delisting may never be possible." Reclassification to threatened is the "long term objective."
Notes: Fifteen of the plan's 36 tasks have no cost estimate, including "Acquire suitable habitat." The plan states: "[*Crocodylus acutus*] reaches its northern range limit in southern Florida," "Little is known of American crocodile's behavior pattern or daily and seasonal activity patterns," and "The numbers of crocodiles in South Florida during the late Nineteenth Century is unknown, although it seems likely it was not a common animal." The plan attributes decline to two human activities, habitat alteration and direct disturbance of crocodiles or their nests. However, the plan states that known human-related mortality from 1971 to 1982 totaled 24 deaths, while 15% of nests in Florida Bay were destroyed by raccoons in the period 1970 - 1974." The plan also states, "The effects of commercial and sport fishing on crocodiles are unknown...," while one task includes "regulate commercial fishing in high mortality areas," "Regulate sport fishing, camping, boating and other public use of nesting areas during nesting season," and "Current human-related factors are clearly unnatural..."

Common Name: Arkansas Fatmucket, invertebrate
Scientific Name: *Lampsilis powelli*
Taxonomic Status: Species
Recovery Plan Goal: Delisting
Notes: According to the plan, "It is not possible to determine costs beyond the first few years. Cost estimates for the tasks to be conducted over the next three years total $528,000." $200,000 is dedicated to developing a life history.

Common Name: Atlantic Green Turtle, reptile
Scientific Name: *Chelonia mydas*
Taxonomic Status: Species
Recovery Plan Goal: Delisting in the US
Notes: Plan statements include: "More information is needed before detailed distribution maps or estimates of population number and structure can be made..." and "The number of nests deposited in Florida appears to be increasing, but whether this number is due to an increase in the number of

nests or more thorough monitoring of the nesting beeches is uncertain." According to the plan, egg clutch counts totaled 736 in '85 , 350 in '86 , 866 in '87, 466 in '88, 559 in '89 and 2,288 in '90; however, the area of beach measured varied. The ratio of clutches per kilometer surveyed was 0.56 in '86, 1.05 in '87, 0.47 in '88, 0.60 in '89, and 2.26 in '90. Criteria for recovery include 5,000 nests for 6 years and public ownership of 25% of all nesting beaches encompassing greater than 50% of total nesting activity. Plan tasks include prosecution of "individuals or entities responsible for hatchling disorientation." Hatchlings are believed to be disoriented when they see artificial lights from cars, houses, street lamps, etc. The plan includes coastal development, commercial fishing and marine pollution as major causes of decline but also includes such things as "pedestrian tracks can interfere with the ability of hatchlings to reach the ocean... [as do] physical objects such as beach chairs..." However, the plan also states that raccoons "may take up to 96% of all nests deposited on a beach."

Common Name: Black Lace Cactus, plant
Scientific Name: *Echinocereus reichenbachii albertii*
Taxonomic Status: Subspecies
Recovery Plan Goal: Delisting
Notes: The plan states, "The populations all appear to be healthy and reproducing well."

Common Name: Cave Crayfish, invertebrate
Scientific Name: *Cambarus zophonastes*
Taxonomic Status: Species
Recovery Plan Goal: "Due to the apparent limited potential for discovering new populations, the delisting objective may never be attainable."
Notes: The task to "protect identified properties" has no cost estimate. The plan states, "Sufficient data to estimate population size or trends is lacking."

Common Name: Chittenango Ovate Amber Snail, invertebrate
Scientific Name: *Succinea chittenangoensis*
Taxonomic Status: Species
Recovery Plan Goal: "To protect and ensure maintenance of the self-sustaining colony... at Chittenango Falls. Due to its extremely limited range, delisting may occur only as a result of verification of at least five additional self-sustaining colonies of these species..."
Notes: The plan states, "...an electrophoretic determination of the genetic distance between *S. chittenangoensis* and *S. ovalis* is justifiable, and will help determine the genetic viability and heterozygosity of the population, as well." The plan also states, "Trampling of the snail habitat and the snails themselves [by visitors to Chittenango Falls State Park] has been identified as a major threat." Recovery tasks include: "Restrict access of park patrons to the population and the habitat" and "Increase surveillance of patrons and enforce rules to keep them off falls." $24,500 is earmarked for "limiting access to Falls."

Common & Scientific Names: mammals
Choctawahatchee Beach Mouse, *Peromyscus polionotus ammobates*
Perdido Key Mouse, *P. p. trissyllepsis*
Alabama Beach Mouse, *P. p. allophrys*
Taxonomic Status: 3 Subspecies
Recovery Plan Goal: Downlisting

Notes: Plan statements include: "In order to protect prime beach mouse habitat, it may be necessary to close some areas to human use...," "Urge close confinement of cats in vicinity of beach mouse populations," "Encourage property owners to include restrictive agreements in sales and rental contracts requiring house cats to be confined," "Monitor activities planned for privately-owned lands. Through county planning boards, rezoning applications, various permit applications, etc., development plans for privately-owned lands should be monitored," and "Develop plan to provide for disposal of excess animals... contingency plans should be developed to handle any excess mice that cannot be disposed of by introductions into the wild."

Common Name: Cracking Pearly Mussel, invertebrate
Scientific Name: *Hemistena lata*
Taxonomic Status: Species
Recovery Plan Goal: "Downlisting. Because of the lack of available habitat for establishment of all needed populations, recovery is unlikely."
Notes: The plan states: "Habitat improvement cost for the species' recovery will not be known until the magnitude of specific threats is determined through research." "The downlisting date cannot be estimated at this time," and "Because of its rarity little is known of the mussel's biology."

Common Name: Cumberland Monkeyface Pearly Mussel, invertebrate
Scientific Name: *Quadrula intermedia*
Taxonomic Status: Species
Recovery Plan Goal: Delisting
Notes: Eighteen out of 18 "task costs have not been estimated for this plan." Some of the tasks include: "Determine... present distribution and status," "Survey rivers," "Reestablish populations," "Investigate the use of Scenic River Status, mussel sanctuaries, land acquisition..." and "Develop and implement a monitoring program." The plan states, "...it was reported by Ortman (1918) as a rare species" and "...it was apparently never abundant."

Common Name: Decurrent False Aster, plant
Scientific Name: *Boltonia decurrens*
Taxonomic Status: Species
Recovery Plan Goal: Delisting
Notes: The plan states, "Natural populations completely disappear and then reappear on a cycle apparently related to flood and drought."

Common Name: Desert Slender Salamander, amphibian
Scientific Name: *Batrachoseps aridus*
Taxonomic Status: Species
Recovery Plan Goal: Downlisting with "eventual delisting"
Notes: Sixteen of the plan's 37 tasks have no cost estimate including: "determine necessity of acquiring land," "Apparently it is a relictual species that had a wider distribution during wetter geological epochs," "At this time range, status and systematic affinities of this population are not known," "No information is available on the historical distribution of the desert slender salamander...," "perpetuation of moist habitat is essential to the salamander's survival," and "...since 80% of the watershed is privately owned, additional development is anticipated."

Common & Scientific Names: Eleven Florida Scrub Plants
Florida Bonamia, *Bonamia grandiflora*
Pygmy Fringe Tree, *Chionanthus pygmaeus*
Snakeroot, *Eryngium cuneifolium*
Highlands Scrub Hypericum, *Hypericum cumulicola*
Scrub Blazingstar, *Liatris ohlingerae*
Scrub Lupine, *Lupinus aridorum*
Papery Whitlow-wort, *Paronychia chartacea*
Wireweed, *Polygonella basiramia*
Scrub Plum, *Prunus geniculata*
Carter's Mustard, *Warea carteri*
Florida Ziziphus, *Ziziphus celata*
Taxonomic Status: 11 Species
Recovery Plan Goal: There are different goals for each of the species including: "prompt downlisting... and delisting," "downlisting and eventual delisting," and "avert extinction; protect population." "Recovery cannot be predicted at the present time."
Notes: The plan states, "The biggest expense will be for land acquisition and management." The majority of costs are mentioned in the plan's Executive Summary and include land purchases for a National Wildlife Refuge costing up to $14,000,000. Regarding enforcing Section 7 of the Endangered Species Act, the plan states that the "Scrub jay and lizards may provide extra leverage," and a plan task states, "Use habitat plan for Scrub jays, etc. to benefit plants."

Common & Scientific Names: Five Guam bird species
Guam Broadbill, *Myiagra freycineti*
Guam Rail, *Rallus owstoni*
Guam Micronesian Kingfisher, *Halcyon cinnamomina cinnamomina*
Guam Bridled White-eye, *Zosterops conspicillatus conspicillatus*
Mariana Crow, *Corvus kubaryi*
Taxonomic Status: 3 Species and 2 Subspecies
Recovery Plan Goal: Downlisting
Notes: The plan states, "The major cause of extinction for the Guam native forest birds has been predation by the introduced brown tree snake."

Common Name: Flat-Spired Three-Toothed Snail, invertebrate
Scientific Name: *Triodopsis platysayoides*
Taxonomic Status: Species
Recovery Plan Goal: Delisting.
Notes: Plan tasks with no cost estimates include "develop and implement management plan" and "easement or acquisition." The plan states: "Although this species is rare, the genus is widespread in North America, particularly in the East," "We do not consider surveys to be extensive enough to provide reliable population estimates," "The species is considered threatened because of heavy trampling of leaf litter by park visitors," and "Where such agreements are not feasible (or where unusually significant habitat occurs) easements or acquisition will be given greater consideration."

Common Name: Flattened Musk Turtle, reptile
Scientific Name: *Sternotherus depressus*
Taxonomic Status: Species
Recovery Plan Goal: Delisting
Notes: None of the plan's 8 tasks have costs specified. Plan statements include: "No basis for determining recovery costs at this time" and "Accordingly, achievement of the recovery goal will be a lengthy, complicated and potentially controversial process. All that can be reasonably be stated now relative to the time required for recovery is that, under the best of circumstances, it will take more than 3 decades."

Common Name: Florida Golden Aster, plant
Scientific Name: *Chrysopsis floridana*
Taxonomic Status: Species
Recovery Plan Goal: "Reclassification... could be considered if three viable populations were established... Delisting could be considered if 20 such population were secured... goal is subject to revision."
Notes: Ten of the plan's 13 tasks have no cost estimates. The ten include: "Arrange legal protection of land," "Develop methods to expand existing populations and start new ones," and "Conserve germ plasm." Plan tasks also include: "arranging for protection of land through ownership, cooperative agreements with landowners or other legal measures," and "Manage protected lands... through... burning, limited clearing of trees and shrubs and preventing excessive disturbance."

Common Name: Florida scrub jay, bird
Scientific Name: *Aphelocoma coerulescens coerulescens*
Taxonomic Status: Subspecies
Recovery Plan Goal: The plan states: "Because of the extreme usefulness of the Act in this case, it is not desirable to remove the scrub jay from protection under the Endangered Species Act," "The remaining populations on private land are under constant threat from development. Removing the scrub jay from the endangered species list would eliminate the protection these species are afforded on Federal land. Therefore, delisting the scrub jay is not a prudent goal for recovery of the species," and "There is no anticipated date of recovery because it may never be feasible to delist this species."
Notes: The plan states: "Once sufficient habitat is protected and basic research is complete, the cost of maintaining this species will be minimal... These costs do not reflect acquisition of land," "Recovery Criteria: the following criteria must be met in order to at least maintain the species at its present status and prevent reclassification from threatened to endangered... 4. [fourth recovery criterion] Use of scrub jay habitat management guidelines by developers when proposing development in scrub habitat," "The tameness and beauty of the bird make it desirable (although illegal) as a pet, and it is known to have been used for such purposes in the recent past," "Most present scrub jay populations occur on public lands. These birds are able to survive wherever their habitat has not been completely destroyed," "Unfortunately, most of the scrub islands favored by Scrub Jays are in areas of high real estate values," "Scrub Jays have persisted in some areas with no more than a few scrub oaks by the side of a road, surrounded by pastures, citrus groves, or pine plantations," "People have been seen with guns in the area along SR A1A, and Scrub Jays would present easy targets."

Common Name: Fragrant Prickly-Apple Cactus, plant
Scientific Name: *Cereus eriophorus fragrans*
Taxonomic Status: Subspecies
Recovery Plan Goal: Delisting
Notes: Thirteen of the plan's 17 tasks have no cost estimate. The plan states: "This cactus appears to reproduce prolifically by seed in the wild when a seed source and suitable germination sites are available" and "...[the cactus] can apparently be raised from seed without difficulty... each fruit apparently contains at least 700 seeds."

Common Name: Gopher Tortoise, reptile
Scientific Name: *Gopherus polyphemus*
Taxonomic Status: Distinct Population
Recovery Plan Goal: "Prevent endangered listing and delist"
Notes: Minimal figures are reported for "purchase/easement" with the note "costs are to be determined." The plan states: "The listed population of G. *polyphemus* could be considered relatively abundant... estimated 10,923 tortoises of > 23 cm carapace length in 252,246 acres of Mississippi; and 12,900 tortoises of > 23 cm carapace length were estimated to occur in 99,753 acres of Alabama habitat west of the Tombigbee and Mobile Rivers," "However, the species is nearing extinction in an estimated 11,898 acres of Louisiana habitat," "About 80 percent (121,000 hectares) of the available habitat occurs on corporately owned lands," and goes on stating, "Despite the relatively large number of extant individuals estimated, the long term prospects for survival are dimming." A reference document for the plan states: "Private landowners may resist efforts to conserve these species on their properties because they fear limitation regarding land use."

Common Name: Green-Blossom Pearly Mussel, invertebrate
Scientific Name: *Epioblasma torulosa gubernaculum (=dysnomia)*
Taxonomic Status: Subspecies
Recovery Plan Goal: Delisting
Notes: None of the plans 17 tasks have a cost estimate. Tasks include: "Investigate Scenic River Status, mussel sanctuaries, land acquisition...," "Determine... present distribution and status," "Survey rivers," "Reestablish populations," and "Develop and implement monitoring program." The plan states, "The species has apparently never had a wide distribution."

Common Name: Hawaiian Monk Seal, mammal
Scientific Name: *Monachus schauinslandi*
Taxonomic Status: Species
Recovery Plan Goal: Recovery
Notes: $22,000 thousand per year is the estimate to "collect scats/spews." There is no estimate for "Lobster feeding trials."

Common Name: Higgins' Eye Pearly Mussel, invertebrate
Scientific Name: *Lampsilis higginsi*
Taxonomic Status: Species
Recovery Plan Goal: Delisting
Notes: Plan tasks such as "Enhancement and restoration of viable reproductive populations" and "habitat preservation" have no cost estimate. $300,000 of the plans estimated task costs are dedicated to determining the habitat requirements of the mussel. The plan states: "While the literature indicates that Higgins' Eye was never abundant, it became increasingly rare around the turn of the

century (Coker, 1919)," "The historical distribution of L. *Higginsi* is difficult to accurately assess because of the taxonomic problems involving the species complex to which it belongs" and, "Numerically L. Higgensi may be less rare today than previously thought, but in all probability this reflects a significantly greater collecting effort and the ability of a larger number of collectors to identify it."

Common Name: Hualapai Mexican Vole, mammal
Scientific Name: *Microtus mexicanus hualpaiensis*
Taxonomic Status: Subspecies
Recovery Plan Goal: "Protection of existing populations"
Notes: "Criteria for downlisting or delisting the vole have not yet been determined." The plan states: "All habitats were diminished by drought conditions in 1988 and 1989" and "...the subspecies is considered poorly defined owing to limited material available..." The species is one of 12 recognized subspecies of *Microtus mexicanus*.

Common Name: Inflated Heelsplitter, invertebrate
Scientific Name: *Potamilus inflatus*
Taxonomic Status: Species
Recovery Plan Goal: Delisting
Notes: Costs are not included for the following: "Implement plan to restore habitat" and "These cost cannot be estimated until plans are developed for re-establishment of populations, if necessary." $600,000 is estimated for developing "life history data."

Common Name: Iowa Pleistocene Snail, invertebrate
Scientific Name: *Discus macclintocki*
Taxonomic Status: Species
Recovery Plan Goal: The plan "...is intended to provide decision makers with a possible set of procedures which if implemented will result in changing the status of the Iowa Pleistocene snail minimally from endangered to threatened, and feasibly to delisted."
Notes: The plan states: "All snail colonies are on algific talus slopes that mimic environmental conditions widespread in the Pleistocene but unavailable on a large scale today," "Thus the major long-term cause of decline is cyclic climatic change. The species has survived several such cycles in the past, however. With a return to glacial conditions it will be resuscitated over the major part of the upper Midwest, provided its relictual areas are preserved and maintained," and "...slopes show some damage attributable to foot traffic. Among the instances observed were hunters, casual hikers, plant and mushroom collectors and researchers on algific slope biota."

Common Name: Kentucky Cave Shrimp, invertebrate
Scientific Name: *Palaemonias ganteri*
Taxonomic Status: Subspecies
Recovery Plan Goal: Delisting
Notes: While several tasks have cost estimates the plan notes that actual total expenditures for the tasks are "unknown," for example, "Bring sewage treatment facilities up to adequate standards." The plan states, "The very small estimated population size of the species at the time of listing (approximately 500 individuals) made it stand out as being extremely vulnerable to extinction. Since the time of listing, new populations have been discovered... Population estimates... range from approximately 7,000 to 12,000 individuals."

Common Name: Key Tree Cactus, plant
Scientific Name: *Cereus robinii*
Taxonomic Status: Species
Recovery Plan Goal: Recovery
Notes: Nineteen of the plan's 45 tasks have no cost estimate. According to the plan, "Local ordinances should be employed to prevent taking from non-federal lands."

Common Name: Knowlton Cactus, plant
Scientific Name: *Pediocactus knowltonii*
Taxonomic Status: Species
Recovery Plan Goal: Recovery. "Because there is inadequate biological data for *P. Knowltonii* and because there is only one viable population, downlisting and delisting criteria cannot be established at this time."
Notes: In the comment section a TNC representative stated, "We certainly encourage the artificial propagation of Knowlton's cactus, but we want to approve the selection of whoever would be entering our land to make collections of seeds or taking material for cloning or grafting."

Common Name: Loach Minnow, fish
Scientific Name: *Tiaroga cobitis*
Taxonomic Status: Species
Recovery Plan Goal: "Protection of existing population. Eventual delisting, if possible."
Notes: The plan states: "Cost of recovery estimated over a minimum 20-year period yields a minimum total cost of $115,000.00 per year. This estimate is in 1989 dollars. The estimate does not include land or water acquisition."

Common Name: Loggerhead Turtle, reptile
Scientific Name: *Caretta caretta*
Taxonomic Status: Species
Recovery Plan Goal: Delisting
Notes: Recovery criteria includes "25% of all available nesting beaches (560 km) is in public ownership... and encompasses greater than 50% of nesting activity." The plan states, "It is not possible to estimate the size of the loggerhead population in the United States if one includes sub-adults."

Common Name: Louisiana Pearlshell Mussel, invertebrate
Scientific Name: *Margaritifera hembeli*
Taxonomic Status: Species
Recovery Plan Goal: Downlisting
Notes: $600,000 is dedicated to "life history research." The plan states, "With practically no information on the life history, population levels, and habitat requirements for this species, an estimate of the cost of recovery to the point of downlisting is not possible."

Common Name: Mariana Common Moorhen, bird
Scientific Name: *Gallinula chloropsus guami*
Taxonomic Status: Subspecies
Recovery Plan Goal: Downlisting.
Notes: The downlisting objectives are to protect and manage 975 acres of wetlands for a population 975 moorhens throughout its range at a cost of $3,854,000, or $3,952 per bird.

Common Name: Mariana Fruit Bat, mammal
Scientific Name: *Pteropus mariannus mariannus*
Taxonomic Status: Subspecies
Recovery Plan Goal: Downlisting
Notes: The plan states, "It will be necessary for conservation officers, military security police, and federal wildlife law enforcement agents to work together in a combined effort to eliminate fruit bat hunting." (Locally, fruit bats are a delicacy.)

Common Name: Mexican Wolf, mammal
Scientific Name: *Canis lupus baileyi*
Taxonomic Status: Subspecies
Recovery Plan Goal: "Conserve and ensure survival." The plan states, "...the Mexican Wolf Recovery Team sees no possibility for complete delisting of the Mexican wolf."

Common Name: Mona Iguana, reptile
Scientific Name: *Cyclura stejnegeri*
Taxonomic Status: Species
Recovery Plan Goal: Delisting
Notes: The plan states, "The status of the Mona Iguana prior to... 1972... only can be inferred" and it "probably has been threatened since pre-Columbian times." The plan also states, "...an apparent increase in juveniles from the last three breeding seasons has been observed... These 3 years have been characterized by above average rainfall, when less egg predation by wild pigs occurs." Plan tasks include: "Control cat, pig and goat populations through Mona Island, or extirpate if feasible," and the plan states, "Cats should be shot on sight, and a vigorous cat-trapping program implemented as soon as possible."

Common Name: Mount Graham Red Squirrel, mammal
Scientific Name: *Tamiasciurus hudsonicus grahamensis*
Taxonomic Status: Subspecies
Recovery Plan Goal: 'Stabilize'
Notes: The plan states, "Species status is unknown" and "...at least 100 to 300 years will be necessary to restore Mt. Graham red squirrel habitat." The Mt. Graham red squirrel is "one of 25 recognized subspecies" of the red squirrel. According to the plan, "...the Mt. Graham red squirrel is a distinct population that likely deserves subspecies status" and "The Mt. Graham red squirrel is slightly smaller than... the other red squirrel found in Arizona..."

Common Name: Nellie Cory Cactus, plant
Scientific Name: *Coryphantha minima*
Taxonomic Status: Species
Recovery Plan Goal: Recovery. "The criteria for downlisting and/or delisting the Nellie Cory Cactus have not yet been determined."
Notes: The plan states: "The total population of C. *minima* is approximately 40,000 to 80,000 plants over its total known range" and the "... population appears to be stable..." The plan also states, "Habitat on private lands lacks the protection afforded on public lands. Therefore, actions allowing direct habitat protection should be considered."

Common Name: Nichol's Turk's Head Cactus, plant
Scientific Name: *Echinocactus horizonthalonius nicholii*
Taxonomic Status: Subspecies
Recovery Plan Goal: Recovery. "The criteria for delisting cannot be established now."
Notes: Nine of 17 plan tasks have no cost estimate. According to the plan, "...monetary needs for agencies other than FWS are not identified and therefor Part III does not reflect the total financial requirements for the recovery of the species."

Common Name: Noonday Snail, invertebrate
Scientific Name: *Mesodon clarki nantahala*
Taxonomic Status: Subspecies
Recovery Plan Goal: Delisting
Notes: Tasks for which no cost estimates are provided include: "Manage habitat if needed" and "Develop management technique." The plan states: "It was listed as threatened in the July 3, 1978 Federal Register because of a proposal to widen US. Route 19 through the Nantahala Gorge," "Essentially nothing is known about the snail's biology," "No estimates of population size have been made since the exact range has never been determined," and "Human activity in the Gorge has increased dramatically over the years as the Nantahala River has become a very popular canoeing and kayaking spot. This increase in activity enhances the threat of forest fire or trampling, which would damage the unusual habitat that the snails need."

Common Name: Oregon Silverspot Butterfly, invertebrate
Scientific Name: *Speyeria zerene hippolyta*
Taxonomic Status: Subspecies
Recovery Plan Goal: Recovery
Notes: Many plan tasks have no cost estimates and include: "restrict insecticide use," "control butterfly collection," "restrict use of direct lighting," "implement silvacultural practices," "plant nursery reared Viola...," and "Coordinate FS land use." Only $1,000 is allocated to "secure additional private lands." The plan states: "There is a relatively large degree of variation and confusion surrounding the taxonomy of the genus," "this subspecies is distinguished by a somewhat smaller size and darker coloration at the base of the wings...," "The open meadows on Mount Hebo, an apparent anomaly, provide the necessary habitat requirement, unlike other inland areas. The precise reasons are still unclear," "The highly specialized salt-spray meadow habitat within the geographical range of the Oregon silver spot butterfly was never common," "The early seral community has always had a patchy distribution, occurring only where... or other man-related occurrences (e.g. grazing, controlled burning) have maintained an open meadow." Some plan actions are "restrict the use of direct lighting in and around meadows" and "Manage human access to beach areas."

Common Name: Painted Snake Coiled Forest Snail, invertebrate
Scientific Name: *Anguispira picta*
Taxonomic Status: Species
Recovery Plan Goal: Delisting
Notes: Plan tasks such as "Survey potential habitat," "manage habitat if needed" and "develop management techniques if needed" have no cost estimates. Regarding costs, the plan states, "no consideration is given for acquisition of land." According to the plan: the snail "is a geographically restricted species of a widespread and quite successful land snail genus," "The snail is considered endangered because the population is restricted to this one small area," "Information on the snail's ecology and natural history is almost completely lacking," "The species cannot be fully secure

without some control of land use in the cove," and "If landowners are not in agreement, investigate other options for protecting habitat."

Common Name: Palos Verdes Blue Butterfly, invertebrate
Scientific Name: *Glaucopsyche lygdamus palosverdesensis*
Taxonomic Status: Subspecies
Recovery Plan Goal: "...eventually to reclassify or delist the butterfly."
Notes: Many plan tasks have no cost estimate and include: "Secure and/or protect selected habitat sites," "Rehabilitate selected coastal sage...," "Obtain... stock for reintroduction...," "Develop and implement management plans...," and "Establish captive breeding program..." The plan states: "The Palos Verdes blue butterfly is morphologically distinguished from other races of the widely distributed species...," "The historical distribution of the butterfly is unknown...," and "The butterfly may be limited by interspecific competition with other lycaenid butterflies..."

Common Name: Pecos Bluntnose Shiner, fish
Scientific Name: *Notropis simus pecosensis*
Taxonomic Status: Subspecies
Recovery Plan Goal: Stabilization
Notes: "If stabilization has been achieved, delisting objectives will be determined in 2002."

Common Name: Plymouth Red Bellied Turtle, reptile
Scientific Name: *Pseudemys rubriventris bangsii*
Taxonomic Status: Subspecies
Recovery Plan Goal: Downlisting. "Complete delisting is unlikely due to the limited range of the taxon."
Notes: The plan states, "In his description, Babcock differentiated between *P.r. bangsii* from the nominant race by the relatively high shell of the Massachusetts form. This character is no longer considered diagnostic and a recent unpublished multivariate analysis of the morphological characters by Graham and Iverson suggests that the subspecies is invalid. Until this has been recognized the trinomial will continue to be used in this plan."

Common Name: Price's Potato-Bean, plant
Scientific Name: *Apios priceana*
Taxonomic Status: Species
Recovery Plan Goal: Recovery
Notes: Plan task costs do not include: "Control invasive species," "Determine buffer zones," and "It is very likely that undiscovered populations of *A. priceana* exist..."

Common Name: Puerto Rican Boa, reptile
Scientific Name: *Epicrates inornatus*
Taxonomic Status: Species
Recovery Plan Goal: "...determine specific and quantified and recovery goals."
Notes: Only two of 10 tasks have any estimated costs, and all steps are essentially information gathering. The plan states: "The Puerto Rican Natural Heritage Program Officer gives the species comparatively low priority due to frequent sighting in adequate habitat," "...boas are found in virgin forest and in areas that exhibit various degrees of human disturbance," "...these snakes were very abundant, frequently entering homes at night in search of rats," "It may be postulated that widespread deforestation in Puerto Rico during the 1800's reduced the population numbers and distribu-

tion. If so, increased sightings over the past ten years suggests a resurgence," and "A lack of population estimates prevents reaching conclusions regarding the status of the species."

Common Name: Puerto Rican Plain Pigeon, bird
Scientific Name: *Columba inornata wetmorei*
Taxonomic Status: Subspecies. One of "Three races of plain pigeon"
Recovery Plan Goal: Delisting
Notes: According to the plan, "The species is called 'Paloma Boba' (fool pigeon) in Cuba because of its lack of wariness" and "Biaggi (1970) described its flesh as 'exquisite'."

Common Name: Red Hills Salamander, amphibian
Scientific Name: *Phaeognathus hubrichti*
Taxonomic Status: Species
Recovery Plan Goal: Downlisting. Delisting "may not be attainable within the foreseeable future because of the animals small range..."
Notes: There is no cost estimate to "Determine and implement most appropriate habitat protection measures." The plan states, "There is no evidence that the animal has occurred outside its present range within historic times..." and "Comparative data relating temporal trends in population densities are unavailable..." The plan also states, "...that much of the habitat remaining was owned or controlled by paper companies (ca. 44%) and that only a tiny amount (61 hectares) was in public ownership."

Common Name: Ring Pink Mussel, invertebrate
Scientific Name: *Obovaria retusa*
Taxonomic Status: Species
Recovery Plan Goal: Downlisting. "Because of lack of needed habitat for all populations, recovery is unlikely," Total recovery for the ring pink mussel may not be possible," "Total recovery is not thought possible," and "The date of downlisting cannot be determined at this time."
Notes: Plan tasks without estimated costs include "Consider use of land acquisition to protect species." The plan states: "Habitat improvement costs needed for the species' recovery will not be known until the magnitude of the specific threats is determined through research," "As the species, is rare little is known about its life history," and "The species reproductive biology remains basically unknown..."

Common Name: Roseate Tern, bird
Scientific Name: *Sterna dougalli dougalli*
Taxonomic Status: Subspecies
Recovery Plan Goal: Delisting
Notes: Initial decline attributed to millinery trade, current threat comes from "large, aggressive gulls" which take over the best nesting sites and prey on eggs and young. "Only diligent, annual efforts to discourage gulls have maintained the four major colonies of roseates."

Common & Scientific Names: invertebrates
San Bruno Elfin, *Callophrys mossii bayensis*
Mission Blue Butterflies, *Icaricia icarioides missionensis*
Taxonomic Status: Subspecies
Recovery Plan Goal: "The primary objective of this Recovery Plan... is to maintain and enhance existing populations..."

Notes: Tasks with no cost estimate include: "Secure essential habitat... through cooperative agreements, easements or other protective strategies," "Secure selected sites through cooperative easements or other protective strategies," and "Restore habitat sites." The plan states, "Public ownership of habitat does not necessarily imply that complex natural processes necessary for maintenance of the habitat and species will continue to operate."

Common Name: Santa Cruz Long-Toed Salamander, amphibian
Scientific Name: *Ambystoma macrodactylum croceum*
Taxonomic Status: Subspecies
Recovery Plan Goal: Downlisting
Notes: Many tasks have no cost estimate. Recovery tasks include: "Acquire identified habitat," "Identify additional habitats for acquisition," "Identify additional upland habitat and acquire," and "Use zoning process and ordinances." According to the plan, "The former status of the Santa Cruz subspecies is not known since it was not discovered until 1954 and at that time the only known population was at Valencia." More have been found since that time. The plan also states, "The SCLTS is a relict form of a species that was probably widespread throughout much of California during and immediately after the last Pleistocene ice advance, 10,000 to 20,000 years ago..."

Common Name: Shortnose Sturgeon, fish
Scientific Name: *Acipenser brevirostrum*
Taxonomic Status: Species
Recovery Plan Goal: "The Plan is not an end in itself but is designed to serve as a "vehicle" to restore and maintain the shortnose sturgeon as a viable member of its ecosystem via accomplishments of specific Plan steps that may ultimately achieve the "Goal" of the Plan to remove the species from endangered status."
Notes: The plan states, "Furthermore, estimating costs of primary plan steps is impossible..." No cost estimate is given for any of the plan's tasks which include: "Determine modifications to improve habitat," "minimize impact to habitat from new projects," and 16 others.

Common Name: Small-Anthered Bittercress, plant
Scientific Name: *Cardamine micranthera*
Taxonomic Status: Species
Recovery Plan Goal: Recovery. "The recovery objective is considered an interim goal, because of the lack of specific data on biology and management requirements of the species."
Notes: There is no cost estimate to "Implement appropriate management techniques as they are developed from previous tasks."

Common Name: Socorro Isopod, invertebrate
Scientific Name: *Thermosphaeroma thermophilus*
Taxonomic Status: Species
Recovery Plan Goal: Delisting
Notes: Plan tasks with no cost estimate include: "provide for permanent flow of water" which may require "fee title purchase," "Provide additional flows of water," and "Easement-acquisition of Ft. Harmony Spring." The species habitat consists of "1m x 2m x 0.03m cement-lined animal watering tank, a smaller pool and approximately 40 meters of open irrigation pipe." The plan states, "protection of habitat from harmful contaminants and other negative impacts cannot be guaranteed because the habitat is on private land."

Common Name: Spikedace, fish
Scientific Name: *Meda fulgida*
Taxonomic Status: Species
Recovery Plan Goal: "Protection of existing population. Eventual delisting, if possible."
Notes: The plan states, "Cost of recovery estimated over a minimum 20-year period yields a minimum total cost of $115,000.00 per year. This estimate is in 1989 dollars. The estimate does not include land or water acquisition."

Common Name: Stock Island Snail, invertebrate
Scientific Name: *Orthalicus reses reses*
Taxonomic Status: Subspecies
Recovery Plan Goal: Delisting
Notes: Tasks with no cost estimations include: "establish accord with habitat owners," "educate against collecting," "evaluate predation," "Identify and ameliorate social problems relative to reintroduction," and "Establish reserve populations and monitor." The plan states: "...hermaphroditic subspecies currently confined to a small area of about 4.8 acres on stock island, Monroe County, Florida," "Information relating to the snail's life ecology is scant," "Their heterospecific status is further supported by the fact that interbreeding between *reses* and *nesodryas* is restricted by geographic separation, although there is a small degree of overlap between the two," "Although no estimates of historical population sizes are available, the extant population is presumed to have been moderately stable in the recent past because its present habitat has been stable and composition for the last 40 years. However, current and planned developments and renovations on the golf course will eliminate 1.6 acres of the 4.8 acres of remaining essential habitat. Some new habitat is also being created which may eventually offset this loss." Recovery criteria call for expanding the snails population from the only historically known 4.8 acre habitat to 20 acres and establishing 30 new populations. The plan states, "Hopefully, the 'recovered' population would then be able to withstand the major stress of a severe hurricane."

Common Name: St. Thomas Prickly-Ash, plant
Scientific Name: *Zanthoxylum thomasianum*
Taxonomic Status: Species
Recovery Plan Goal: "guidance for reversing the decline... and restoring... stable, secure, and self-sustaining status, thereby permitting... reclassified... and perhaps eventually allowing its removal."
Notes: Twenty of 25 tasks have no cost estimate and include: "Establish conservation easements," "Select sites for population introduction," "Assure site protection," and "Determine additional actions necessary." The plan states, "It appears that even the largest populations are not sufficient to allow regular pollination and viable seed production" and "If sites proposed are not already on protected land, steps must be taken to alter the status of such land to provide protection for new species' populations."

Common Name: Swamp Pink, plant
Scientific Name: *Helonias bullata*
Taxonomic Status: Species
Recovery Plan Goal: Delisting
Notes: $25,000,000 is allocated to habitat purchase. The plan states, "The majority of extant populations are found on private property." According to the plan there are 122 sites, one site with 10,000-25,000 clumps, and "Botanists are optimistic that new populations will be found." Accord-

ing to the plan, "In addition, the enforcement capability of existing regulations will be strengthened where possible, and non-traditional avenues for endangered species protection that may benefit *Helonias* (through wetlands legislation, soil erosion control requirements, etc.) will be investigated."

Common Name: Tar River Spinymussel, invertebrate
Scientific Name: *Elliptia steinstansana*
Taxonomic Status: Species
Recovery Plan Goal: "Though the ultimate goal is to recover the species to the point where it can be removed from the Federal List of Threatened and Endangered Wildlife and Plants, full recovery of the Tar Spinymussel may not be possible."
Notes: Several plan tasks with no cost estimate include: "Consider use of land acquisition to protect species" and "encourage establishment of mussel sanctuaries, high quality resource water designations, and other protective strategies..." According to the plan, the mussel "...has apparently always had a limited distribution."

Common & Scientific Names: invertebrates
Tuberculed-Blossom Pearly Mussel, Epioblasma torulosa torulosa
Turgid-Blossom Pearly Mussel, Epioblasma turgidula
Yellow-Blossom Pearly Mussel, Epioblasma floretina floretina
Taxonomic Status: 1 Species and 2 Subspecies
Recovery Plan Goal: According to the plan, "The ultimate goal... is to locate, maintain, and enhance any known populations..." and "it is highly improbable, if and when living specimens of any one of the three subject species are found that... the species can ever recover to the point of delisting."
Notes: The plan states, "Task costs have not been estimated for this plan."

Common Name: Utah Prairie Dog, mammal
Scientific Name: *Cynomys parvidens*
Taxonomic Status: Species
Recovery Plan Goal: Delisting
Notes: Recovery criteria include: "To establish and maintain the species as a self-sustaining, viable unit with retention of 90 percent of its genetic diversity for 200 years." The plan states: "Much of the increase in total prairie dog numbers can be attributed to the phenomenal increase in prairie dog numbers on private lands in the Cedar and Parowan valleys in the West Desert region," "In 1977, 73 percent of all Utah prairie dog colonies and 81 percent of the prairie dogs were located on private lands," and "Private land colonies will contribute to the survival of this species but cannot be counted for long-term survival [of] multigenerational populations due to the inability to ensure their continued protection from human disturbance."

Common Name: Virginia Fringed Mountain Snail, invertebrate
Scientific Name: *Polygyriscus virginianus*
Taxonomic Status: Species
Recovery Plan Goal: Delisting
Notes: The plan states: "Acquisition costs may be incurred in future years by contract," "Since publication of the original description in 1947, this peculiar land snail has eluded study because of its rarity, highly limited distribution and secretive habits. As a result, little is known about the life history of this species," "Almost nothing is known about the numbers, population dynamics or

reproduction of P. virginianus," "*P. virginianus* does not appear headed toward extinction through any known natural process despite the fact that burrowing habits, a cumbersome shell, small size, probable low reproductive capacity, and stenotype seriously impact its ability to disperse," "...a single dynamite blast or scoop by a bulldozer could erase the entire colony from its only known station," and "Once the owners of this area have been identified, alternatives for protection will be evaluated and the most practical method of protection, with the funds available, will be determined."

Common Name: Virgin Islands Tree Boa, reptile
Scientific Name: *Epicrates monensis granti*
Taxonomic Status: Subspecies
Recovery Plan Goal: Downlisting
Notes: Several plan tasks have no cost estimates including "acquisitions to be determined from future surveys." The plan states: the boa "...has been rarely encountered by scientists, and only 13 specimens are recorded...," "The species' absence from Puerto Rico is best explained by widespread extinctions of xeric-adapted herptefauna on Puerto Rico during the Pleistocene," and "Population trends cannot be determined because of lack of data." The plan also states: "lack of available information on this secretive, nocturnal snake precludes formulation of a quantitative recovery level" and "On small islands with boa populations, mongooses and cats should be eliminated using grids of live traps and other appropriate methods."

Common Name: White Cat's Paw Pearly Mussel, invertebrate
Scientific Name: *Epioblasma sulcata delicata = obliquata perobliqua*
Taxonomic Status: Subspecies
Recovery Plan Goal: "...protect only extant population... With such a low population level and restricted distribution, recovery to the point where the species no longer requires protection under the Act is unlikely."
Notes: The plan states, "Costs of land protection (fee acquisition, easement, management agreement) are to be identified." According to the plan, "Since 1970 only three living specimens and only three recently deceased individuals have been collected," and "The life history of the white cat's paw pearly mussel is unknown."

Common Name: Wyoming Toad, amphibian
Scientific Name: *Bufo hemiophrys baxteri*
Taxonomic Status: Subspecies
Recovery Plan Goal: Downlisting
Notes: According to the plan, "The Wyoming toad is a glacial relic known only from Albany County, Wyoming" and "...no definite cause of decline has been identified." The plan calls for "compensating landowners for income loss from protective and enhancement measures," and states, "Landowners should not be expected to incur major income losses to implement protective or enhancement measures..." as well as that land trades could reduce cost of land acquisition.

Suggestions for Improvement of Endangered Species Policies

- Establish scientific standards more strict than 'best available data' for the listing of plants and animals. In order to add a species to the endangered species list, information should be verifiable, reliable, accurate and sufficient for making a reasonable judgment as to the status of the plant or animal in question.

- Establish attainable recovery criteria in the law and in recovery plans.

- Allow citizens to file lawsuits to challenge a decision to add a species to the list. Currently, citizen lawsuits can only challenge the decision not to add a species to the list.

- Subject the recovery plan process to FACA, the Federal Advisory Commission Act. Currently, the recovery plan process is specifically exempt. FACA would force meetings to be announced and open to the public on recovery plans which include individuals outside of government service, and it requires certain types of record keeping.

- Use incentives rather than punitive regulations to encourage privately owned habitat.

- Establish mechanisms to prevent conflict of interest so that individuals involved in the listing process do not benefit personally from the recovery and recovery planning process.

- Base listing decisions solely on science. Remove "inadequacy of existing legal mechanisms" as a rational for listing, and raise standards for what constitutes a "threat" as a criterion for listing. The fact that a species is found on private property should not be considered, de facto, a threat.

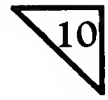
- Prohibit the future addition of subspecies and populations to the endangered species list unless by specific Congressional decision.

- Place moratoria on listing, and freeze the FWS recovery, consultation, permitting, law enforcement and listing budget until FWS demonstrates success at recovering species and removing them from the threatened and endangered list rather than simply employing the Endangered Species Act for national land use control.

Endangered Species Math

• Cost of implementing recovery plans for 388 species	$884,164,000
• Cost of activities without estimates	?
	BILLION(S)
• Cost of implementing recovery plans for 465 species not covered by this study	BILLION(S)
• Cost of implementing recovery plans for some fraction of current 3,996 candidate species (currently over 100/yr are added to list)	BILLIONS
• Cost of governmental expenditures not captured by recovery plans (listing, delisting, permitting, consultation, mitigation on projects in conflict with Act.)	BILLION(S)
• Cost to Government (federal, state, local) in terms of lost revenues from lower incomes/property devaluation	?
• Cost borne by Private Sector e.g. - Northern Spotted Owl, California Gnatcatcher, Golden Cheeked Warbler, Black-Capped Vireo, Sockeye Salmon, Delta Smelt, Marbled Murrelet, Red-Cockaded Woodpecker, etc.	BILLIONS
	BILLIONS

Despite the cost not one species has been recovered and then delisted as a direct result of the Endangered Species Act since it was passed over 20 years ago.



Comments on Methodology

All estimates are taken from recovery plans approved by the US Fish and Wildlife Service. All figures for plan estimates are in constant (1994) dollars and are rounded to the nearest thousand and then ranked in descending order. No estimation of cost was attached to any plan 'task' other than those estimations included within the plan itself. Within recovery plans many tasks are deemed to have an annual cost. If some specified time frame for a task was provided, then the product of the duration and annual cost was included in the total estimate for the plan.

	Task	Duration	Year	
Example:	*Monitoring*	*10 years*	*5K/yr*	= 50,000 calculated value

If no time of duration was specified then the figure was only counted once.

Example:	*Monitoring*	*unknown*	*5K/yr*	= 5,000 calculated value

Although the duration of many tasks is deemed 'continuous' in recovery plans, only those costs specifically detailed were included. Many plans identify tasks that are 'ongoing;' with few exceptions, costs for tasks that had taken place before the plan had been drafted are not included in the plan estimates. There is a great variation between the manner in which the "Implementation Schedules" (generally the source for estimated costs of tasks) are constructed. A good faith effort was made to accurately and conservatively total the costs which could be identified

Appendices

Samples of Recovery Plan Implementation Schedules:

Blunt-Nosed Leopard Lizard (from 1980 plan)
Blunt-Nosed Leopard Lizard (from 1985 plan)
Salt Marsh Harvest Mouse & California Clapper Rail
Hawaiian Monk Seal

Sample Action Diagram:

Higgins' Eye Pearly Mussel

PART III

Schedule of Priorities, Responsibilities and Estimated Costs

TABLE 1. Summary of Scheduled Actions and Costs - Blunt-nosed Leopard Lizard Recovery Program

Group	Priority	Name of Action	Plan Designation	Responsibility Lead	Responsibility Cooperators	Target Date	Estimated Costs (in M) : FY 81	82	83	84
A. Habitat - Preserve, Maintain, Acquire	1	1. Delineate Essential Habitat of BHLL	3	TEAM	FWS/DFG/ BLM/USFS	84	1.0	1.5 (in progress)	1.9	1
	1	2. Secure private lands in Whitesbridge unit	241							
		a) So./SPRR (240 acs.)		DFG	WPRS/FWS/	78		---Completed (FY 79)---		
		b) No./SPRR (2800 acs.)		FWS	WPRS	82	200	2600	-	-
	1	3. Secure private lands in Horse pasture unit	242							
		a) (160 acs.)		FWS	DFG/	81	160	-	-	-
		b) (2400 acs.)			WPRS	82	2000	1400	-	-
	1	4. Secure private lands in Tupman unit	243							
		a) (1280 acs.)		DFG	WPRS/DWR	81	1280	-	-	-
		b) (2500 acs.)		FWS	WPRS	83	-	800	800	
	1	5. Secure private lands in Buttonwillow unit	244							
		a) (8000 acs.)		FWS	DWR	82	4000	4000	-	
		b) (2000 acs.)		DFG	WPRS	84	-	-	1000	1000
	1	6. Secure private lands in Allensworth unit	245							
		a) (4000 acs.)		FWS	DFG/WPRS	82	2000	2000	-	-
		b) (6000 acs.)				83	-	3000	3000	-
	1	7. Secure private lands in Pixley unit (640 acs.)	246	FWS	DFG	82	500	500	-	-
	1	8. Secure private lands in Earlimart unit	247							
		a) (320 acs.)		FWS	WPRS	82	-	300	-	-
		b) (1000 acs.)		FWS	WPRS	83	-	-	1000	-

General Category	Plan Task	Task Number	Task Priority	Task Duration (yrs).[1,2]	Responsible Agency[3] FWS Region	FWS Program	Other Agencies	Fiscal Year Costs (in $1,000's) 1	2	3	Comments/Notes
J2	Examine other private lands	2126	2	2			CDFG	3	3		
M3	Select private lands for management	22	1	2	1	SE			2	2	
	Develop and implement Land Protection Plans on Valley floor habitats for:										
A7	Whitesbridge unit	2311	1	3	1	ACQ*	CDFG	Costs to be determined			
A7	Firebaugh unit	2312	1	3	1	ACQ*	CDFG	Costs to be determined			
A7	Lone Tree unit	2313	1	3	1	ACQ*	CDFG	Costs to be determined			
A7	Horsepasture unit	2321	1	3	1	ACQ*	CDFG	Costs to be determined			
A7	Tupman unit	2322	1	3	1	ACQ*	CDFG	Costs to be determined			
A7	Buttonwillow unit	2323	1	3	1	ACQ*	CDFG	Costs to be determined			

General Category	Plan Task	Task Number	Task Priority	Task Duration (yrs).[1,2]	Responsible Agency: FWS Region	FWS Program	Other Agencies	Fiscal Year Costs (In $1,000's) 1	2	3	Comments/Notes
A7	Allensworth unit	2324	1	3	1	ACO*	CDFG	Costs to be determined			
A7	Pixley unit	2325	1	3	1	ACO*	CDFG	Costs to be determined			
A7	Earlimart unit	2326	1	3	1	ACO*	CDFG	Costs to be determined			
A7	Kern unit	2327	1	3	1	ACO*	CDFG	Costs to be determined			
A7	Other private lands	2328	1	3	1	ACO*	CDFG	Costs to be determined			
	Develop and Implement Land Protection plans in remaining BNLL range on newly secured lands for:										
M7	Cuyama Valley	241	2	3	1	ACO*	CDFG TNC	Costs to be determined			
M7	Carrizo Plain	242	2	3	1	ACO*	CDFG BLM	Costs to be determined			

General Category	Plan Task	Task Number	Task Priority	Task Duration (yrs).[1,2]	Responsible Agency: FWS Region	FWS Program	Other Agencies	Fiscal Year Costs (in $1,000's) 1	2	3	Comments/Notes
M7	Elkhorn Plain	243	2	3	1	ACQ*	CDFG BLM TNC	Costs to be determined			
M7	Foothill areas	244	2	3	1	ACQ*	CDFG BLM TNC	Costs to be determined			
M7	Other private lands	245	2	3	1	ACQ*	CDFG BLM TNC	Costs to be determined			
M7	Develop and implement multi-agency management programs for newly secured private lands	25	2	3	1	SE*	CDFG BLM TNC	Costs to be determined			
	IMPLEMENT MANAGEMENT RECOMMENDATIONS BASED ON ECOLOGICAL STUDIES										
R3	Rodent burrow research	311	2	3	1	RES	CDFG*		10 10	10 10	To be completed FY-4

General Category	Plan Task	Task No.	Task Priority	Duration of Task (yrs.)	Responsible Agency FDS Region	FDS Program	Other	Fiscal Year Costs (Est.) ($1,000's) 86	87	88	Comments/Notes
A-7	Secure and manage Mt. Eden-Old Alameda Creeks and salt ponds.	1221	1	Continuous	1	SE Acq.	EBRPD* CDFG	To be determined			790 hectares
A-7	Secure and manage Mowry Slough salt ponds	1222	1	Continuous	1	RE		To be determined			790 hectares Estimated cost $3,000 k
A-7	Secure Guadelupe Slough-Alviso Slough salt ponds.	1223	1	Continuous	1	RE		To be determined			460 hectares
A-7	Secure and manage the unprotected portions of Bair Island.	1224	1	Continuous	1	RE* Acq.	CDFG	To be determined			741 hectares
A-7	Secure and manage Point San Bruno.	1225	2	Continuous	1	RE Acq.	CDFG*	To be determined			9 hectares (Rail only)
A-7	Secure and manage Mountain View and Sunnyvale shoreline Salt ponds.	1226	1	Continous	1	RE* Acq.		To be determined			70 hectares
A-7	Protect Novato Creek East.	1231	3	Continuous	1	RE	CDFG*	To be determined			102 hectares
A-7	Secure and manage Gallinas Creek South.	1232	2	Continuous	1		OPR	To be determined.			59 hectares

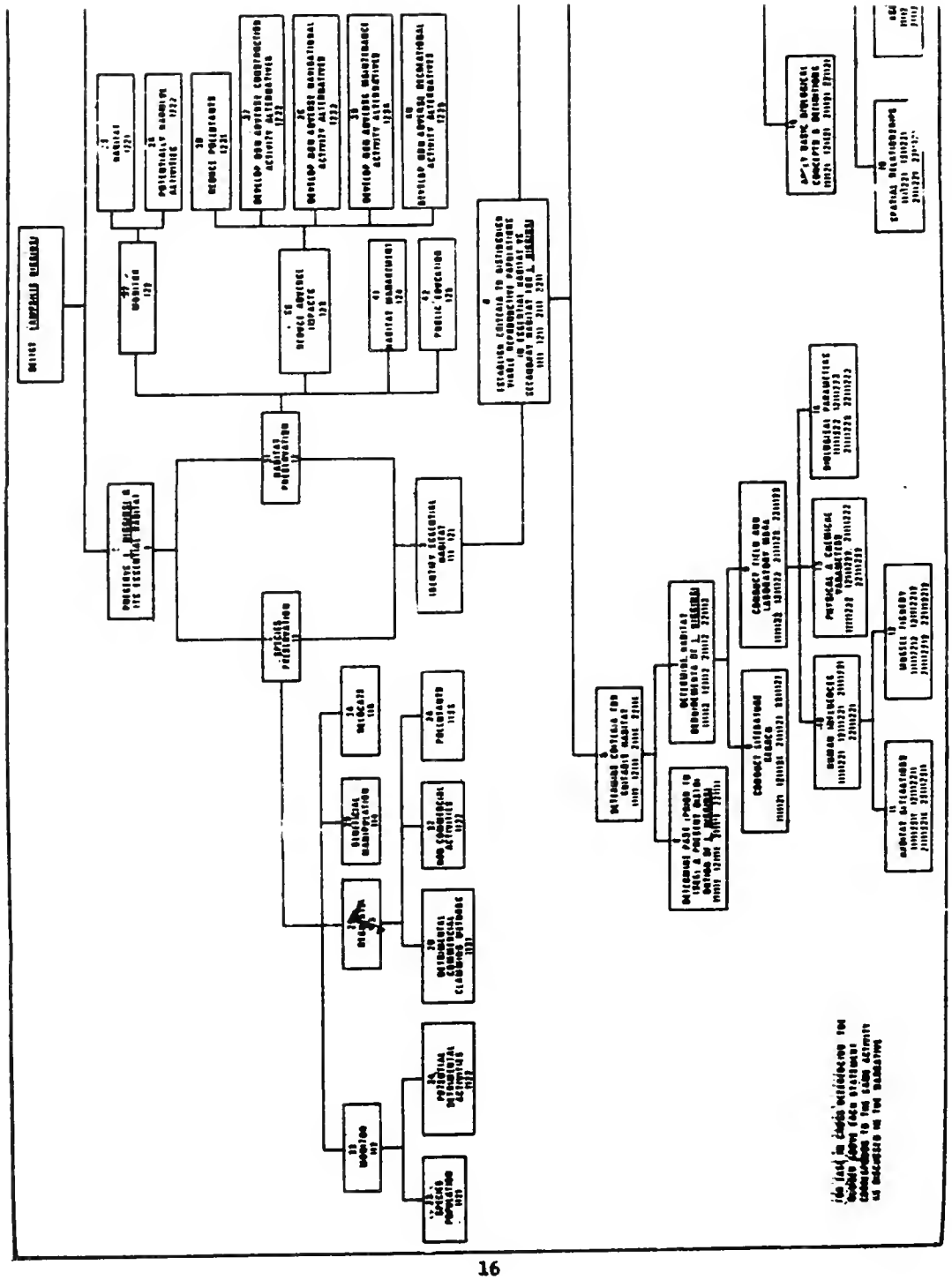
General Category	Plan Task	Task No.	Task Priority	Duration of Task (yrs.)	Responsible Agency FWS Region	FWS Program	Other	Fiscal Year Costs (Est.) (in $1,000's) 86	87	88	Comments/Notes
A-7	Secure and manage Gallinas Creek North.	1233	2	Continuous	1	RE Acq.	CDFG* CCC	To be determined			119 hectares
A-7	Secure and manage Petaluma River mouth	1234	2	Continuous	1	RE SE	CDFG*	To be determined			92 hectares Estimated cost to secure $400 k
A-7	Secure and manage Black John Slough	1235	2	Continuous	1	RE Acq.	CDFG*	To be determined			344 hectares Estimated cost to secure $1,200 k
A-7	Secure and manage Petaluma Marsh North.	1236	2	Continuous			CDFG	To be determined			412 hectares Estimated cost to secure $1,300 k
A-7	Secure and manage Lower and Upper Sonoma Creeks and Steamboat Slough.	1241	2	Continuous			CDFG	To be determined			274 hectares
A-7	Secure and manage Second and Third Napa Sloughs.	1242	2	Continuous			CDFG	To be determined			103 hectares (Rail only)
A-7	Secure and manage Hudeman Slough.	1243	2	Continuous			CDFG	To be determined			157 hectares (Rail only)
A-7	Secure and manage Island Number 1 and Island Number 2	1244	2	Continuous	1	RE* Acq.	CDFG	To be determined			2500 hectares

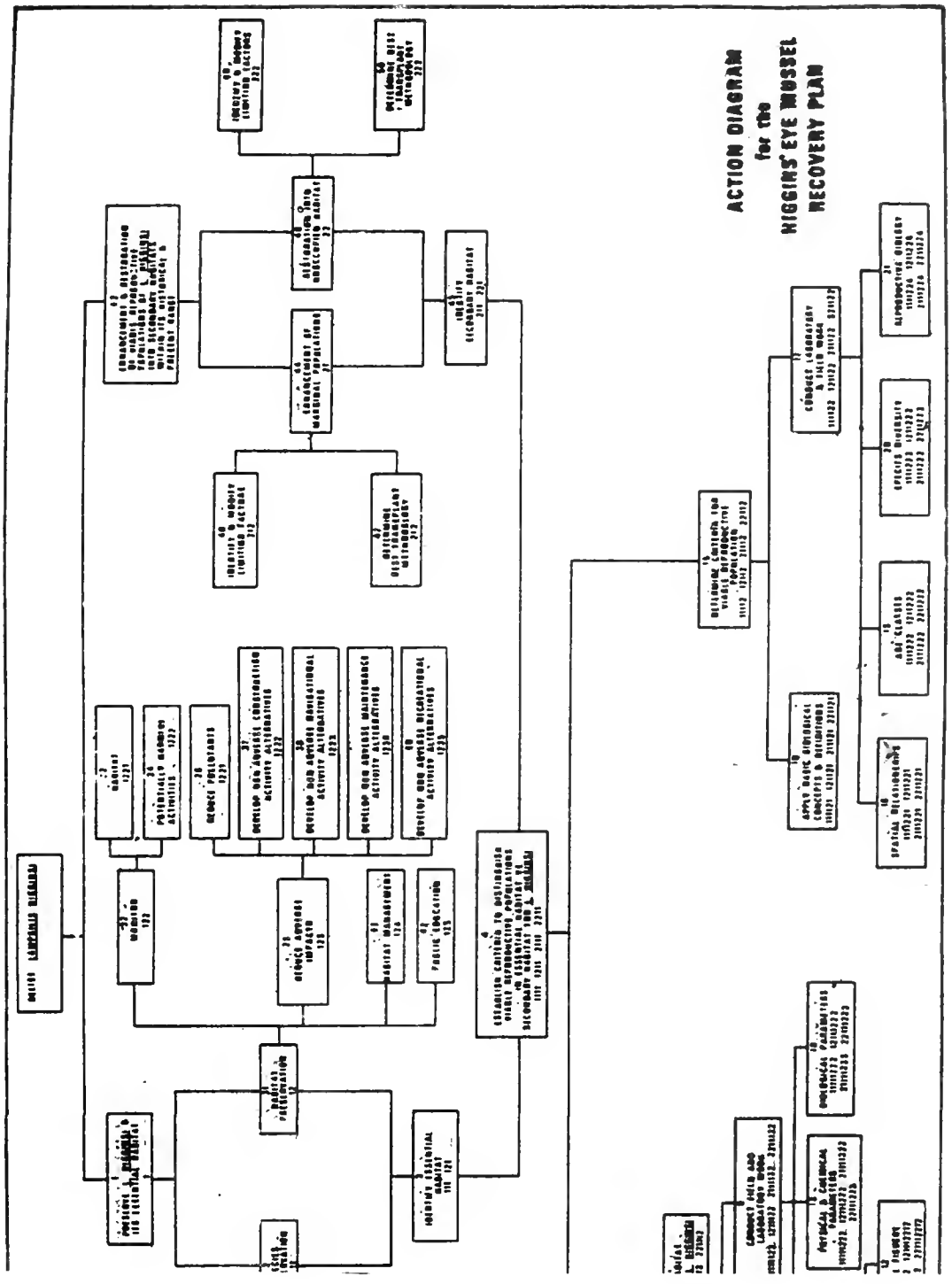
General Category	Plan Task	Task No.	Task Priority	Duration of Task (yrs.)	Responsible Agency FWS Region	FWS Program	Other	Fiscal Year Costs (Est.) (in $1,000's) 86	87	88	Comments/Notes
A-7	Secure and manage Skaggs Island	1245	2	Continuous	1	SE	Navy*	To be determined			2312 hectares
A-7	Secure and manage Coon Island-Fagan Slough.	1246	2	Continuous			CDFG	To be determined			227 hectares
A-7	Secure and manage Napa River.	1247	2	Continuous			CDFG	To be determined			71 hectares
I-2	Identify areas of essential mouse and rail habitat in the Suisun marsh.	1251	2	2	1	SE	CDFG SCS*		1.0 5.0 5.0	1.0 5.0 5.0	
A-7	Secure and manage Martinez East..	12521	2	Continuous			CDFG	To be determined			282 hectares
A-7	Secure and manage Martinez West.	12522	3	Continuous			CDFG	To be determined			42 hectares
A-7	Secure and manage McAvoy	12523	2	Continuous		SE	NAVY*	To be determined			182 hectares
A-7	Secure and manage Suisun Slough North.	12524	2	Continuous			CDFG	To be determined			169 hectares
A-7	Secure and manage Collinsville marsh.	12525	3	Continuous	1	SE	PG&E*	To be determined			123 hectares

Task	Title	Priority	Agency	Start date	End date	Estimated cost $1,000 ( )	Status/comments
1.3	Habitat/population characteristics	2	NMFS, FWS, H	N.D.	N.D.	29	
1.4	Pup/juvenile mortality	1	NMFS, FWS, H	1977	N.D.	32 (3.2)	
1.5	Adult/female mortality	1	NMFS, FWS, H	1977	N.D.	(1.4)	
2.	HABITAT REQUIREMENTS						
2.1	Habitat characteristics		NMFS, FWS, H	N.D.	N.D.	35	
2.11	Haul-out and pupping sites	1	NMFS	1982	1984	(2.1)	
2.12	All marine habitat	3	NMFS, FWS, H	1977	N.D.	(2.1)	Ongoing tripartite assessment
2.13	Special marine habitat	1	NMFS, FWS, H	1980	N.D.	(2.1)	Ongoing depth-of-dive study in all age classes
2.14	Compare French Frigate Shoals and Pearl and Hermes	2	NMFS, FWS	N.D.	N.D.	(2.1)	
2.15	Threats to habitat	1	NMFS	1976	N.D.	?	
2.16	Use pattern changes	1	NMFS	1980	N.D.	?	As necessary
2.2	Food						Status report to 1983
2.21	Collect scats/spews	1	NMFS, FWS	1976	Con.	22/yr (3.2)	
2.211	Reference collection	1	NMFS	1982	1984	20	
2.212	Identify prey species	1	NMFS	1976	Con.	(2.21)	
2.22	Seal take of commercial species	3	NMFS	1976	N.D.	?	Lobster feeding trials, 1983
2.3	Extent of monk seal habitat						
2.31	Depth of food	1	NMFS	1980	1984	76 (3.2)	Depth-of-dive study in all age classes, 1982-83
2.311	Effects of dive recorders	1	NMFS	1982	1983	0	
2.32	Haul-out patterns	1	NMFS	1980	1984	16 (2.31)	Radio-hauling study in all age classes, 1982-83
2.321	Effects of radios	1	NMFS	1982	1983	0	
2.33	Feasibility of sonic or radio tags	2	NMFS	N.D.	N.D.	?	
2.331	Interferance with vocalisations	2	NMFS	N.D.	N.D.	10	
2.332	Shark attraction	2	NMFS	N.D.	N.D.	5	
2.34	Compare marine habitat use	3	NMFS	N.D.	N.D.	12	
2.35	Beach use patterns	2	NMFS	N.D.	N.D.	5	
2.36	Sightings summarization	3	NMFS	1977	N.D.	5	

Table 2.--Continued.

Task	Title	Priority	Agency	Start date	End date	Estimated cost $1,000 ( )	Status/comments
5.	IMPLEMENT MANAGEMENT ACTIONS						
5.1	Limit access						
5.11	French Frigate Shoals, Pearl and Hermes, Kure Atoll, Midway	1	NMFS, FWS	1981	Con.	N.C.	Note enforcement required at some locations
5.12	Limit research at French Frigate Shoals	1	NMFS, FWS	1982	Con.	N.C.	
5.13	Refuge at Midway	1	NMFS, FWS, N	N.D.	N.D.	?	
5.14	Move Kure Atoll loran station	1	CG, N	N.D.	N.D.	?	Move under study by U.S. Coast Guard
5.15	Enforcement and data collection Kure Atoll and Midway	1	NMFS, FWS, CG, N	1983	N.D.	63/yr	
5.16	Adjust off-limits, Kure Atoll	1	NMFS, N, CG	1983	N.D.	?	
5.17	Enforce regulations	1	NMFS, FWS	Con.		?	
5.171	Require refuge permits	1	FWS	1983	Con.	?	
5.172	Stop disturbance at Kure Atoll	1	N, CG	1983	N.D.	?	
5.173	Enforce MMPA and ESA	1	NMFS, FWS	Con.		?	
5.18	Coordinate research	1	NMFS, FWS, N	1979	N.D.	?	
5.2	Initiate other actions						
5.21	Critical habitat	1	NMFS	1980	N.D.		
5.22	Centralize census data	1	NMFS, FWS, N	1980	Con.	0	
5.23	Mortality Reaction Plan	1	NMFS	1980	Con.	0	
5.24	Evaluate "head start" project	1	NMFS, N, CG	1982	N.D.	0	Expansion to other islands not necessary at this time
5.25	Shark control	2	NMFS, FWS, N	N.D.	N.D.	?	
5.26	Return of rehabilitated seals	3	NMFS	N.D.	N.D.	?	
5.27	Oil/chemical response	3	NMFS, FWS, N, N, CG	1982	N.D.	?	
		2	NMFS	1983	Con.	?	
5.29	Interpret research/initiate action	1	NMFS, FWS, N, N, CG	1980	N.D.	?	




ACTION DIAGRAM
for the
HIGGINS' EYE MUSSEL
RECOVERY PLAN

ENDANGERED SPECIES ACT REAUTHORIZATION

THURSDAY, AUGUST 3, 1995

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

INNOVATION, HABITAT RECOVERY, AND PRIVATE PROPERTY RIGHTS

The subcommittee met, pursuant to recess, at 9:04 a.m. in room 406, Senate Dirksen Building, Hon, Dirk Kempthorne (chairman of the subcommittee) presiding.

Present: Senators Kempthorne, Thomas, Warner, Reid, Lautenberg, and Chafee [ex officio].

OPENING STATEMENT OF HON. DIRK KEMPTHORNE, U.S. SENATOR FROM THE STATE OF IDAHO

Senator KEMPTHORNE. Ladies and gentlemen, I'll call this hearing to order.

I'd like to welcome all of you to today's hearing and to say to all of our panelists who will be giving us their thoughts this morning, we welcome you and we thank you for being here as well.

Today's hearing seeks out the best and the brightest ideas for making innovation, incentive, habitat recovery and respecting private property, vital parts of the Endangered Species Act, a law that is now needlessly punitive in its application and enforcement. The message—that ESA has too much regulation, too much control, too much government—has come through loud and clear in the hearings that we have held to date.

People who live with the ESA are angry with how the Government uses it against them. The Endangered Species Act has failed because it relies too often on untested science, problems with administrative action, and excludes States and local government from important decisions. Nearly every witness has said ESA needs changes, from the unemployed timber worker in Idaho to the Secretary of the Interior, there is agreement that the Act should be reformed.

At the same time, all of our witnesses want to save endangered plant and wildlife that make the world we share so enriching. ESA must be reformed. I have described myself on different occasions as a pro-business environmentalist. As a result of what I've heard so far in the hearings, I will tell you that I am also a pro-family environmentalist. For too long, the Act has carelessly disregarded the

very people who support the goals of the Act itself. The Act must be repaired or over time it will fall of its own weight.

Today we will hear about a subject which I believe has a great deal of support from a wide range of persons. For too long, the only tools Congress gave to Federal agencies to carry out the Act was the blunt instrument of regulation and the heavy hand of enforcement. But I prefer incentive to punishment. To put it simply, you catch more flies with honey than you do with vinegar.

We will also hear about the best way to protect habitat. If you protect habitat, you protect species. But we must be wise in that protection. Failing to do so, as we will hear, affects water and water rights and jobs and communities. And some of our witnesses will say that the Act has several mechanisms for protecting habitat, both on Federal and private lands. Other witnesses will be telling us how these same mechanisms create delays, increase project costs without protecting the species, and make unreasonable and imprudent demands on projects.

The third panel will address what many landowners have discovered, that having an endangered species on your property will only decrease its value and increase the regulatory restrictions. We will hear that estimates of the overall costs of habitat programs are being carefully evaluated by some of our Nation's best economists. Some believe these costs are small when compared to other programs of the Federal Government.

But we'll also hear, like we do when two economists meet, that there are at least three opinions on this matter. This will not be our last hearing in Washington, DC. But in an attempt to get more input from the home districts of this subcommittee's members, our next hearing will be in Casper, WY. Considering what we learned from our last field hearings, I look forward to visiting this city and hearing the straightforward, the blunt testimony about the real world effects that the Endangered Species Act has on people, property and the conservation of species and habitat.

With that, let me turn to Senator John Chafee, who is the chairman of the full Environment and Public Works Committee, and to acknowledge that he has been in attendance at all of these hearings, as well as the hearings in the field. For that, I'm very appreciative.

Senator Chafee.

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

Senator CHAFEE. Well, thank you very much, Mr. Chairman. Again, I want to thank you for these hearings that you've held in connection with the Endangered Species Act. You've really done a wonderful job. The next one's in Casper, WY, you said? Everybody's invited, are they?

Senator KEMPTHORNE. Yes, they are, absolutely.

Senator CHAFEE. On their own, that is.

Mr. Chairman, if there is one issue that has come through in these different hearings, it is the need for incentives as you yourself mentioned. If we enact economic incentives to induce landowners to protect wildlife and habitat on their property, we get a

double benefit. We enhance the species conservation and we reward the landowner and encourage him to do even more.

I've looked over the testimony that we're going to hear today, and I think there are some excellent suggestions out there. In connection with other interests I have, I've introduced legislation to encourage the conservation of farms and forests and open spaces by reducing the estate tax burden on farmers and ranchers who have conservation easements. It seems to me that same theory can be applied to the conservation of threatened and endangered species as well.

So unless I am dissuaded by something I hear today, I would be very much in favor of including many of those incentive provisions in our reauthorization legislation.

Mr. Chairman, I think it is important to bear in mind that the voluntary incentive opportunities are important. But also, I believe strongly we need the ESA requirements to protect species and habitat. We need carrots, we need more carrots, but I think the presence of a few sticks is also important.

Several of the proposals to improve the habitat conservation plans under ESA have a lot of merit. We've already heard from the Secretary of Interior describing his safe harbor proposal and the "no surprises" policy. I think there's a lot of merit on this.

I must say, Mr. Chairman, if we're going to do these things, it's going to cost some money. The 20 percent cut in funding below last year's level for endangered species activities in the Interior appropriations bills is a big step in the wrong direction, regrettably. Neither the current ESA nor any of the proposed reforms will be successful if we can't back them up with actual dollars. Yes, we hopefully can do something in connection with the estate tax. But I think we're going to need more than that.

So the establishment of a reliable funding framework for the ESA is a great challenge to all of us if we want to enact legislation to improve the Endangered Species Act. I look forward to hearing from the witnesses.

Mr. Chairman, regrettably there is a meeting in connection with fisheries, ocean fisheries, that is an important one and hopefully a brief one, that I'm going to have to step out to around 9:30. But I'll be back right after that, and look forward to the whole hearing. Thank you.

Senator KEMPTHORNE. Senator Chafee, thank you very much. Now let me welcome Senator Lautenberg from New Jersey. Senator Lautenberg, let me personally invite you to come out to Wyoming, because I know that you do enjoy the West, and certainly there are great differences between the East and the West. So we'd love to have you out there.

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

Senator LAUTENBERG. Mr. Chairman, I thank you very much, and I hope that you will join me in Carteret, NJ, where we can have an open spaces wildlife review. It may be a little crowded on a given day, but seriously, we're very proud of our open space and the wildlife refuges that we do have in New Jersey, surprisingly a significant number of them.

Mr. Chairman, I'm pleased to be part of today's hearing on incentives, habitat and, of course, funding. Over the past 6 weeks this subcommittee, Mr. Chairman, under your leadership, has held a number of hearings on reauthorization under the Act. Two conclusions have emerged. First, most Senators, like most citizens, support the conservation of threatened or endangered species. Second, most Senators, like, again, most citizens, believe that we can do that in a more cost-effective manner, and we can do it in a way which reduces the burdens on private landowners.

That's why this hearing is so important. It's easy to support lofty goals. But decisions related to incentives, habitat and funding will determine how well we can translate the Act into action. As originally conceived the Endangered Species Act focused on preservation through prohibition.

But gradually we came to realize that providing incentives for compliance can often be a more effective way to minimize the burdens and maximize the effectiveness of the Act. That's why in 1982 Congress created a process to grant protection to private entities faced with the need to take a listed species as long as it was deemed incidental to the conservation of the species.

Well, the process isn't perfect. The section 10 habitat conservation plans can be expensive and take too long. But there are signs of improvement. From 1983 to 1992, only 14 HCP permits were issued. But from 1992 through June 1995, a total of 75 permits were issued. The numbers prove that with a little effort, the Act can be administered in ways which respond to the legitimate needs and complaints of private property owners.

Now, we can build on the progress that we've made. But we need to adopt more habitat-based incentives which build landowner and stakeholder cooperation. We should create a greater sense of certainty at lower costs for landowners. There are ways to do it, and I'm sure we're going to hear some of those today. Encouraging voluntary participation in conservation agreements, providing tax incentives for landowners who promote listed species habitat on their property, and giving people a greater voice in the process.

But as we heard from the distinguished chairman, those proposals will not work unless we fund them. Unfortunately, both the House and the Senate Appropriations Committee, and I'm a member of the Senate Appropriations Committee, versions of the Interior bill seriously underfund these programs.

Now, if funding isn't increased, the results are all too predictable. We will be unable to initiate cooperative programs that prevent listings, the most cost-effective method of recovering species. We will also slow the recovery of species and reduce the role of the State and local partners in ESA implementation. Nobody wants that to happen, but it is. So we ought to explore other ways to find the money that we need.

We may, for example, want to look at a trust fund. But one way or another, we should recognize reality. If we want to protect species, we have to provide these programs with an appropriate level of funding. In that context, I'd like to make one final point.

Some believe that reform requires the creation of a statutory right to compensation for landowners that goes beyond the guarantees of the fifth amendment to the Constitution. Now, even if such

a policy was justified or required, points that I would dispute, we simply cannot afford it. The net result is that such proposals use the legitimate concerns of landowners to gut the Endangered Species Act. I cannot and will not support that, and I very much hope that the committee will not, either.

I thank you, Mr. Chairman, once again, for being so diligent about the review of the conditions necessary to get an Endangered Species Act reauthorized.

Senator KEMPTHORNE. Senator Lautenberg, thank you very much.

With that, let me invite the first panel to please come forward, which would be Mr. Carl Loop, Mr. R.J. Smith, Dr. Jim Sweeney, and Mr. Michael Bean. Again, I want to welcome this panel. I've looked forward for some time now to discussing this aspect of incentives.

What I'd like to do, because of the number of witnesses we have, we want to be sure that we allow appropriate time for everyone, so that we can have a thorough discussion. We'll use the light system here, and as you give your opening comments, again, the green light means everything's fine, yellow, if you could begin to conclude your remarks, red, of course.

We'll just use this as a guideline. It doesn't mean we're going to cut you off immediately. We'll also be using this when we have a round of questions, so that we can keep moving right along.

So with that, let me first introduce Mr. Carl Loop, who is the vice president of the American Farm Bureau Federation from Washington, DC. Mr. Loop, welcome.

STATEMENT OF CARL LOOP, PRESIDENT, FLORIDA FARM BUREAU FEDERATION, ON BEHALF OF THE AMERICAN FARM BUREAU FEDERATION

Mr. LOOP. Thank you, Mr. Chairman, members of the committee. I thank you for this opportunity to speak to you regarding reauthorization of the Endangered Species Act.

My name is Carl Loop, I am vice president of the American Farm Bureau, and also president of the Florida Farm Bureau. I have a wholesale nursery operation in Jacksonville, FL.

We in Florida are keenly aware of the threatened and endangered species. Our State ranks third in the number of affected species. Currently, we have 89 listed as endangered or threatened, 12 species proposed for Federal listing and 288 considered candidates for Federal listing.

Species locale in our State is probably in line with the reports which indicate that nationwide, 78 percent of listed species are on private lands, with 34 percent exclusively on private lands. Most of this is farm and ranch land. Our farms take pride in producing food while seeing wildlife on their property.

Unfortunately, the present Endangered Species Act, with its restrictions, makes landowners wary rather than proud to have listed species on their property. Currently, having a listed species equates to restricted use and loss of value to property.

The American Farm Bureau believes the following changes must be made when the Endangered Species Act is reauthorized. Private landowners must be compensated for a loss of property value due

to regulations of the Endangered Species Act. Species preservation declared in the national interest should be at national expense.

Voluntary incentives must be given willing landowners who manage for species protection. We propose a critical habitat reserve program outlined in the material that has been submitted for the record. Any determinations under the Act must be supported by sound scientific endorsed evidence and looked at by scientific review. Proposed listings should be accompanied by a species management plan. Listing must be based on science, and the management plan must consider economic and social factors.

Mere modification of habitat should not be considered a taking under section 9 of the present law. Private landowners must not be prevented from making use of their property.

Before any action is taken under the Act, the applicable Federal agency must determine that the benefits of the proposed action outweigh its costs. The listing of subspecies or distinct populations should be limited to only those cases where listing is necessary for the survival of the species as a whole.

The Act must provide to people whose economic interests have been adversely affected by any ESA action the same standing and access to administrative or judicial review of ESA actions as is now provided to those seeking greater species protection. The Act should prohibit the filing of citizen suits against private landowners by private advocacy groups.

Landowner actions or activities that have minimal or no adverse impact on listed species should be categorically excluded from section 7 consultation requirements and section 9 taking requirements. Different protections should be afforded species that are listed as "threatened" than those listed as "endangered." Protections and prohibitions applicable to threatened species should be published on a case-by-case basis as part of a final listing rule.

Private applicants for Federal permits or licenses should be allowed to actively participate in any consultation required by section 7 of the Act. The purpose and provisions of the Endangered Species Act should have no greater or lesser importance or priority than the duty or responsibility of any Federal agency.

Under the current administration of the Act, Federal agencies are often prevented from performing their statutory duties and functions because of requirements imposed by the Endangered Species Act. Any conflict between the Endangered Species Act and the mission or statutory responsibility of any Federal agency should be resolved by the President.

Enactment of these provisions will move the Act back toward accomplishing its primary purpose, the recovery of species in danger of becoming extinct. Moreover, it will accomplish this purpose without creating the bitterness that has marked the listing of some species.

We believe the Act can be saved, and made to be more effective. Changing the focus of the Endangered Species Act from a negative club to positive incentives is a key element of this process. People have to respect and protect species because they want to, not because they have to. A big part of this attitude transformation is a recognition and respect of private property rights in the Act and by those administering it.

Thank you, Mr. Chairman.

Senator KEMPTHORNE. Mr. Loop, thank you very much. We appreciate your comments.

And now Mr. R.J. Smith, who is a senior environmental scholar with the Competitive Enterprise Institute in Washington, DC. Mr. Smith, welcome.

STATEMENT OF R.J. SMITH, SENIOR ENVIRONMENTAL SCHOLAR, COMPETITIVE ENTERPRISE INSTITUTE

Mr. SMITH. Thank you, Mr. Chairman, for the opportunity to present testimony before this committee.

CEI is a non-profit, non-partisan research and advocacy public policy institute dedicated to the principles of free markets, private property and limited government. In the area of environmental policy, we advocate the use of the institutions of a free society to protect the environment. Those include the use of private property rights, stewardship, the price system, markets and economic incentives.

We reject the idea that protection of private property rights will lead to environmental degradation, or for the concerns of this committee, will harm species and habitat. Indeed, we believe that the failure of the Endangered Species Act has been a direct result of the fact that the ESA has harmed people and their property rights.

Our efforts and other efforts to protect property rights and to require compensation for property owners whose land or property is taken by the Government for the purposes of the Act, are in no manner whatsoever an effort to gut the Act or to harm wildlife or habitat. It is instead a rational and carefully considered effort to make the Act work for both people and for species.

Many of the most remarkable conservation success stories of this century were achieved through the full and willing cooperation of private landowners who had no fear of maintaining species or habitat on their lands because they do not face the loss of the use of their lands or the economic value of their property as a result of their good stewardship.

Perhaps the most notable success story was the recovery of the wood duck, which was rapidly headed for extinction early in the century. The Friends of the Wood Duck, in the best tradition of voluntary association and private conservation, spent much of the rest of the century asking the Nation's private landowners to allow them to erect artificial nest boxes for the birds, which had suffered from both over-hunting and the loss of old bottom land hardwoods with nesting cavities.

Most landowners were more than willing to help. There was no downside. If the ducks utilized the nest boxes, the landowners would not be prevented from using their lands, harvesting their trees or crops, or operating vehicles within a half mile radius of the nest side. I would argue, Mr. Chairman, that if we had had an ESA in 1920, the wood duck would very likely be extinct today instead of the second most common duck in the eastern flyway.

Similar efforts by the North American Bluebird Society succeeded in placing hundreds of thousands of nest boxes in native habitat to help the three species of bluebirds recover from the loss of natural nesting cavities to the aggressive non-migratory intro-

duced European starlings and house sparrows. These lovely birds again grace suburban landscapes, farms, and ranch lands largely because landowners were not penalized for attracting the species to their lands.

Similar efforts have worked for a wide range of species which can benefit from additional or improved nest sites and natural habitat or in degraded habitat. Other efforts, such as the National Wild Turkey Federation or the Ruffed Grouse Society, have aided landowners in protecting or improving the habitat for those species and many other species which utilize the same habitat.

They all worked, Mr. Chairman, because the presence of the species or its habitat was not a liability to the landowner. Unfortunately, the ESA works in precisely the opposite and wrong manner. The better steward a landowner is the more wildlife habitat he maintains on one's land, the more likely it is that you will be rewarded by the loss of the use of or the economic value of your lands and property. Attempts to harvest one's crops or trees, use one's land, build a home or operate vehicles near the sites risk fines of up to $100,000 and/or a year in jail.

Now, that is the worst possible way to encourage landowners to help protect endangered species and habitat. In fact, it does just the opposite. It encourages them to get rid of wildlife habitat, to sterilize their lands. It creates the "shoot, shovel and shut up syndrome."

Because of the way the Act operates, it has become a disaster. It harms people and their property, and it harms species and habitat. It is bad for people and it is bad for species. Over the past half year a vast amount of time and effort has gone into efforts to find or create positive incentives to place into the Endangered Species Act in order to eliminate many of the unintended consequences of the Act, to end the fear and loathing that so many landowners increasingly have for the Act, and to prevent or curtail the acts of habitat sterilization.

But this is largely an illusory and self-defeating effort. While many of these new devised incentives are promising and very innovative, they may have little if nay positive effect. The one incentive that will work is to remove the perverse incentives, the disincentives in the Act. Remove the penalties for having wildlife and habitat on one's lands. Stop regulatory takings of private lands. Stop making stewardship a liability. Work with the Nation's private landowners instead of against them. If you do take their lands, then pay them compensation, precisely as you do with their lands that are taken for any other public good.

Mr. Chairman, private landowners are not afraid of wildlife on their lands. They are afraid of the Feds on their lands. Eliminate that fear and they will once again be willing to help protect wildlife and habitat. In most cases, I believe landowners will not require costly incentives. Removal of the underlying fear of loss of their lands will again make many of them willing to share their lands with species and habitat.

However, attempting to sprinkle a dusting of a few layers of incentives over regulatory nightmare is simply a convoluted recipe for continuing disaster, giving how-to booklets, free bird boxes, seedlings of important habitat trees, or offering to pay landowners

to producing habitat or species is unlikely to outweigh the costs and fears of losing the use of their once own land or the value of one's property.

There are sound reasons why landowners will erect nesting boxes for screech owls and barn owls on their property or in their woods, but will not erect a spotted owl nest box, no matter how nicely they are asked. What does it profit a landowner to gain a small check for nailing up an owl box if he loses $100,000 worth of trees?

In conclusion, Mr. Chairman, by removing the sword of Damocles from over the head of private landowners, we can make private landowners look at the Fish and Wildlife Service again in the same way they viewed the Soil and Conservation Service and the USDA's Conservation Reserve Program. The American people will benefit and the American wildlife will benefit.

Thank you, Mr. Chairman.

Senator KEMPTHORNE. Mr. Smith, thank you very much.

Dr. Jim Sweeney, who is manager of Wildlife Issues, with the Champion International Corporation, Washington, DC. Dr. Sweeney, it's good to have you here.

STATEMENT OF JAMES M. SWEENEY, MANAGER, WILDLIFE ISSUES, CHAMPION INTERNATIONAL CORPORATION

Dr. SWEENEY. Thank you, Mr. Chairman, members of the committee.

I am Dr. James Sweeney, manager of Wildlife Issues for Champion International Corporation. Champion is one of America's leading manufacturers of paper and wood products. We own or control more than 5 million acres of forest lands in the United States, making us one of the Nation's largest private landowners.

I am also here as a member of the recent dialog that Keystone held on incentives for private landowners. In my remarks this morning I would like to offer a brief report of that dialog and a short statement on Champion's view that incentives, while important, are but one part of the reform that needs to be addressed during reauthorization of the Endangered Species Act.

Mr. Chairman, I would ask that the full report from the Keystone Dialogue and my full written statement be added to the record.

Senator KEMPTHORNE. It will be.

Dr. SWEENEY. Thank you.

The Keystone Center brought together over 30 key individuals from a variety of organizations including environmental, mining, ranching and agricultural organizations, non-industrial private landowners, forest products companies, and Federal and State agencies. The objective of this dialog was to develop a compendium of proposals that might serve as incentives to private landowners to voluntarily contribute to the conservation of threatened and endangered species. Dialogue participants agreed that conserving threatened and endangered species is an important national goal, but that species protection is a public concern, and should not unfairly burden the individual private landowner.

The dialog process generated a package of 19 potential incentives, ranging from those that may be attractive to the small, non-industrial landowner to those that might appeal to State or local

governments or to large corporations. They range from pre-listing to post-listing situations, from those that improve regulatory certainty to those that address regulatory flexibility. They also range in costs. Some are essentially revenue-neutral. Some will need funding. Others have the potential to generate funds.

The proposed incentives have been grouped into three general topics. The first looks at increasing voluntary participation through, for example, pre-listing conservation agreements, technical assistance and other guidance to landowners, or the provision of some form of regulatory safety net for landowners who voluntarily enhance or create favorable habitat.

The second topic focuses on habitat conservation planning, and includes such things as providing a short form HCP, providing seed money for community HCPs, or implementing a no-surprises policy.

The third group is on financial incentives, and includes such ideas as deferring estate taxes when the estate is managed to provide habitat for endangered or threatened species, or providing tax credits for habitat management practices again beneficial to threatened or endangered species, or creating a threatened or endangered species habitat trust fund.

Now, let me change hats, and offer Champion's view on incentives. The provision of incentives for private landowners is indeed an important topic. But, it is a topic that needs to be addressed within the broader discussions on reauthorization of the Endangered Species Act.

Other topics that should be addressed by Congress under reauthorization include the need to improve the scientific base for decisions under the ESA, the need for recovery plans to include specific goals, multiple management alternatives, and steps for delisting. The need to provide compensation to private landowners where appropriate. The need to clarify the role of habitat modification as it relates to take on private lands, and the need to prioritize the expenditure of limited funds.

While incentives address some of these issues, they provide at best only a partial solution. For example, the full package of incentives should reduce the number of times compensation might be requested, yet does not decrease the need for compensation being an option. While some of the incentives offered will require the use of better science, they do not address such essential factors as peer review, the identification of assumptions, and the scheduling of research to address those assumptions.

In summary, I would say that Congress must enact legislation that not only incorporates appropriate incentives for private landowners, but which also addresses the full spectrum of Endangered Species Act concerns.

Thank you, Mr. Chairman.

Senator KEMPTHORNE. Dr. Sweeney, thank you very much.

Mr. Michael Bean.

STATEMENT OF MICHAEL J. BEAN, CHAIR, WILDLIFE PROGRAM, ENVIRONMENTAL DEFENSE FUND

Mr. BEAN. Thank you, Mr. Chairman, members of the committee.

I am Michael Bean. I am testifying this morning on behalf of the Environmental Defense Fund.

I want to begin by saying that everyone at this table and many others have long noted the need for positive incentives to encourage and reward landowners to do the sorts of things that would help in the recovery of endangered species. But that topic's been addressed at a very abstract level. The idea of incentives has been embraced as a generality or an abstraction, and not very much intellectual effort has been put into the more difficult task of defining what those incentives should be and how they would actually work.

The Keystone Dialogue on incentives for private landowner conservation, which Dr. Sweeney just briefly summarized, is, I think, one of the first and most useful efforts to put some flesh on the bones of that idea. That dialog sets forth a rather extensive menu of incentive ideas, which I would strongly commend to this committee.

A couple of facts are worth noting about the Keystone Dialogue. First of all, it represents consensus among a very diverse group of people, a group that probably agree on little else about the Endangered Species Act. The second point is that it's quite clear from the list of ideas in that report that in order to achieve the goals that the Endangered Species Act has by creating incentives, it will be necessary to go beyond the four corners of the Endangered Species Act.

What I mean by that, sir, is it will be necessary to consider a variety of tax measures, and it will be necessary to consider perhaps some adjustments in some farm conservation programs. There are also recommendations having to do with exchanges of Federal lands. So the point simply is that the dialog participants recognized that to achieve the Act's goal, you've got to think broadly and not be confined to the current four corners of the Act.

The last point is, the dialog participants also recognized that if we're serious about creating incentives, particularly economic incentives, for landowners to do the sorts of things that are going to help in the recovery of endangered species, there will be a price tag associated with that. Senator Chafee and Senator Lautenberg, in their introductory remarks, acknowledged that and acknowledged also that the reductions in endangered species spending are not going to contribute to our ability to deliver these sorts of incentives.

I want to emphasize, however, that not all the incentives that are in this report require the expenditure of a lot of Federal money. In fact, some come with a very small price tag.

Let me focus on three particular ideas that are in this report that I think I can demonstrate in a real world example how they would work for the benefit of endangered species. With colleagues at the Environmental Defense Fund for the last several years, I've been working in an area of North Carolina called the Sandhills, an area which has a significant population of red-cockaded woodpeckers, an endangered species.

That particular species has been a federally protected bird since 1918, when Congress passed the Migratory Bird Treaty Act. That Act, however, did nothing to protect the bird's habitat. As a result, its numbers continued to decline for a half century until in 1970, the red-cockaded woodpecker was listed as an endangered species. It's been protected by the Endangered Species Act ever since.

Despite that Act's protection of habitat, however, the bird has continued to decline on private lands, primarily because what the Act does is to protect existing habitat and creates no mechanism for restoration or recreation of habitat the bird will need in the future.

Recognizing that problem in the Sandhills of North Carolina, and recognizing that there were many landowners there who were willing to undertake the sorts of land management activities that would improve habitat for this species, we designed what we call a safe harbor program, whereby landowners would receive an ironclad assurance that if they created the habitat that would benefit this species they would not incur added legal responsibilities. That program is in place now.

At the present time, there are a dozen landowners within excess of 15,000 acres of land who are engaged in negotiating agreements, some of which have been completed, to secure the protection of these safe harbor agreements. The result of those 15,000 acres of land being enrolled in this program is expected to create an additional 31 groups of woodpeckers in the Sandhills, which is nearly a 10 percent increase in a population that has otherwise been declining for the last several decades.

The second recommendation, actually two recommendations in the Keystone Report, have to do with estate taxes. Here again, in the Sandhills of North Carolina, we witnessed during the life of our project a classic example of how Federal estate taxes are forcing landowners to destroy ecologically valuable lands. One of the largest privately owned tracts in the Sandhills was owned by a person who died within the last couple of years.

That land had been managed very sensitively for its environmental values. It was regarded as one of the most important privately owned tracts in the region. However, because of Federal estate tax requirements, the heirs to that property are now faced with the necessity, or virtual necessity, of liquidating most of the timber assets on that property, which will destroy its ecological value, to pay the Federal estate tax bill.

The Keystone Dialogue suggests a couple of alternative ways of approaching that problem so that our Federal estate tax will not have the pernicious impact of forcing good stewards of land to sacrifice what their good stewardship has created.

The last recommendation I want to focus on in the Keystone report has to do with getting more endangered species benefit out of existing programs like the Conservation Reserve Program, a farm program. In the six-county area of the Sandhills in North Carolina, there are at present more than 13,000 acres of land enrolled in that program, and more than $7 million taxpayer dollars are going to be spent in support of that 13,000 acres of enrolled land.

The primary benefit will be soil erosion, an important benefit. It would also be possible, however, to configure the lands in the CRP program in this area so as to get both the soil erosion benefits and endangered species benefits. That's not being done at present.

For one thing, the average size of the land enrollment in the CRP in the six-county area is 21 acres, which is frankly too small a size to be of any practical value for this particular endangered species. With some greater attention to enrolling larger tracts, or

enrolling tracts that are contiguous to protect areas, it would be possible to get the same soil erosion benefits at no extra costs and simultaneously get significant endangered species benefits.

So I believe that's another area that is very fertile for your inquiry. Thank you very much.

Senator KEMPTHORNE. Mr. Bean, thank you.

I would note that Mr. Bean and I had made a request to the Keystone Group for this whole effort. And I appreciate greatly all that has taken place, and Dr. Sweeney, your involvement with that. So as we proceed now with our questioning, I will look forward to further comment on that.

Before we go to a round of questions, Senator Reid, do you have any opening comments you would like to make?

Senator REID. No, thank you.

Senator KEMPTHORNE. We're glad that you're here.

Senator Thomas, any opening comments?

Senator THOMAS. None, Mr. Chairman. Thank you for having this, and I'm especially grateful and look forward to having a hearing in Wyoming.

Senator KEMPTHORNE. I do, too. Thank you very much.

Let me begin our questions. Mr. Loop, would you expand for me on the specifics of the Farm Bureau's suggestion for voluntary incentives that could be provided under the Endangered Species Act?

Mr. LOOP. Senator, we have looked at a number of things. This is an area that a lot more work needs to be done in. In Florida we've got a project, we call it perfect partnership, it's an educational program where we're trying to educate not only the landowners on the value of them providing habitat, but educating the public to the advantage of having wildlife habitat on agricultural lands. This started because of the panther problem there in Florida, and the fact that they need to purchase 3 million acres of land to protect the panther, which is unrealistic. If they had the money to do it, they couldn't maintain it.

So that's what this started from. We have found this is a very good program, and we're getting more and more farmers thinking about incentives. One of the incentives that I haven't heard mentioned, a lot of our people said, if we could have a farm plan that had some length to it, where we knew we could continue to farm, we could continue to get water consumptive use permits and all the regulatory things, and had some assurance for a reasonable length of time where we could go ahead and expand, where we could make the investments and do those things, that would be a real incentive to maintain habitat on our property by, you know, you could plant in mosaics and leave wild areas, rotate, a lot of things you could do to entice and provide habitat.

But the way it is now, there's just not that incentive there, and there is some cost in providing this.

Senator KEMPTHORNE. All right. Good, I appreciate that.

Mr. Smith, I found interesting your comments that while we need to address incentives, we really also need to address the disincentives that are currently in the Act.

Mr. SMITH. Yes, sir.

Senator KEMPTHORNE. You've talked about the role of private conservation in protecting wildlife and habitat. How could private

conservation assist in protecting rare, threatened and endangered species and their habitat? And do you believe, I don't know that you've had a chance to look at the report from the Keystone group?

Mr. SMITH. Yes, I have.

Senator KEMPTHORNE. Your comments on that report, as well.

Mr. SMITH. Private conservation, I think, has a very long, as I mentioned briefly in my oral remarks, a very long tradition in America of trying to find ways to uniquely protect wildlife and habitat, and to do this voluntarily by people who cared about those resources. This sort of fits into the long tradition in American of voluntary association, the people who cared about things going out and trying to do good about something when they were concerned.

This was sort of the origin of the National Audubon Society at the turn of the century, when so many species of birds were disappearing because of the plume hunters. While Audubon did lobby and try and change laws, they also went out and purchased land in fee simple, they found the last colonies of many of these nesting birds and bought them, set them aside as private reserves, and hired their own private wardens to protect them. The first game warden or wildlife warden to be killed in the line of duty in the United States was a private Audubon Society warden by the name of Guy Bradley.

There's a long tradition, Audubon is still doing those kinds of things, the Nature Conservancy is doing very similar things today. Many land trusts who see a need to protect some particular species, it could be those species that might have a very limited range, a very small range in a State or an area, in which there was a lot of pressure, there might not be much Government money to protect it. They can often go in and very innovatively buy a conservation easement to protect it or just get a contractual arrangement with a landowner to protect these resources, whatever they are.

On top of that, you've had all these efforts to protect various species by people who had a concern. The wood duck was the classic one. You've had some that are just stressed and specialized in protecting habitat. Those have been largely species that are huntable, like Quail Unlimited, the Ruffed Grouse Society, the National Wild Turkey Federation.

But in finding ways to encourage landowners and showing landowners how to manage for those species, they've also been able to manage, this provides an umbrella impact, effect, over lots of other species that might not have any economic value or have any hunting opportunities involved. So I think there are an awful lot of ways in which we have a long history.

I'm afraid that what is happening now, a lot of this is getting stamped out, pushed to the background because more and more landowners are afraid now of having wildlife habitat on their land, and suddenly something being discovered which is going to be listed as threatened or endangered, and then they're going to be shut down, legitimate operations. I think that would be the worst kind of approach, and certainly those are many of the problems with the Endangered Species Act today, of making doing good a liability for landowners. You don't want to try and protect wildlife in that manner.

Insofar as the Keystone Report, I was able to participate in the first half of the Keystone Dialogue. As I indicated in my oral comments, I think that many of the ideas in there are extremely innovative, extremely promising. They are ideas that we've needed for a long time. I wish when we had first made an emphasis in this country, an attempt in this country to protect endangered species, that we had taken those kinds of approaches instead of stepping in with the regulatory approach, in which we are now bearing the burden of seeing landowners all across the country now afraid to do good and actually going out and doing harm by sterilizing their land.

So I hope that a lot of those incentives in there can be used. My one concern is that a lot of those incentives may not prove to be that fruitful if again they are still layered on top of this fear that landowners have that if they do anything good, if they accept any of these incentives, that then they are going to be penalized when endangered species show up on their land. They won't be able to use their land and they won't get any compensation.

I really think we have to look at first doing something about the fear that landowners have that they will be penalized for doing good before we can give them any positive incentives. The one positive incentive is stop penalizing, stop harming landowners for being willing to share their lands with wildlife. Let's return to the long tradition that we've had of landowners working in cooperation with environmentalists and conservationists to protect our natural heritage.

Senator KEMPTHORNE. All right. Mr. Smith, thank you very much.

Senator Lautenberg.

Senator LAUTENBERG. Thank you, Mr. Chairman.

Mr. Smith, I was interested in a comment that you made in your opening remarks when you said that, and please correct me if I'm wrong, you said that protecting endangered species ought to be something that one wants to do, and shouldn't have to do. Would you like to extend what you said?

Mr. SMITH. I said I think it's something that most people in America, most landowners, have wanted to do, have been willing to do. I think we have a long tradition and history of that. But I think we are now making them fearful of doing that.

Senator LAUTENBERG. I think the record might show that you said that it might, it could, should be voluntary, you shouldn't have to do it. When I think of the things one has to do, whether it's in farming or land development, one cannot use certain pesticides, herbicides, because it's in the general good for the people of our country at large.

So I think that some volunteerism is a good idea, but I also look back to the creation of our country, where it says we're a country of laws, which means everybody kind of has to obey laws for the good, for the common good. You talked about the voluntary work of the Audubon Society, Nature Conservancy, people, organizations I know quite well. How can one compare the work that they do to that of agriculture and land development in terms of volume of disturbance of the natural habitat? I don't think there is any comparison.

I said earlier in my remarks, I am for incentives. But I think attitudinally, one has to agree that protecting endangered species is a national obligation, and that if adjustments have to be made in terms of compensation, I can understand that and would be willing to review it. I would ask Dr. Sweeny or Mr. Bean, is the Act currently as it's constructed flexible enough with the habitat protection provisions in the section 4(d) special rules? Is that too stringent a concern when you look at the whole of the Act, for the landowners, as it concerns the landowners? Or is the flexibility already in the Act?

Dr. SWEENEY. Speaking as a private landowner, I think that the package of incentives that was presented here would indeed provide some additional flexibility to the Endangered Species Act. Currently, the private landowner has to interact through the HCP process to have some form of regulatory certainty brought to bear. That has proven to be rather difficult at times, and particularly for the small landowner. So I would think that we should give serious consideration to some of the additional incentives that we've presented in this Keystone Dialogue to add that list of options, if you will, and thereby add some flexibility to the law.

Senator LAUTENBERG. Mr. Bean.

Mr. BEAN. Senator Lautenberg, yes, I think that with the sorts of incentives that have been recommended in this Keystone Dialogue Report, the concerns that some landowners have had about the Act's impact on them will be dramatically lessened. We will have a more flexible set of tools with which to achieve the Act's goals.

I do want to address the point that you made in speaking with Mr. Smith a moment ago. He gave a list of highly successful, notable successes in conservation. He left off of his list, of course, the recovery of the bald eagle and the peregrine falcon, which came about as a result, principally, of the banning of the pesticide DDT. Had we waited for voluntary action on the part of cotton farmers and others who were using DDT in the 1960's and early 1970's, chances are that we would not have our national symbol with us today.

So I think it is important to recognize that as valuable as incentives are, and I strongly support all that have been recommended here, we have to be realistic about what can be accomplished through voluntary action. I think it's also worth pointing out that had, in 1972, there been a Federal law that said any Federal regulatory action that reduces property values by some specified amount requires the payment of compensation, very likely cotton farmers in the south would have been in a position to claim that the banning of DDT devalued their crop land by more than 20 percent or some similar percentage.

I have no doubt that there would have been agricultural land appraisers who would have testified that the banning of DDT had that impact on farm values. Had we had a compensation requirement such as has been proposed in this Congress, you would have found yourself facing a great many claims from farmers for compensation for banning DDT. I doubt, in light of those claims, whether it would have been possible under those circumstances to ban that pesticide. Yet, the banning of that pesticide, through regu-

latory action, has in fact made possible one of the most significant conservation successes in our lifetimes.

Senator LAUTENBERG. Mr. Loop, I would ask you whether or not land enhancement of farmers has taken place as a result of Government programs like irrigation, flood control, things of that nature, infrastructure access to property, roads, etc.?

Mr. LOOP. Certainly, there has been appreciation to land values because of those things. No question about it.

Senator LAUTENBERG. Thank you, Mr. Chairman.

Senator KEMPTHORNE. Senator Lautenberg, thank you very much.

Mr. SMITH. Could I respond to the comment the Senator made originally?

Senator KEMPTHORNE. Mr. Smith, yes.

Mr. SMITH. I think that if Congress does decide that protecting the endangered species is a national obligation, that it is a public good in the national interest, then I feel that as we do with all other public goods, we should also suggest that the Nation as a whole, the taxpayers, pay that burden. That is, not unfairly rely totally upon the landowner who happens to be the one person who has that habitat on his land.

Just as if we decided it's in the public interest to build a highway somewhere, we see that the landowners are compensated when their land is taken from them, when they can't use their land and it's used for a highway. I see no difference between that and telling a landowner that because you were a good steward of your land and have wildlife on it, we're now going to turn it into a public endangered species wildlife refuge, and you're going to bear all the costs. Everything you did in the past to provide this amenity for the public is simply down the drain and you bear the burden.

Senator LAUTENBERG. Mr. Smith, would you suggest, I'm sorry, Mr. Chairman, but I'll relinquish my time in the next round, would you suggest that therefore the enhancements to property value by virtue of subsidies, by virtue of farm bank loans, by virtue of other programs, be thrown into that calculation? It can't be just one way. There is a special interest that we have in farms, in particular. Lots of States, including mine, give special tax incentives to people who maintain their farms.

Part of that, I think, brings an obligation to help protect the environment. That's why you can't use pesticides of a particular nature, and they are very restrictive in what you do with various of the farm toxic materials that one handles. It's a two-way street, Mr. Smith.

Mr. SMITH. Sir, one other point.

Senator LAUTENBERG. Let the chairman run the meeting, not you and I.

Senator KEMPTHORNE. Go ahead, and conclude your point.

Mr. SMITH. I do find it somewhat ironic that when we decide we want to have a wildlife refuge for waterfowl, just for normal wildlife, then the Government does not come in and say to somebody that you have to turn your land over or we're going to take your land or regulate your land. We buy the land when it's for a regular wildlife refuge. If endangered species wildlife refuges are so important, I don't know why we couldn't also buy the land for them, too.

Senator KEMPTHORNE. All right. Thank you very much.

Senator Chafee, would you like to——

Senator CHAFEE. No, as I mentioned to you, Mr. Chairman, regrettably I had to go to this meeting dealing with fisheries, so I missed a little bit. But I just will ask Mr. Loop one quick question, if I might.

Mr. LOOP. Yes, sir.

Senator CHAFEE. I know we have other panels. Mr. Chairman, I want to say, I've been on this committee quite a while, and I haven't seen it start at 9 o'clock before, so that's pretty good. My father always told me that America was made great by men that got up early, men and women we've changed it to, now.

Mr. Loop, I noticed in one of your points that you wanted the farmers paid for loss of property values.

Mr. LOOP. Yes.

Senator CHAFEE. That is in some of the legislation in the House. Starting where, at what percent? Would you have it at 1 percent? Any percent?

Mr. LOOP. We see a lot of figures batted around.

Senator CHAFEE. You may have covered this. Was this covered?

Mr. LOOP. No, I have not covered it.

I think there should be a reasonable percentage where we don't get into the insignificant cases and so forth. But in Florida, we just passed one that says 40 percent.

Senator CHAFEE. Some of the legislation deals with what they call the affected portion. That says that if you've got 1,000 acres, just for example, and let's say there's an endangered species on 300, the percentage applies, oddly enough, just to the 300, not to the total, which all seemed to me rather odd, because if you're restricting it to the percentages affected, obviously you're going to have a pretty odd percentage.

Mr. LOOP. That also comes into play and has a different impact on small landowners. You know, you can take a small percentage of a small piece of property and destroy the use of that whole piece.

Senator CHAFEE. Yes. Point No. 6 that you made there, you talk about having a cost-benefit analysis. The problem with that is that obviously you can figure the costs, but the benefits, what's the benefit of a butterfly?

Mr. LOOP. I think there has to be some benefits here, and I don't think all species have the same benefits. I think this has to be worked into the equation to determine at what cost do we save these species and what is the benefit of saving them.

Senator CHAFEE. Well, I think we're kind of on a slippery slope if we try to ascertain a value, a dollar value, to any of these species, even something as magnificent as a grizzly bear or an American eagle. We're all for American eagles, but how do we put a cost on saving this species? It could be very, very difficult.

I just wanted to point out some of those challenges that we face once we get into any suggestion of dealing with either the cost benefit or the property problem.

Thank you very much, Mr. Chairman.

Senator KEMPTHORNE. Senator Chafee, thank you very much.

Senator Reid.

Senator REID. Would all of you agree that President Clinton, in exempting 5-acre plots of land, private owners, from the Endangered Species Act, took an appropriate step?

Senator KEMPTHORNE. Why don't we start with Dr. Sweeney?

Senator REID. Anybody disagree?

Dr. SWEENEY. No, I agree with that. I think it's a step in the right direction to give some consideration to the small landowner.

Mr. BEAN. The proposal that has been made has a little more to it than what you've described. It is a presumption that activities on 5 acres or less will not adversely affect threatened species. It allows for an overriding of that presumption when circumstances demonstrate that in fact such activities could adversely affect threatened species. As long as that's clearly understood, I would say I think that's probably an appropriate step.

Senator REID. It, in effect, reverses the presumption that now exists?

Mr. BEAN. That is correct.

Senator REID. Anyone else disagree with that?

Mr. SMITH. I think it's a good idea from the point of view that it is now being applied to threatened species and this is beginning to develop, for the first time, the flexibility that was supposed to be there for threatened species. I think for too long, threatened and endangered have been treated in exactly the same way. So from that point of view, I think that's a good step.

Senator REID. I'd like to follow up on the line of questioning of Senator Chafee, the chairman of the full committee. Later, there's going to be a later witness from the University of Texas, or one of the Texas schools, who's going to testify. As part of the testimony, they brought the journal from the real estate center at Texas A&M University. And there's an article in there about endangered species.

In there, they talk about some of those in Texas that are listed, the Mexican long-nosed bat, whooping crane, Louisiana black bear, Mexican spotted owl, brown pelican, numerous sea turtles. I don't know if this is what Senator Chafee meant, but the way I interpreted it, because I had it in my questions here, I've never seen a Louisiana black bear, but I'm glad they exist. And I think we're a lesser society if one's gone. Does anyone disagree with that?

Mr. BEAN. Senator Reid, I certainly don't. But just for the record, there is one person who did see a Louisiana black bear, it was President Teddy Roosevelt. In fact, he rescued a young Louisiana black bear cub, and as a result, the teddy bear name came into being. So I think even that aside, your point that all of these creatures are important and valuable is a point I very much agree with.

Senator REID. The reason I mention that, we continually hear about reforming the Endangered Species Act, that we have to have a cost-benefit analysis. There's always an assumption, I shouldn't say an assumption, always an insinuation that a lot of these animals aren't worth anything. I have some difficulty in arriving at that conclusion. Because I don't think that I can make that judgment.

I think that as we look at revising the Endangered Species Act, I think we have to look at, I think we have been too species-spe-

cific. We should look more at an ecosystem, be more concerned about an area rather than an animal. And in the process, hopefully do a much better job for them all.

Well, I'd like to have comments from the panel on that.

Dr. SWEENEY. I think it's important, Senator, to understand, all of us feel it's important to address threatened and endangered species. It's not one species against another. It's just how we go about the process. I think the flexibility that might be garnered by serious review of the incentives here would help us do a better job of addressing threatened and endangered species.

There are other issues we need to look at, including the incorporation and use of some of the latest scientific tools that have come about since the enactment of the Endangered Species Act. Perhaps some better definition of the recovery plans and so forth. It all relates to how it's done, really not whether or not it should be done.

Mr. SMITH. Senator Reid, I would agree with that. I think there are so many species, and it's going to be so difficult to find the money and/or the policemen to save everything, that I think it's contingent upon us to do everything we can to make sure that the Nation's private landowners who do own a majority of the land in America are willingly and voluntarily working along with those people who are concerned about endangered species to make sure that they have a place. We have to be careful that we don't turn them against this effort.

Senator REID. My response to you would be, I agree. But I think, as Senator Lautenberg said, I think there has to be a balance between what we have in the way of incentives for private landowners, and also some protections for the species themselves to take some kind of a balance. It can't be, I think it was Mr. Loop who said, and I wrote this down, should protect animals because they want to, not because they have to. That system just won't work. There has to be monetary incentives and some Government restrictions, or in due time everything would be gone.

Mr. Loop, I interrupted you.

Mr. LOOP. Yes, Senator, there's not any species, that if I'm asked the question, would I like to see it protected or not lose it, that I would not say yes. But I think we have to look first of all at the science, and is it really an endangered species. And then I think you've got to take in the economic and social impact of doing this.

There's a lot of things we would like to do and would like to save. But is it practical to do it. I think we have to consider those things, and not just the question, would you like to save this species.

Senator KEMPTHORNE. All right, Senator Reid. Well, Mr. Bean, did you want to make a comment?

Mr. BEAN. I just simply wanted to say, Senator Reid, that I think your observation is correct. I believe that a great deal of positive conservation action can come about as a result of voluntary action by private landowners and others. I don't think, however, that a purely voluntary action or solution to this problem is going to solve it any more than, for example, relying on purely voluntary action to reduce traffic fatalities by removing stop signs at intersections, would do so.

So I think we have to be realistic about what can be accomplished through voluntary measures and what will need some form of regulatory requirement.

Senator REID. Mr. Chairman, I'll waive my rights to ask questions for the rest of the day. I think we really need a response to the question, I was very interested in it, what do we do about inheritance taxes? That was raised as an issue. But there was no answer.

Senator KEMPTHORNE. Let me—when do you have to leave, Senator Reid?

Senator REID. We have a vote real soon.

Senator KEMPTHORNE. OK, 10:35. So what we'll do, I'd like to allow Senator Thomas to ask his questions. But before we break, I would like to then direct that question. So you might all be thinking about that.

Senator Thomas.

Senator THOMAS. Thank you, Mr. Chairman. I'll be brief. I'm sorry I missed the testimony.

The question period, however, has caused me to think that this is one of the most thoughtful panels that we've had. And I've been to a few.

I think an important thing in this whole debate, and we've talked about it here a little bit, we're going to have to start, it seems to me, to make it useful, with the stipulation that most all of us, or all of us, want to maintain endangered species. It's easy for both sides to get away from that and accuse everyone of trying to get away from doing it. What we're looking for is the better way to do it.

I have to say to my friend over there that we're not talking about whether we obey laws or not. That's not the controversy here. Of course, we're going to obey the law. We also have to talk a little bit about private property. There is, as well as our tradition of obeying the law, we have a tradition of protecting private property. And that's a very important tradition.

One of the hearings we had before, the director of the Wildlife Service was here, and I was talking about grizzly bears and the fact that we have reached the target, 2 or 3 years ago, and still haven't been able to delist them. She said kind of under her breath, well, they're worth a lot, time doesn't matter. That's not really the issue. We're talking here about how do we have effective regulation. We're talking about the way we do it, not whether the grizzly bear is valuable or not. Everyone agrees to that, I would guess. But it ought not to take 3 years to delist a critter that has passed and exceeded where we are.

So I'm interested and pleased with what you're saying. Let me just ask one question, Dr. Sweeney, because it says Doctor on the front of your thing. Base decisions on sound and objective science. I went to a hearing not too long ago where there was quite a different view brought by environmentalists, and in this case, people who were industrial people who had lost jobs and so on. They both had their own scientists. There were two different views of science. How do you systematically come up with objective science?

Dr. SWEENEY. Therein lies, I think, a very good example of the problem we face when we're dealing with endangered species. I'm

sure you're quite aware that whenever we're talking about an endangered species, a rare species, we have limited data. Rarely will we have all the information we need to honestly say, it's this way and no other way. So you've got very limited data to work with.

You've also got a very complex ecosystem out there that's dynamic and changing. It changes from whether you're in New York or you're in South Carolina or in the Pacific Northwest. We scientists can look at a set of data, particularly, as I said, if it's limited, and draw some conclusions. Those conclusions are going to reflect the data, they're going to reflect my personal assumptions and my personal experience as well.

Therein lies the divergence. It isn't that this person's right or this one's wrong, they have two different perspectives and probably two different willingnesses to accept risks to the assumptions they tie to those data.

So what we're asking that you address in reauthorization of the Endangered Species Act is to provide some standard procedure to highlight where the data are lacking, to highlight those assumptions, and then to schedule specific research to address those assumptions. That's the incorporation of the scientific method into the process. It should be a standard part of procedure. Right now we get some of that through public input after a proposed rule is written.

But then it comes across as being a critique, of what the agency has done. The agency goes into a defensive mode rather than a cooperative science mode. If it's part of the standard process, that will facilitate information coming from other sectors, getting into the decision and not being challenged as a critique and going into the defense mode.

Senator THOMAS. We don't challenge the integrity of scientists, but I suspect that if a scientist works for a particular advocacy group, there is some tendency to emphasize those things that are attractive to that group that he works for. Is that fair?

Dr. SWEENEY. That's fair, Senator. I wrote a paper on this very topic, the ethics of science versus advocacy, that I'd be glad to share with you.

I think a scientist has a responsibility, when he presents himself as a scientist, to give all the facts on both sides of the issue. If I as a scientist come before you on behalf of a particular trade association or conservation group or what have you, I need to say where my scientific data stop and where my opinion, professional opinion, starts.

Senator THOMAS. Thank you.

Thank you, Mr. Chairman.

Senator KEMPTHORNE. Let me acknowledge, this is the report that we've been talking about a great deal this morning, the Keystone Dialogue on Incentives to Protect Endangered Species on Private Lands, compiled by the Keystone Center. And again, Dr. Sweeney and Mr. Bean, I appreciate very much your efforts, and Michael, again in joining with you and our joint request that this become a reality.

Also included in there is a list of all the participants, which is a very interesting list. Included in here, and I might just add, this, I think, is going to be an extremely important tool in our whole ef-

forts as we rewrite the Endangered Species Act. In Chapter 3, we talk about the inheritance tax. Of course, at different hearings we've talked about that. The concept that if a landowner were to grant an easement, a conservation easement, that the tax liability could be deferred as long as that agreement is in effect. Also, there is one other aspect, and that would be the gifting of the easement.

So could you address now, anyone, your thoughts on that inheritance tax, and is that an important tool that ought to be included in the Endangered Species Act?

Mr. BEAN. I'll be happy to address it. I do think it's a very important tool. There are actually two recommendations in the Keystone Report on this subject. One would allow a gift of a conservation easement after death. Under present law, a landowner, in order to reduce his estate tax liability, has to convey a conservation easement prior to death. If he fails to do so through inadvertence or any other reason, it's too late once he dies to avoid the full consequences of the Federal estate taxes. One of the proposals would allow the executor, with the consent of the heirs, to make a gift of the conservation easement, and thereby reduce the estate tax burden.

Conservation easements, however, are permanent property interests. There are some landowners who are risk averse and who are reluctant to part with a permanent property interest, because they are worried about the future. There might be an illness or some other contingency in the future that necessitates them having the full value of their land.

So one of the other recommendations in the Keystone report is to allow landowners in that circumstance to be able to defer the tax, the estate tax, on a piece of property, if they are willing to enter into and to maintain an agreement for endangered species conservation on that land. As long as they honor that agreement, the tax is deferred. If in the future they decide they want out because of an illness or any other reason, they can get out, but at the cost of paying the tax that has been deferred.

So that's the second option that the Keystone report offers. I think they are both very constructive ways to address this problem.

I would point out, with respect to the second option in particular, the price tag for this is, at least according to our preliminary analysis, exceedingly small, a few million dollars a year in terms of reduced receipts to the Federal Treasury. I believe the perception of this on the part of farmers, ranchers and other land rich and cash poor landowners will be that it's a very attractive opportunity for them.

Senator KEMPTHORNE. Mr. Bean, I think you stated it was about $4 million?

Mr. BEAN. That is our preliminary estimate, that's correct.

Senator KEMPTHORNE. Who calculated that, and who has reviewed that?

Mr. BEAN. That has been calculated by my colleagues at the Environmental Defense Fund based on data provided to us by the IRS with respect to the current receipts to the Treasury, based on Federal estate tax receipts based on land. We made some assumptions about what percentage of lands are likely to have endangered species and be the subject of endangered species conservation agree-

ments, assumptions that I think are generous in terms of inflating the actual costs. Even with those assumptions, though, the price tag, the annual reduced receipts to the Treasury, is as low as you had suggested.

Senator KEMPTHORNE. Dr. Sweeney, we've heard a very good identification as to the program itself. Put your industry hat on. Is this worthwhile?

Dr. SWEENEY. The incentives that we have developed as a package, some of them fit some people, and some fit others. The estate tax reform concepts probably fit best the small, private landowner or a company that is run by a small family, something like that. It really is not going to be, let's say, very attractive to a large corporate landowner. It just won't fit into that category.

Senator KEMPTHORNE. Mr. Loop, how about the farmers of America?

Mr. LOOP. A lot of small farmers have a real problem, and can't pass farms on because of inheritance tax. There needs to be some relief here. We would hope that this would be addressed under tax reform. But if it's not taken care of, then I think it would be a good incentive in this list of incentives to help with the endangered species.

Senator KEMPTHORNE. All right.

Mr. Smith.

Mr. SMITH. I agree, it's a very important consideration of protecting endangered species habitat, just for seeing that large contiguous areas of private land holdings are not broken up on the death of the current owners.

Senator KEMPTHORNE. On this aspect of taxes, any other Senator with a question on that?

Senator REID. I just want to make sure a member of the Finance Committee is listening closely.

Senator CHAFEE. I'm listening very closely, and applauding. The only tax bill we'll have come up this year will be with the reconciliation, as you know, in the Finance Committee. It's interesting that Senator Dole and some others have a bill in dealing with farm land increasing the exemption for both farm land and closely held small businesses, family owned small businesses.

I think it's interesting, Mr. Chairman, and I don't dispute the figures Mr. Bean gave. It's relatively modest to do something here. I hope we call get encouraged to do something about this. There are several members of this committee who are on the Finance Committee.

Senator REID. The bill, reconciliation, will not be controversial anyway, so why not just throw this in it?

[Laughter.]

Senator KEMPTHORNE. Just a couple more questions. Dr. Sweeney, again in the report, we talk about the safe harbor provision. Of course, again, we have discussed the fact that we ought to codify that if it's a good thing.

In the report, it states that the safe harbor should be used to protect landowners from restrictions as a result of the migration of new species onto the land, but not for species that are already in residence on the land. My question is, why did you come to that conclusion?

Dr. SWEENEY. It's either new species that might move into the habitat that's been created, new in the sense of different species, or "new" in the sense that the species may occur in the area, but just didn't occur on your property. You have a responsibility, as you go into the "safe harbor" agreement, for the endangered species that are already there.

That's your baseline responsibility. They are already there for whatever reason. For example, in the Pacific Northwest, we might have a tract of property that has one or two spotted owls over here, but a large tract of property that's 40, 50 years old, that is not currently occupied or under the influence of the regulatory circle of the spotted owl.

We may make the decision, or want to make the decision, that we'd like to carry that tract of land on a longer rotation because we can grow some timber products as opposed to fiber products. Or, because we may want to look at increasing the bio-diversity in the area. We call these our wildlife habitat units; they are designed to increase the structural diversity in the landscape. But we're hesitant to do so, because by growing these habitats to the longer 70-, 80-year rotation, we could develop a tract of spotted owl habitat and attract owls into that acreage that currently is not encumbered.

But when we get a spotted owl, under the current regulations, it would be encumbered. And that is a disincentive.

Senator KEMPTHORNE. So let me restate it, then. The whole idea of a safe harbor is to say that if you have particular habitat that would be conducive to an endangered species, and you set aside, then, a portion of that land, that will become habitat. The rest of your private land, you do not have restrictions, correct?

Dr. SWEENEY. No, sir. The safe harbor applies to the particular area of land that you've made the agreement for. For this piece of land, we might develop, like I say, a safe harbor agreement, that we're going to carry our property into this longer rotation. The benefit to the species is, it may use it. We may carry it 70, 80 years, and over time, keep it on a 70-, 80-year rotation. And by that way, provide some additional owl habitat that otherwise would not be provided.

But we retain the right to harvest the timber when we feel it's necessary to harvest the timber, even if the spotted owl has migrated now into that area. But it relates only to that tract of land that we've got the agreement for. Outside of that area, if we're doing other things, we're still under the standard regulations of the Endangered Species Act.

Senator CHAFEE. Could we use some specifics? Let's say you've got 1,000 acres. You've got 300—and it's all timber—you've got 300 acres with a spotted owl in it. No, let's make it easier. Let's make it 100 acres. So you enter an agreement with the Department of Interior that you will set aside this 100 acres for the spotted owl.

As I understand it, on the other 900 acres, now you're free to do what you want with it. If a spotted owl shows up in it, you might notify Interior to try and get it out of there in some fashion, but you can do what you want with the other 900 acres. Isn't that the way the system works?

Mr. BEAN. I think I can make this a little more easily understood, Senator. Basically, the safe harbor concept says to a landowner, we're going to tell you exactly what your current endangered species obligations are, if any. You may not have any current endangered species obligations. But whatever they are, the safe harbor agreement is going to tell you what they are. Then the agreement is going to go on to say, in return for your doing things that are going to improve this habitat for endangered species and result in the use of this habitat by endangered species beyond current use, we will assure you that you will not increase your obligations from what they currently are.

So for the landowner who has no current endangered species obligations, it is a way of saying to him, in return for your improving the habitat, even if endangered species use that habitat in the future, you will be free to undo those improvements in the future, because your baseline responsibility, your current responsibility, is zero.

For the landowner who may have, on a corner of his property, a spotted owl or red-cockaded woodpecker group, current regulations of the Fish and Wildlife Service say that so much habitat has to be kept in a certain condition for that pair of owls or that group of woodpeckers. The safe harbor agreement for that landowner would allow that landowner to carry out improvements on the rest of his property that may result in additional owls or additional woodpeckers but no additional legal obligations.

Senator CHAFEE. And he can clear cut the other land.

Mr. BEAN. He can clear cut in the future should he wish to.

Senator CHAFEE. The other thing Senator Kempthorne was asking about, what's the other word they used besides safe harbor? No surprises. If you're dealing solely with the red-cockaded woodpecker and then along comes something else endangered, the butterfly, you're protected from that, too, are you not, under the safe harbor?

Dr. SWEENEY. If under the safe harbor agreement you agreed to do X habitat management that would improve the habitat for the species, if that habitat is indeed the habitat of the butterfly, yes, you're protected against the butterfly. The butterfly is using a different component of the habitat that you had really not entered in or created or enhanced.

Senator CHAFEE. You hadn't thought about it.

Dr. SWEENEY. You'd be outside it.

Mr. BEAN. In North Carolina, where we have this functioning safe harbor program in place, the way in which that works, the assurance that the land owner gets is applicable with respect to all listed species and all candidate species that might be listed in the future. There is, however, a recognition that some properties may not be appropriate for safe harbor agreements, because of the anticipation that some other species may be disadvantaged by that agreement, in which case that landowner will probably be unable to negotiate an agreement with the Fish and Wildlife Service.

But that situation hasn't arisen. It's a theoretical possibility. That typical situation is that a landowner there enters into an agreement. His obligations are identified by virtue of the Fish and Wildlife Service's existing rules for the red-cockaded woodpecker. His future obligations under the Act will not increase as a result

of his doing anything on his property pursuant to that agreement that increases its habitat value.

Senator KEMPTHORNE. Dr. Sweeney and Mr. Bean, would you respond, then, to what Mr. Smith said. Because to characterize, I think Mr. Smith said all these incentives are well and good, but they do not release the landowner from the fear of the future regulations that may impact the land. Is that correct, Mr. Smith?

Mr. SMITH. Yes.

Senator KEMPTHORNE. So how do you answer that?

Mr. BEAN. Well, with respect to the safe harbor agreement, the landowner receives a permit under section 10 of the Endangered Species Act, which gives him the right to incidentally take endangered species on his property in the future, so long as he doesn't, so long as his actions don't reduce his habitat below his baseline as I've described.

For the landowner who's got a zero baseline, that is, a landowner who enters into the agreement with no existing endangered species responsibilities, the permit allows him to incidentally take everything in the future, should he choose to do so. So he's got in his hand a permit from the Fish and Wildlife Service that gives him the legal right to incidentally take. So he should have no fear of any future requirement to maintain what he has voluntarily created.

Senator KEMPTHORNE. Mr. Smith, a response?

Mr. SMITH. I think one of the things I would like to see on all of these kinds of programs, whether it's safe harbors or no surprises, or any new innovative programs that come out, is that they are fully spelled out in the Act, they are part of the law, so that we know that what you have here is the rule of law, and this is not some temporary, capricious flexibility that's found in the Act in order to get the Act reauthorized, and then during the next Administration or the next Congress, the flexibility can work back the other way. That would be one concern I would have.

Senator KEMPTHORNE. I would agree with that. Mr. Loop, any comment?

Mr. LOOP. No comment on that.

Senator KEMPTHORNE. All right. Final question, then I'll allow the panel to have their rest. Dr. Sweeney, this is a very, very interesting list of participants.

Dr. SWEENEY. It is.

Senator KEMPTHORNE. This is a real cross section. Are you pleased with this report?

Dr. SWEENEY. Yes, I am. I think we had a very, very strong discussion, very interesting discussion. During the two 2-day meetings, we had experience being brought from a very broad sector of people. I think we pulled together 19 visible incentives, 18 of which we reached consensus on. The other incentive, disagreement centered on how it's presented, and not the basic idea.

Senator KEMPTHORNE. Right. Mr. Bean.

Mr. BEAN. I fully concur. I take my hat off to all the participants in the group. We came from diverse backgrounds, and as I said in my testimony, I doubt that we agree on much else about the Endangered Species Act. But we were willing to put aside differences

on other issues and try to find common ground on this important area of incentives. And we did that.

Senator KEMPTHORNE. So all members of this panel will be supportive and look forward to a component of incentives as part of the reauthorization of the Endangered Species Act? All right.

Mr. SMITH. Insofar as we still have this problem with compensation for landowners, is my remaining concern.

Senator KEMPTHORNE. I appreciate that. You've been an excellent panel. May I invite you, as well as the next two panels, that as you hear things this morning that we didn't get to fully explore, if you have additional comments or thoughts, please pen those to us. Because we're looking for that sort of input. I thank you very much.

I would invite the second panel to please come forward.

All right, ladies and gentlemen, we will continue this hearing. Let me welcome this panel. We look forward to your testimony. This particular panel will be discussing the section 7 critical habitat and conservation plan aspect of the Endangered Species Act.

I will just note for you that probably in just a few moments you may hear bells go off, meaning that a vote will be in progress in the Senate. What we're going to do is, Senator Chafee will go over and vote, we're going to try to do a tag team and keep the hearing moving. So if you see us step out for a couple of minutes, it's not because of disinterest, but we just want to keep things moving here.

With that, let me introduce Mr. Mike White, who is the General Counsel for Hecla Mining Company in Coeur d'Alene, ID.

Mike, welcome, nice to see you again.

STATEMENT OF MICHAEL WHITE, VICE PRESIDENT AND GENERAL COUNSEL, HECLA MINING COMPANY

Mr. WHITE. Thank you, Mr. Chairman. I thank the members of the committee for the opportunity to be here today.

As the chairman has indicated, my name is Michael White. I'm vice president and general counsel for Hecla Mining Company. We're a 105-year-old company based in Coeur d'Alene, ID. Our operations are comprised primarily of precious metal production, but we also have a significant segment of industrial minerals operations throughout the United States, but primarily in the West.

To summarize my testimony, which I intend to submit to the committee today, I did touch on a number of areas in the ESA which Hecla Mining Company believes should be the subject of reform. These include limiting the breadth of definition of species, critical habitat, stricter guidance for best scientific data standard, including peer review and private sector input, economic impact considerations being mandated in the Act at the various decision points, compensation for taking of private property, and the introduction of an irreparable harm standard for citizen suits with respect to injunctive relief.

However, Mr. Chairman, my testimony primarily focuses on section 7 of the Act, section 7(a)(2) specifically, and the consultation requirements under the Act, or section 7. We believe that the combination of section 7(a) consultation obligations and the citizens suit provisions providing for injunctive relief, at least as currently interpreted by the courts, creates an unfavorable and unworkable

and primarily unpredictable environment for investment in the west and resource development in most of the western United States. Because much of the resource development, specifically mining and timber, is on Federal ground or managed by the Federal Government, almost in every case, there is a Federal agency approval required.

This approval process, at least as interpreted under section 7 by the courts, requires a multiple consultation process, not only for new projects, but for continuing projects in the form of reinitiated consultation. These multiple consultation requirements present companies like Hecla with the real possibility that if consultation is reinitiated after a project goes into production, and the agencies do not comply with the consultation obligations set forth in section 7, the projects into which millions of dollars have been invested can be shut down and the sole basis of that injunction is the failure of consultation, and a finding of a mere possibility of harm to threaten species or critical habitat.

These unworkable processes under the Act, particularly section 7, include multiple consultations with the various Federal agencies. These occur not only on the project level, but the forest plan, and may occur on the drainage level, particularly when it relates to, in this case, endangered salmon.

Also, the reinitiated consultations are mandated on each of these levels, when new species are listed, species are upgraded, and new information is made available concerning critical habitat designation. So at each juncture, you may initiate, or consultation may be reinitiated, which leaves open the opportunity for injunctive relief as happened in Idaho.

The entire process, coupled with the opportunity for antidevelopment interests to seek injunctive relief under the citizens suit provisions, has a significant impact and causes unreasonable delays in new and ongoing resource projects with little or no evidence that adverse impact has actually occurred for threatened or endangered species or for critical habitat. We only need turn to an example of this in Idaho last year, or earlier this year, in the Pacific Rivers Council case.

In that case, the Pacific Rivers Council filed for injunctive relief under the Endangered Species Act, asserting that the Forest Service and the National Marine Fisheries Service had failed to initiate or complete required consultations on land management plans for six national forests in Idaho in response to listing two species of salmon under the Endangered Species Act. The plaintiff sought to shut down all current and prospective mining, road building, raising and logging activities within at least one-third of the State of Idaho.

Based on the prior Pacific Rivers decision in Oregon, which related to the same issues, the Idaho court held that the Federal agencies failed to comply with the required consultation under section 7(a)(2), and the court issued an order halting all future and ongoing operations within these six national forests.

Hecla Mining Company has a mine within one of these national forests. It's called the Grouse Creek Project. It is a project that currently employs about 120 people, the largest employer in Custer County, ID. We invested, along with our joint venture partner, ap-

proximately $120 million into the project. We went through a very detailed, complicated and long environmental permitting process for the project, including going through the NEPA or EIS process.

We went through a consultation process for all threatened or endangered species, which include certain salmon species. Our project was determined not to likely affect endangered salmon. We also increased or improved habitat for salmon by increasing some of the availability of habitat along the drainage along which our project was located.

The injunction was issued in January of this year, and it was only after a significant amount of pressure from citizens of Idaho, from county, State and Federal representatives that the impact of the injunction was avoided, when the parties to the action, the Federal Government and Pacific Rivers Council, stipulated to the stay pending the completion of Federal consultation. I think what's important is this happened in the face of no finding or evidence that the failure of the Government's action, either with respect to the initiation or continuing consultation, had any adverse effect on the endangered salmon or its habitat.

Mr. Chairman, I thank you for the opportunity to testify and address these important issues. I am of course available for questions.

[Additional information submitted by Mr. White for the record follows:]

POTENTIAL AMENDMENTS TO THE ENDANGERED SPECIES ACT

1. Add new section 7(a)(5) [16 U.S.C. § 1536(a)(2)]:

   Consultations under subsection (a)(2) of this section shall be based upon the best scientific data available at the time the consultation is conducted. Subsequently developed or obtained information, or subsequent listings of species or designations of critical habitat under this chapter shall not affect the adequacy of a previously completed consultation under subsection (a)(2).

2. Add new section 11(g)(6) [16 U.S.C. § 1540(g)(6)]:

   Injunctive relief shall be available under subsection (g)(1) of this section only upon a showing by the plaintiff that the activity sought to be enjoined will cause irreparable harm to a listed species or to designated critical habitat.

3. Add new definition to section 3 [16 U.S.C. § 1532]:

   The term "irreparable harm" means an actual physical disturbance to the environment that is likely to injure or kill a listed species or is likely to irreparably damage designated critical habitat.

Senator KEMPTHORNE. Mr. White, thank you very much. Let me just note for the record that Mr. White comes from a long line of involved citizens. Both his father and grandfather served in the U.S. House of Representatives, Compton White, Sr., and Compton White, Jr. So Mike, we appreciate your being here today. This is not foreign turf to you.

With that, let me introduce Mr. Sherl Chapman, who's executive director of the Idaho Water Users Association in Boise, ID. Sherl, welcome.

STATEMENT OF SHERL L. CHAPMAN, EXECUTIVE DIRECTOR, IDAHO WATER USERS ASSOCIATION, INC.

Mr. CHAPMAN. Thank you, Senator. I do appreciate the opportunity to be here at this hearing.

For the record, the Idaho Water Users Association is an organization that represents irrigation districts and canal companies, municipalities and agribusinesses throughout the State of Idaho.

I want to talk today just about a couple of issues, because of our time limitations. I have submitted written testimony which I assume will be put into the record.

Senator KEMPTHORNE. Yes, in fact, let me just make note, all of your written testimony will be made part of the record. So if you want to just highlight the key points, that's helpful.

Mr. CHAPMAN. I'll try to do that.

Senator KEMPTHORNE. I probably owe you 60 seconds for that little blurb.

Mr. CHAPMAN. The two issues I want to talk about today relate to water allocation and State primacy, and then the section 7 consultation issues. The appropriation doctrine, the first in time, first in right doctrine, is what has seen us through in the western United States for many, many years, well over 100 years. That's the only way that we've been able to eliminate the chaos that occurred in the early years when water was just taken by whoever was on a ditch or whoever was on a stream.

Without the appropriation doctrine we would have had continued chaos, and most of the water issues would have been settled as they were in the early years, and that was with a gun or a shovel, and a lot of acrimony. Today, we settle most of those in the courts, with no less acrimony, I'm afraid.

The problems that we have seen recently is that over the last several years, because of the Endangered Species Act and the listing of species, we've seen the Federal bureaucracy suggest that first of all, the Endangered Species Act is the supreme law of the land which usurps even congressional authorizations, second, that existing contracts between water users and the Federal Government can be abrogated in the name of the endangered species, and last, that water may be taken for endangered species when the Secretary of the Interior decides it's necessary.

Such pronouncements, obviously, have created a great deal of paranoia in the West. Many of our folks are still concerned that there is a war on the west, as has been suggested in some of the earlier discussions back about 6 or 8 months ago. We in Idaho are deeply involved in the water allocation issue because of the listing of a number of salmon stocks and mollusks in the Snake River system. National Marine Fisheries Service has asserted that major quantities of water needed to be taken from the State of Idaho for preservation of these species.

In fact, each year for the last several years, between the National Marine Fisheries Service and the Corps of Engineers, they've taken well over 2 million acre feet of water out of Idaho and sent it downstream in various experiments, both spill, flow augmentation and other types of programs. Because of the demand for water and the uncertainties in the existing ESA, we're deeply concerned about the continued viability of our water resource.

In order to eliminate such uncertainty, we would suggest that in the new ESA that clear language be inserted to provide for an orderly process in the determination of recovery measures necessary, and that a definitive be procedure outlined in the Act describing or

prescribing the procedures required for acquisition of water, if found to be necessary.

A critical element of this, and this is an element that's been discussed earlier, is that the Federal Government be required to support their proposed actions with verifiable scientific information, subject to public and peer review. This, we believe, will help go a long way toward laying to rest some of the questions over whose scientist really knows what's going on and are they bought and paid for, as you discussed just a few minutes earlier.

A good example of this is, with regard to the salmon, the National Marine Fisheries Service retained a number of scientists several years ago under its so-called Bevin team to come up with a recovery plan. When that plan didn't fit exactly what they wanted, it was kind of set aside. Now the recovery measures that are proposed by National Marine Fisheries Service are being criticized by the Bevin team. So we don't know whose scientists to believe, whether they're accurate, whether they're not accurate. Getting this information out in the public for discussion is the only way we're going to be able to get to it.

With regard to the water allocation and State primacy, it is our belief that both substantive and procedural State law must be followed if water is found to be necessary for endangered species. To do otherwise will lead to nothing but litigation and conflict, and there won't be any clear winners. States ought to be involved in the development of reasonable and prudent alternatives in order to minimize socioeconomic impacts, and to smooth the process, to make it acceptable from the bottom to the top as well as from the top to the bottom.

The second issue, and I'll try to be brief, relates to section 7 consultation. While we've not had significant section 7 consultation in the State of Idaho on water resources at this point in time, it does loom on the horizon. NMFS has included 427,000 acre feet of water from the upper Snake River basin irrigation reservoirs as part of their 1995 through 1998 biological opinion.

The Bureau of Reclamation, to its credit, has filed a change in nature of use application with our State under the existing State law. Because of the conflicting science that I mentioned earlier, the water users of the State feel that these applications are in error, that the water will not be beneficial, and we have protested them, over 80 entities have protested those water rights.

The relationship of these applications to section 7 consultation is really not very well understand. But just within the last 2 weeks, representatives of the National Marine Fisheries Service have met with me and met with water users around the State, and suggested to us very clearly that if we did not cooperate with the Bureau of Reclamation in obtaining the 427,000 acre feet, that they would in fact require section 7 consultation on each and every dam and reservoir in the Upper Snake River basin, and that we would not be able to store irrigation water each spring so long as consultation was continuing, and that the target flows they've set in the State of Washington were not met. We don't feel that section 7 ought to be able to be used as blackmail to obtain natural resources for endangered species.

There are many other areas of the Endangered Species Act needing revision. You're giving it a very careful consideration, I'm really encouraged by this committee. Contrary to popular belief, western interests are not interested in plundering our resources. Ranching and farming are natural resource uses based on diversity. We recognize diversity probably as well as any sector of the economy and society in the Nation.

We're willing to work with Congress. We do not support repeal of the Act. We do support a revised Endangered Species Act. It can be a good law, it can be a flexible law, and we'll all be the better for it. Thank you.

Senator KEMPTHORNE. Mr. Chapman, thank you very much.

Now, Mr. Steve Quarles, who is with the Endangered Species Coordinating Council and the American Forest and Paper Association here in Washington, DC. Mr. Quarles, welcome.

STATEMENT OF STEVEN P. QUARLES, COUNSEL TO THE ENDANGERED SPECIES COORDINATING COUNCIL AND AMERICAN FOREST AND PAPER ASSOCIATION

Mr. QUARLES. Thank you, Senator.

I am appearing on behalf of the Coordinating Council which represents over 200 associations, companies and individuals and nine labor unions. Among the Council's members from your State, Mr. Chairman, I'm happy to say, are the Intermountain Forest Industry Association, the Idaho Mining Association, Idaho Wool Growers Association, and Idaho Cattle Association.

Recently, I had the privilege of serving as counsel for the private parties that brought the Sweet Home lawsuit. And it is with that case that I would like to begin my discussion of habitat conservation on private lands. Contrary to the widespread but erroneous perception, the plaintiffs in that lawsuit challenged neither the concept of the protection of habitat as a critical element in species conservation, nor the authority in the Endangered Species Act to provide habitat protection.

The lawsuit opposed a single regulation of Fish and Wildlife. In that rule, the agency defined the word harm in the section 9 take prohibition to grant itself a sweeping mandate to compel habitat protection on private lands. Unquestionably, the Endangered Species Act provides for the protection of habitat. But that protection arises from three other sections of the Act, not section 9—section 7(a)(1), section 7(a)(2), and section 5. Let me emphasize that two out of the three of those sections provide for protection of habitat on private lands, but with landowner protections missing in the section 9 take prohibition.

Despite the Supreme Court's ruling in Sweet Home upholding that Fish and Wildlife Service regulation, we believe Congress will not countenance this blatant elevation of a single word in a 30 page statute—a word added in the Senate as a technical amendment—to authorize and enforce Federal zoning of millions of acres of private land under threats of criminal and civil sanctions. We urge that the Act be amended to define harm to include the critical element of actual physical injury to a member of a listed species.

The Sweet Home lawsuit attacked the validity of a single regulation under the Endangered Species Act, not the statute itself. Yet

the Act does contain provisions that are truly inequitable for private landowners. The Act is so profoundly unfair to landowners because it shifts the burden of protecting listed species and their habitat away from the Federal agencies and onto private landowners.

I refer you to the chart on page 7 of my statement and a large blown-up version here in the hearing room. In order for landowners to obtain immunity from the section 9 "take" prohibition, they must meet standards that are far more stringent, submit to procedures that are far more complex and time-consuming, and assume costs that are far greater than those applicable to Federal agencies pursuing the very same immunity. This reverse of what should be the proper order of responsibilities for listed species—Federal agencies first and landowners second—may be inadvertent, but it is the reality of the Endangered Species Act.

This chart displays the differences. Those differences or inequities are so profound that Federal agencies have received immunity from section 9 in the neighborhood of hundreds of thousands of times each year with incidental take statements issued by the Fish and Wildlife Service, while landowners, even with the greater emphasis placed by Secretary Babbitt, have obtained immunity only 40 to 50 times in 13 years with incidental take permits.

The inequities are extraordinary. A private landowner must seek an incidental take permit if his activity will harm or harass a single member of the species, whereas an agency can obtain an incidental take statement if it merely shows that its activity will not likely jeopardize the continued existence of the entire species. A landowner may have to obtain an incidental take permit if he or she will modify any habitat. Whereas a Federal agency can obtain an incidental take statement if it can demonstrate that it will simply not modify critical habitat—habitat that is designated as critical by rulemaking.

There are differences in procedures as well as standards. For a Federal agency to obtain an incidental take statement, the procedures are secret, there's a 90-day statutory deadline, and the principal document is prepared by the Fish and Wildlife Service. For a landowner to obtain an incidental take permit, the process is public, there is no statutory deadline, and the principal document has to be prepared by the landowner.

The result is that the Federal agency is not subject to a hearing, can demand that the Fish and Wildlife Service provide an opinion within 90 to 160 days, does not have to incur any additional costs. Whereas, the landowner, not the Federal agency, must submit to a hearing, undergoes an application process with a duration of 1 to 5 years, and suffers costs as high as hundreds of thousands of dollars. These are extraordinary differences. Even before we can begin to talk about what the proper role of private landowners ought to be, we need to recognize that now private landowners are worse off than Federal agencies in both the standards and procedures to comply with the Act.

Two quick final points, Senator. Other attributes of the Act that we believe need a hard look are: first, the fact that this law seems to have avoided the due process revolution of the 1970's and 1980's. This Act is devoid of the kinds of due process provisions that are

in the Clean Air Act, Clean Water Act, RCRA, CERCLA. There are virtually no hearings, there are absolutely no administrative appeal rights, the Fish and Wildlife Service needn't comply with the National Environmental Policy Act and consider the alternatives and the impacts of its decisions. There is virtually no requirement of the agency to respond to public comment at all. We believe due process has to be provided.

Second, the Act simply does not have the kind of flexibility that other environmental laws have. You will not find, in the Endangered Species Act, the kinds of words that you find in the Clean Air Act and Clean Water Act, such as "insofar as practical," "to the extent possible," "best available technology," or "in the public interest." None of these terms.

When you couple the lack of flexibility normally provided by these terms, with the paucity of data, particularly on threatened and endangered species that Dr. Sweeney talked about, and a very young discipline, conservation biology, which must make untested assumptions and use inadequate data, you will simply not have a situation where scientists will risk their professional reputations to deliver the kinds of decisions which balance economic development concerns and environmental protection needs that we see in the other Acts.

We think that that flexibility has to be restored. We think that there has to be due process, and we need to streamline the procedures so that landowners have at least an equal opportunity with Federal agencies.

Thank you.

Senator KEMPTHORNE. Mr. Quarles, thank you very much.

We're going to have to recess, because we're down to 2 minutes, and that's a real stretch.

[Recess.]

Senator CHAFEE [assuming the chair]. Mr. Meyer, would you go ahead?

STATEMENT OF GEORGE E. MEYER, SECRETARY, WISCONSIN DEPARTMENT OF NATURAL RESOURCES

Mr. MEYER. Mr. Chairman and members of the subcommittee, first I'd like to talk about a voluntary landowner protection project for threatened and endangered plants, and second, our habitat conservation planning effort for the federally endangered Karner blue butterfly, which has been described at length in the book, Noah's Choice.

First, in terms of voluntary landowner protection projects for endangered and threatened plants, and I think there are things within this example that can be strengthened within the Act, and could set a more valuable assistance for future endangered species. We have six federally threatened plant species in Wisconsin, mostly on private lands. What we have been able to do, using the existing Act and existing funding received from the Federal Government under that Act, is hire a biologist to work with private landowners. That individual identified land potentially containing these plants based on past data, historical records and knowledge of species habitat requirements. No onsite inspections were required to do that.

The landowners then were personally contacted, first by either mail or phone. They were explained the program and why the rare species might be on their land. They were then asked permission to look on their land for the species, and we invited the private property owner to come along, and most did. At that time, we had a chance to talk with the landowner about their land and its plant and animal communities while looking for the threatened or endangered species. We were able to work with them to look at stewardship possibilities. It was an excellent one on one situation, and no threat to the landowner.

Beginning in 1991, we've been looking for these species on over 250 properties. We have in fact found it on approximately 100 properties, found various populations of endangered plants. We have reached agreement, memoranda of agreement with over 80 landowners in which landowners voluntarily agree to manage the land in a way that will conserve the species. They will notify us if there is an impending threat to the plants or if they intend to sell the property, which allows us to bring other management possibilities into the fore.

Most landowners have been thrilled to learn that their land possesses a rare species, and have been very cooperative. In fact, if you talk to realtors in the area, they often have been able to use that as a selling point, as land turns over, that in fact, a species is there, and people are very interested in being good stewards.

Senator CHAFEE. Are most of these lands rather modest in size, I mean, 200 acres or less, something like that?

Mr. MEYER. Yes. In fact, I would say probably smaller than that. These are basically, the majority are small property owners in central Wisconsin and northern Wisconsin.

Senator CHAFEE. By small, you'd say 50, 100 acres?

Mr. MEYER. Yes, 10 to 50, maybe 100 the largest. These are basically small property owners.

We have recently expanded this program to endangered animals.

Senator CHAFEE. Are these lands that timbering would take place on under some conditions?

Mr. MEYER. Yes. We have a lot of small forested tracts in the State, and we have various programs to assist landowners in timber production, often with tax incentives. But most of these lands would have been managed for timber, and not just recreational, although there is a blend of both.

Senator CHAFEE. Thank you.

Mr. MEYER. Another topic I'd like to talk about is the Karner blue butterfly and the habitat conservation plan and how they can be used and strengthened to help prevent train wrecks. As you know, this was a Federal endangered species listed in December 1992. It occupies habitats on sandy soils in the heart of our major forest products area. This is small, but also several major industrial forest areas. It also is an agricultural region, with cranberries, potatoes, and other vegetables.

This had the potential in Wisconsin to seriously affect private and public logging. We wanted the State to avoid the problems that the Northwest and other areas had had over various species. We were hopeful we could, because the Karner blue butterfly needs

periodic disturbance in its habitat to encourage growth of its food plants, mainly the wild blue lupin.

We set up a statewide cooperative habitat conservation plan with the strong support of the forest products industry. We developed wide ranging partnerships of the forest industry, county forests, environmental groups, utilities, private small woodland owners, agriculture and the Fish and Wildlife Service. Our goal, and I am sure it will be met, is to develop a statewide habitat conservation plan with our agency applying for the incidental take permit on behalf of all the partners involved.

This is a major undertaking, since over 6 million acres are involved. All are committed to making this successful and are working hard to mesh different perspectives. To show you the cooperation, one of our sister State agencies who was a significant property owner did not want to get involved. An industrial forester who chairs the Governor's Council on Forestry, after we were unsuccessful, called the Secretary of that agency and convinced him to join the program.

Our experience indicates that the habitat conservation process can be improved in the following areas. First, and it was referred to earlier here today, simplify the permitting process. Second, clarify standards for approving or denying habitat conservation plans before the process begins. Third, clarify potential takings——

Senator CHAFEE. Don't go too fast for me, here. I've got to catch up with where you are. With your recommendations on page 5, could you just go through those once again, please?

Mr. MEYER. Sure. Simplify the permitting process. One example would be just combining the environmental assessment or impact statement with the plan, put it in one document.

Senator CHAFEE. OK.

Mr. MEYER. Second, by clarifying the standards for approving or denying the plan before the process begins, so people know what to expect. Next, clarify potential takings activity at the time of listing, so affected parties can comment and know how listing will affect them. Next, Congress should appropriate funding for habitat conservation plans. These can be costly, and they need to be undertaken, because if they're not, then there are delays we hear about, that were discussed earlier. The impact on the private sector will become worse, and we can avoid those by doing some up-front funding.

Last, the Congress should encourage multiple species plans and planning over entire landscapes, not just species by species approach. In closing, revisions to the Endangered Species Act must emphasize improved Federal-State-private landowner partnerships. We need incentives for property owners and flexibility to accommodate biological variability. States are generally closer to private landowners, and States need more empowerment from Congress under the Endangered Species Act, but with Fish and Wildlife Service oversight.

Please keep science as a backbone of the Endangered Species Act for decisions on listing and delisting. Congress should use this opportunity to break the cycle of reactive species by species listing and management, and move the Nation into a proactive mode. We should begin to work with declining species before they need to be

listed. We can avoid train wrecks, as practitioners of both the State and Federal Endangered Species Act, by increased tools such as incentives and broader habitat management.

We can prevent the train wrecks. If you've got enough track ahead of you, you can come to a stop and avoid those problems. We can do this by emphasizing prelisting activity, such as surveys and management for species before they become candidates for listing.

This will result in increased cost efficiencies, increased effectiveness in protecting and recovering species and reduce conflict between public and private sectors. As a State, we're working hard and have been successful to make the existing law work. We have had many situations dealing with both State and Federal species where we have not had the ultimate kind of crisis. But we could be far more effective with the types of recommendations I have offered. With more arrows in our quiver, I'm sure we can avoid these types of problems.

Thank you, and I offer the continued services of my agency in working with you on this vitally important aspect of our Nation's conservation.

Senator CHAFEE. Well, Mr. Meyer, that's very, very interesting testimony. We appreciate it. I must say, your man Mr. Kopitski, sounds—you ought to clone him.

Mr. MEYER. Just as an example, Mr. Chairman, besides being a biologist he is also an artist, every landowner that enrolls in the program gets a picture that he has painted of the various species on his land. It's a rare talent. I wish we had 1,000 more like him.

Senator CHAFEE. I wish we all did, too. Thank you very much.

Now, Mr. Lloyd, executive committee member of the Black Bear Conservation Committee, Shreveport, LA. We were just discussing the black bear earlier. Won't you proceed, please.

STATEMENT OF MURRAY LLOYD, EXECUTIVE COMMITTEE MEMBER, BLACK BEAR CONSERVATION COMMITTEE

Mr. LLOYD. Thank you, Chairman Chafee.

I have seen a black bear. Thank you for this opportunity.

I'm speaking today on behalf of the Black Bear Conservation Committee, a coalition of landowners, State and Federal agencies, private conservation groups, forest industries, agricultural interests, and the academic community, that have been working together for the past 5 years to protect and restore the Louisiana Black Bear and its habitat in Texas, Louisiana, and Mississippi.

When the Louisiana black bear, which is the original teddy bear, was proposed for listing as threatened on the Federal Endangered Species Act in June 1990, I was chairman of the Louisiana Forestry Association's Wildlife and Recreation Committee, while at the same time serving as conservation chairman of the Louisiana chapter of the Sierra Club. I noticed that national groups, from the timber industry and the environmental community, began to focus their intention on the bear, and seemed intent on importing the conflict in the Pacific Northwest into our region.

We chose instead the former group, with representation from all stakeholders, who agreed to leave their organizational biases at the door and work together to identify the most expansive common ground that was least intrusive on private landowners.

The primary threat to the bear was habitat loss and fragmentation. This was something that none disputed. Hardwood bottom lands and the bear's historic range, which includes the Mississippi River alluvial plain, had been reduced from 24 million acres in 1883 to only 5 million acres in 1989, an 80 percent reduction in habitat. We discovered that the primary cause of this habitat loss was not as many had assumed, timber harvesting practices, but rather Government programs that encouraged the wholesale conversion of the area to soybean fields.

Additionally, we found that 90 percent of the remaining bears in the south are on private land, which makes sense, because 90 percent of the land is in private ownership. This fact told us two things. No. 1, that private landowners were not the problem, and No. 2, that we were not going to be successful in restoring the bear and its habitat without the full cooperation of these landowners.

The U.S. Fish and Wildlife Service realized and acknowledged that timber harvesting, so long as it is done on a sustainable basis, is not a threat to the bear. Contemporaneously with the listing of the bears threatened, the Service issued a special rule exempting normal forest management activities from the take provisions of section 9 of the Act. Utilizing the inherent flexibility of the Act, this 4(d) rule functions essentially as a regional HCP and incidental take permit.

An important part of the rule is a caveat that is in the last paragraph, which states that the rule is subject to modification or withdrawal if the Service determines that this provision fails to further the conservation of the Louisiana Black Bear. This served effectively as a cocked two by four to keep everybody at the table, but also sent a clear signal about the Service's commitment to work with the committee.

Our goal in habitat restoration has not been preservation. But by encouraging reconversion, we have promoted turning land that has been a headache to the farmer and a continuing expense to taxpayers into income producing forest land which has the added benefit of purifying our water, reducing siltation in our streams and enhancing wildlife.

The BBCC's successes have been many. A few have been that we have funded and coordinated over $900,000 of research projects in the region. We have provided information and education to the general public, landowners and management professionals on the bear. We have published the black bear habitat management guidelines. We have developed a comprehensive restoration plan.

We have leveraged incentives by coordinating with existing programs, such as the wetlands reserve program. We have also instituted an anti-poaching campaign that's been funded by Defenders of Wildlife, accepted by Operation Game Thief, with an education program being funded by Safari Club, International.

The reasons for our success have also been many. We were lucky enough to have the Endangered Species Act. It alerted us to the situation early enough for us to still have alternatives and management flexibility in addressing this problem. It also served as an encouragement for some to come to the table. We used a regional approach that was based on science, rather than emotions, being driven by national agendas.

As a measure of our success, I had a conversation with a sugar cane farmer in South Louisiana who was complaining because the bear had been on the endangered species list for 2 years and he didn't know about it. I think that's a clear indication of how we have been able to limit the impact on private land ownership. We have also had several requests from landowners to bring bears and reintroduce them to their property.

I think it is worth noting that we began the Black Bear Conservation Committee with a Republican Administration and a Democratic Congress. We now have a Democratic Administration and a Republican Congress. To the bears and to us, this has not made one bit of difference. The Black Bear Conservation Committee is a model for natural resource conflict resolution. We will continue to strive in this effort because we know that we have to succeed, and because as much as this is about people working together for the bear, it is mostly about people working together.

Thank you.

Senator KEMPTHORNE [resuming the chair]. All right, Mr. Lloyd, thank you very much.

Let's begin a round of questions if we may. Senator Chafee, would you like to lead off?

Senator CHAFEE. Thank you very much, Mr. Chairman.

Mr. Meyer, one of the points you made was to identify, spot these species in advance. You say if there's plenty of track down there, you can avoid a train wreck. But if I recall it right, in the earlier panel we had some witnesses that said that we shouldn't treat threatened ones like endangered. So isn't this in conflict with what you're suggesting?

Mr. MEYER. I don't believe it is in conflict. Obviously, I don't think you need the same degree of legal restrictions on endangered as threatened. But I think what I'm advocating is to look ahead to where those are, and get into incentive approaches, initially, and also the State agencies or Federal agencies doing broader habitat management over a wider area, and working with private property owners earlier.

In fact you won't have to get into the situation where, and I think you do need a legal framework and regulations to protect both threatened and endangered species, but by getting involved earlier and getting their proactive on the land management, also with the incentives that have been discussed, we can avoid that and turn those around before they become endangered. Also, before they become threatened. I think a broad ecosystem management approach on habitat is the way to avoid a lot of these problems.

Senator CHAFEE. Well, you know, I was very interested in what you said about the Karner blue butterfly, because it's easy to make mock of some programs designed to save a butterfly. What are we fiddling around with that for. But the fact that you're doing it in Wisconsin and so many folks are deeply interested, I think private landowners do care, wood landowners do care about the endangered species and I think your recommendations on what we can do for this Act, make it more specific, more understandable, are all good ones.

Mr. Lloyd, does the fact that the Louisiana black bear is threatened and not endangered give you more flexibility, as you know the situation?

Mr. LLOYD. Well, sir, I think it gives us——

Senator CHAFEE. So far, as I understand it, it's not on the endangered list.

Mr. LLOYD. It is listed as threatened on the endangered species list. I believe we would have the same amount of flexibility if it was listed as endangered. Obviously we would have less alternatives if we waited so long that it would be. I would like to see the flexibility, such as the 4(d) rule, extended to endangered as well as threatened.

Mr. QUARLES. Mr. Chairman?

Senator CHAFEE. Yes, Mr. Quarles.

Mr. QUARLES. Two things. One is that we are concerned right now that there is no difference between threatened and endangered species, because, although section 9 applies the "take" prohibition to endangered species, section 4(d) allows the Fish and Wildlife Service to promulgate regulations applying those prohibitions to threatened species. What the Fish and Wildlife Service has done is promulgate a single regulation under section 4(d) that applies all of the prohibitions on endangered species to all threatened species heretofore or hereafter listed, thereby basically destroying the distinction between endangered and threatened species.

I think this regulation is important in considering prelisting of species. We certainly support the notion of providing protection for species before they are listed, but with one very large caveat. That caveat is, we do not expect that that protection would be as heavy-handed for species before they are listed as afterwards. Our great concern is that if you provide in the Endangered Species Act for protection of species before they are listed, all you do will be to spread the heaviest hand applicable to endangered species all the way out to species even prior to their listing. That's why we support two points in Secretary Babbitt's program. First, is to restore the distinction between endangered and threatened species, which Secretary Babbitt called for. Second, we support the notion of incidental take permits covering species that are not yet listed.

In the case of the permits, we still have the opportunity not to sign. We have the voluntary ability to say "no, that permit goes too far" on prelisted species. We remain concerned about having automatic regulation spread to prelisted species. But with that large caveat, we support——

Senator CHAFEE. So not only would you not have the prelisting requirements there, but you would have a distinction between the threatened and endangered?

Mr. QUARLES. Exactly. We support Secretary Babbitt in his request for that.

Senator CHAFEE. Mr. Lloyd, one last question. In your testimony, you said our goal in habitat restoration has not been preservation by encouraging reconversion, we promoted turning land that has been a headache to the farmer and a continuing expense to taxpayers into income producing forest land, which has the added benefit of so forth and so on. That's pretty tough, isn't it? How do you

go about—it's a big task, isn't it, to encourage, to get farmers to change what they're doing?

Mr. LLOYD. No, sir. Actually, one of the programs that we've been most effective in is the wetlands reserve program. It's one of the most popular programs we have in the State of Louisiana. For 1995, we lead the country in the number of acres that have been put up for intention to be included in the wetlands reserve program, which creates a permanent easement on the land, it gives the landowner a lump sum payment, reduces his tax burden from an ad valorem and also estate tax purposes, which is very important to us. Because the average age of private landowners in the south in Louisiana is over 65 years of age.

We have been able to include in the ranking point system for the wetlands reserve program that if the land that is put in is an occupied bear habitat, they get an additional 300 points out of an average of about 1,500 points for priority listing. With 60,000 acres signed up and only 6,000 acres worth of funding available, a 20 percent increase in ranking is a very good incentive for landowners.

Senator CHAFEE. Thank you very much.

Thank you, Mr. Chairman, and as I mentioned earlier, regrettably I have to attend another meeting and am going to miss that last panel. But I certainly want to say that I will review the testimony. I want to congratulate you again, Mr. Chairman, for the panels you've assembled. These are really good panels and thoughtful and constructive. They haven't come in here to blow the Endangered Species Act apart. They've been here in a constructive fashion and I'm confident we can come out of this with a good Act.

Senator KEMPTHORNE. Thank you, Senator Chafee, I appreciate that very much.

Let me begin some questions, and since I'm the only one offering questions, I guess I don't need to run the stopwatch.

[Laughter.]

Senator KEMPTHORNE. Let me begin with Mr. White. Mike, you represent a mining company. I will note that it is a well-respected mining company. How would you characterize your thoughts on changes to the Endangered Species Act? Do you want to see us repeal or gut the Endangered Species Act?

Mr. WHITE. It's surely not the interest of the company that I work for or is it my testimony to suggest that Congress ought to repeal the Endangered Species Act. Even though I have suggested in my testimony and in the written materials a number of reforms in a number of areas, we do support the purposes of the Endangered Species Act, and think that it is the process concerning how you get there that should be looked at by this committee and by Congress. You can meet the goals, but still consider the number of economic issues that impact businesses like the company I work for and private property interests.

So I would really characterize my testimony and our interest as reforming the processes of the Endangered Species Act.

Senator KEMPTHORNE. I appreciate that. How would you characterize the interaction between Federal agencies under the Act? How would you describe agency action with State and private interests?

Mr. WHITE. My experience is somewhat limited. My experience relates to the Pacific Rivers case and the consultation processes that we have gone through with endangered salmon in Idaho. But my experience tells me that it is somewhat frustrating to have to deal with the Forest Service in one case as lead agency, and the National Marine Fisheries Service on the other side. Their positions are not always consistent. They seem not to have a great deal of level of communications on positions with regard to consultation.

Although I'm not that familiar with the interface between the State agencies, I believe that that communications level could stand improvement in terms of how you get State issues involved and private sector issues involved in the decisions of those agencies. So I would like to see improvement in those areas, particularly private sector input, into some of the decisions that's not now permitted.

Senator KEMPTHORNE. All right. Mr. Lloyd.

Mr. LLOYD. If I could address that. As you noticed, we have all of the Federal resource agencies for a three-State area, all of the State agencies that meet with us and have been, we meet four times a year, we've dropped to two. We're such a large area, we have five separate Corps of Engineer districts in our region that we have to coordinate. I'm convinced that the four times that they meet with us is the only time they get together to coordinate their activities with themselves and with the other State and Federal agencies.

I think it's a very effective exercise. I would like to see that sort of thing go on quite a bit. It's also by getting them together and getting them to at least know someone personally in each of the agencies, we've broken down a lot of the turf battling and infighting that would have happened otherwise.

Senator KEMPTHORNE. How do you feel about being the catalyst for those Federal agencies to meet every so often?

Mr. LLOYD. I'm sorry?

Senator KEMPTHORNE. How do you feel about being the catalyst?

Mr. LLOYD. That's fine with me, as long as they do it. I would love for this type of activity to be something that we could put forward on most of these issues. It's happening more and more, the effort that we started, the model we used, is being duplicated around, and it's been effective on most areas that it's been used.

Senator KEMPTHORNE. OK, thank you.

Mr. White, let me just ask you this. Can you compare for me the effects of the Endangered Species Act on private versus public lands? Have you had experience with the public lands side?

Mr. WHITE. Experiences in, for instance, the mining operations that I mentioned, our holdings are approximately 50 percent private, in that there are patented claims that are owned by our company. The other portion are unpatented claims, meaning, owned by the Federal Government for which we have an operating permit. I see, at least to the extent that you have Federal involvement in those operations, there is little or no difference from the impacts of ESA on the private portion of those properties as opposed to the public portion of those properties.

Senator KEMPTHORNE. Mr. Quarles.

Mr. QUARLES. I might also answer that. I think it goes back to the chart I displayed. We have found again circumstances of inequity to private landowners in a number of inter-mixed Federal lands and private lands where you have circles around red-cockaded woodpecker or northern spotted owl nests, that often in those circles, there's a requirement that you can cut up to only a certain percentage of trees.

We've found that the Forest Service, because of the statutory deadlines for Federal agencies and the easier procedures, can get its cut-out faster under the consultation procedures with an incidental take statement than can the landowner under the incidental permit procedure. So what happens in many of these cases is that the Federal agency in fact provides all the remaining timber allowable in those circles, and the private landowner is left only growing, not harvesting, trees. That's an on-the-ground example of the differences in those procedures.

Senator KEMPTHORNE. Mr. Lloyd, do you agree with that?

Mr. LLOYD. Yes, sir. Again, that's one of the things that we've been able to short-circuit by having everyone working together. We've been able to get HCPs out, I guess I shouldn't tell anybody, we did one in 3 days.

Mr. MEYER. Mr. Chairman, I've heard the testimony of Mr. Quarles and Mr. Lloyd. As you can tell, we've had a high involvement with both private landowners and Federal Government. I think there is some value in trying to make things much more equitable in terms of process. I think we have to be careful when we do that not to make it very difficult to in fact protect the species itself. Some kind of balance has to be done that's fair and is not going to lose sight of the reason for the Act.

Senator KEMPTHORNE. All right. Mr. Chapman, let me ask you a couple questions if I may. Did I understand you correctly, do you feel that the National Marine Fisheries Service is threatening Idaho water users?

Mr. CHAPMAN. Well, I think very clearly they are. The meeting that I attended, there were four of us in the room, and a high ranking official of the National Marine Fisheries Service had asked for the meeting in Boise. We discussed the Bureau of Reclamation transfer applications that had been filed. The opening statement by the NMFS representative was, how can the water users help us and help the Bureau of Reclamation obtain this 427,000 acre feet.

When I explained first of all, we were one of the protestants, so it was a difficult position, but talked about our concerns, about 15 minutes into the conversation, I was told very clearly that if the Bureau was not able to obtain the 427,000 acre feet then NMFS had no choice but to open consultation on all of the Upper Snake River projects, and they would not allow water to be stored during the spring freshet if the target flows they had established in the State of Washington were not met. This in spite of the fact that that's not critical habitat, they have never had consultation on those projects before, is something brand new.

Senator KEMPTHORNE. So what's the effect if the State of Idaho is unable to store spring water in its reservoirs?

Mr. CHAPMAN. If we have a low water year, which we've experienced 8 out of the last 9 years, that would jeopardize the water

supply for roughly a million and a half acres of irrigated land in southern Idaho that gets water from reclamation projects. The net result is, farmers would not know how low of a water supply that would have. Lending institutions would not know whether to continue operating loans or long-term financing. It affects the entire economy.

Senator KEMPTHORNE. I can see, certainly, how that would impact, as you say, the whole economy, certainly the agricultural base of a State like Idaho. But you've also mentioned that the members of the Idaho Water Users Association includes those who manage and operate water distribution systems for municipal purposes. What are the effects that, for example, the salmon water drawdowns could have on city and small water supply distribution?

Mr. CHAPMAN. In Idaho, well over 90 percent, in fact almost 99 percent, of our municipal water supplies are drawn from the groundwater system. A large number of those, in fact, most of them, obtain water from the Snake Plain Aquifer, which is one of the largest groundwater aquifers in the Nation. One of the programs that had been developed in recent years was to conduct artificial recharge on the Snake River Plain because of declining water levels due to drought, development and other factors.

The salmon water that is being demanded by the National Marine Fisheries Service is water that would have been used for artificial recharge. In fact, we have not been able to recharge this past year, except for limited flood flows, because of the demand for salmon water.

So what's happening is that cities are being required to deepen their wells, to drill new wells, water levels are dropping, costs are increasing. So it limits the availability of water for municipalities and for development within those municipalities.

Senator KEMPTHORNE. Sherl, these demands for these increased flows that we've talked about are being made based on a recovery plan that has been challenged even by NMFS own biological team. So with that as a reality, why are Idaho water lawyers and irrigation districts even considering complying with what some argue is a biologically faulty opinion?

Mr. CHAPMAN. It's one of those things where you have to try to weigh your options and see what you can essentially come away with. Looking at the 427,000 acre feet, if there is some possibility for finality, for closure on this issue, escaping the lengthy and costly litigation that some of us have looked at and projected to be between perhaps three quarters of a million and a million dollars cost to Idaho water users, we're trying to assess what our options are, and just try to get on with our lives. It's a very difficult proposition. It's referred to in our State as an issue like a piece of antelope jerky, the longer you chew on it, the tougher it gets and the bigger it gets. You just can't get away from it. So we're trying to get some closure, and without a great deal of cost.

Senator KEMPTHORNE. Is it fair to say that predictability and stability is very difficult to determine?

Mr. CHAPMAN. That's very true, but that's the bottom line. That's what we're trying to get to.

Senator KEMPTHORNE. All right, thank you very much.

Mr. Quarles, last night I spent some time going over your chart. I found it a pretty dramatic demonstration of comparison of the process. You suggest that the Endangered Species Act ought to be amended to streamline the incidental take permit process in section 10, and to modify section 7 consultation. Would you just give me your insight on that, and what specifically you're suggesting?

Mr. QUARLES. Well, as to section 10, Senator, I think first there are procedures that can be undertaken before a landowner feels compelled to prepare a conservation plan for an incidental take permit. One of them is—which would almost immediately rectify the inequities there—is to provide to the landowner the same consultation procedure that Federal agencies now have on a voluntary basis, so the landowner could have the benefit of the 90-day deadline, preparation of the document by the Fish and Wildlife Service, and the standards which are now applicable to Federal agencies. I think that's one mechanism.

Certainly a general permit for low impacting landowner activities, similar to the general permits authorized by the Clean Water Act. Perhaps a third one is, if we get better recovery plans, to take the position that if a landowner's activity is consistent with the recovery plan, then he or she is therefore immune from incidental take prosecution without having to undergo the rigors of the incidental take permitting process.

For the permit itself, we certainly support the Administration's multispecies and no surprises initiatives. We would also suggest that there ought to be interim permits for the complicated permits, such as was done in Riverside County, CA, for the kangaroo rat, and in Clark County, NV, for the desert tortoise. We would suggest deadlines, just as there are in consultation for Fish and Wildlife Service review. Also, perhaps the incidental take permitting should be excused from NEPA compliance and from the consultation requirement. The Fish and Wildlife Service shouldn't consult with itself on whether to issue a permit. So that's section 10.

For section 7, we again believe that a Federal agency shouldn't have to undergo the consultation process if we improve the recovery planning process and the agency action is consistent with the recovery plan. So again, we'd have one-stop decisionmaking. We ought to make certain that the statutory standard for consultation—likely to jeopardize the continued existence of the species—is in fact the standard that's applied in the field. We find that field biologists too often apply a take standard instead of a jeopardy standard. We'd like to eliminate unnecessary consultation, certainly with Federal land management agencies that have their own biologists, so that you wouldn't have to consult if it may affect, even beneficially affect, but only if there is significant adverse effect. We'd like to take care of the Pacific Rivers Council situation, which has been talked about. We'd like to make the statutory consultation deadlines stick.

There are NMFS consultations that have gone on for 4 years, when the deadline is 90 days. We would respectfully suggest that the consultation process should be centered in the Fish and Wildlife Service, and NFMS might be relieved of that responsibility.

Those, I think, are some of the principal ways we would change it.

Senator KEMPTHORNE. OK. With regard to critical habitat designation process, should that be retained as it is now, or changed, or eliminated?

Mr. QUARLES. We think it should be retained. But we suggest that it occur at the time of recovery planning. That's another element that we share with the administration. We also think that the economic and social, the weighing of economic and social consequences which the Act requires, that process ought to be improved.

Senator KEMPTHORNE. All right. Also, you're on record as opposing a Fish and Wildlife Service regulation that applies all of the prohibitions of the ESA for endangered species to threatened species. Why are you opposed to this regulation?

Mr. QUARLES. I'm opposed to it—and I answered this partially in my answer to Senator Chafee, because the Act clearly provides for a distinction between endangered and threatened species. The Act applies all the prohibitions to endangered species in section 9, but in 4(d) provides that a rule may apply these prohibitions to threatened species. It is my firm belief, but the courts have said otherwise, that the Act was intended to say that when you list a threatened species, you make an individual determination as to what prohibitions should be applied to it. In what I regard as one of the great examples of bureaucratic lassitude I've even seen, the Fish and Wildlife Service promulgated a rule that said, we'll apply all of the prohibitions against endangered species to all threatened species heretofore or hereafter listed, thereby destroying the distinction.

I think that destruction of that distinction is important not only within the confines of the Act, but it's the very thing that gives landowners pause when talking about providing protections for unlisted species. Because they are afraid the distinctions will be destroyed again, and not only will endangered, not only will threatened, but also unlisted species will all be regulated at the endangered species level, which is obviously the most stringent.

Senator KEMPTHORNE. All right, thank you very much.

Mr. Meyer, a few questions for you. I found it interesting, your whole testimony on the Karner blue butterfly and having read Noah's Choice, that's one of the species certainly highlighted and discussed. Could individuals help recover the species by growing lupine on their private lands, and are their any barriers or disincentives that would prevent an individual from acting on this simple solution?

Mr. MEYER. There are not disincentives, at least we haven't been able find any so far in developing our habitat conservation plan. By working with them and making available the knowledge of how to manage, in fact, many property owners, once they know they have this species, are interested in undertaking the various activities, including fire and others, to in fact increase the habitat.

That in fact I think is the kind of solution we need, that kind of cooperative educational process. There has to be a framework of regulation there, ultimately, if you need to, to protect a species. But we have found that to be very successful in terms of habitat.

Senator KEMPTHORNE. I'm sorry, I missed your testimony that you presented, so if I ask you a question that you've covered, you

can say it's been covered, or if you get a question you don't like, just say it's been covered.

[Laughter.]

Senator KEMPTHORNE. What's the benefit to the State of Wisconsin to signing up as the lead on the recovery of the Karner blue?

Mr. MEYER. We see our responsibility as being a facilitator under the Act. The timber products industry, the agriculture industry in the State of Wisconsin are very important industries. We didn't want to have a train wreck. So we have put a lot of State dollars, in addition to the Federal dollars we've been able to receive, up front to avoid problems.

So it was to protect the species, but also to facilitate business and work with our businesses to make their life easier. As I mentioned earlier, they have become very strong supporters of this plan.

Senator KEMPTHORNE. So you have major landowners that have signed up for this?

Mr. MEYER. Georgia Pacific, Consolidated Paper, many large industrial forests. I mentioned an example, a recalcitrant State agency that didn't want to get involved. I was having difficulty getting involved. A private, the industrial forester who was head of the Governor's Council on Forest Productivity, called the secretary of that agency and got them involved. That's the kind of cooperation we have.

Senator KEMPTHORNE. But what's the incentive for these major businesses to sign up?

Mr. MEYER. Two. First, they know the Act exists, and the regulatory framework. So I think you need that kind of backbone, ultimately. But second, it's an opportunity. They're good corporate citizens. They want to take on an opportunity to make, as I say, lemonade out of lemons. And it's turning out pretty well.

Senator KEMPTHORNE. If we had a panel of some of your major landowners that are part of this partnership, would they be here as advocates, or what would their attitude be?

Mr. MEYER. In fact, I had another meeting with those same individuals about a month ago, and they started out by saying how good the process was working. They'd be advocates in terms of the kinds of plans and cooperation and incentives and involvement. They might have concerns about the Act, but they know that there's a responsibility, and they're willing to work with us to do it in a very cooperative way, I think.

Senator KEMPTHORNE. What have been the major barriers or disincentives to forming this sort of partnership?

Mr. MEYER. Initially, we've had a very good working relationship with Region III of the Fish and Wildlife Service. Initially, this was their first major HCP. There was a lot of startup problems, and what's being done in other places. That educational process within the agency had to be overcome. You folks have already solved one of our problems, which was FACA, the Federal Advisory Committee Act, and made that workable, so the State could become more involved as a full partner, in fact taking a leadership role. So you've already solved one of those problems.

Senator KEMPTHORNE. All right, thank you.

Mr. Lloyd, in your written testimony, let me read one paragraph here, you said, we discovered that the primary cause of this habitat loss was not as many assumed, timber harvesting practices, but rather Government programs that encouraged the wholesale conversion of the area to soybean fields. Would you just expand on what that's about?

Mr. LLOYD. Well, because 80 percent of the hardwood bottom lands had been cut down, all of those chain saw crazy, forest industry folks were categorized, pointed out as the enemy. What we found was, it was not the forest industry, it was the agricultural programs which have since been changed that had caused most of the destruction.

We also found that clear cutting is actually beneficial for the bear in some instances, because that's where the berries grow. In fact, on Kennesaw River National Wildlife Refuge, there are some areas that are maintained in early succession habitat, or clear cutting, for that very reason. This is again, one example of rather than trying to stake out sides and start off by fighting each other, we tried to find as much common ground, and we found that there was a lot more out there than we had anticipated.

Senator KEMPTHORNE. All right. Now, Mr. Smith from our first panel had talked about disincentives. In your experience, have you found disincentives, and could you identify those for us?

Mr. LLOYD. That question's already been asked.

[Laughter.]

Mr. LLOYD. Yes, sir, there are. There are a number of instances, particularly in Louisiana, where there are Federal programs which actually encourage landowners to destroy the very resources that we're trying to protect in other programs. Federal flood insurance programs that subsidize Federal flood insurance at 40 percent market rate encourage the destruction of the very areas that we're trying to pay people to restore under the wetlands reserve program. Federal Government subsidizing low income housing projects in wetlands areas.

Those types of programs create disincentives. We have been able to work with a number of the projects, programs, to make them incentives.

Senator KEMPTHORNE. How does your draft recovery plan compare to the recovery plan of the Fish and Wildlife Service?

Mr. LLOYD. Well, when we first started, Fish and Wildlife Service because of staff limitations and other reasons, informed them that it would take them 3 to 4 years to begin work on the recovery plan. We decided to do a preemptive strike, because we needed a plan for habitat management, and developed a restoration plan which is actually more comprehensive than a recovery plan can be, because we're private sector and we can do things that the Federal Government can't do.

Since that time, the Fish and Wildlife Service has essentially lifted their recovery plan from our plan.

Senator KEMPTHORNE. All right. Well, gentlemen, thank you very much. Is there anything—Mr. Quarles, yes.

Mr. QUARLES. One more comment, and I don't want to be the grinch that stole Christmas. But I think it's important to note that these plans that we've seen—in which the American Forest and

Paper Association's members have participated actively and support tremendously—are not necessarily representative of the problems of endangered and threatened species management. That is because they deal with species that are particularly susceptible to active management. They are species that are mobile, that cover large land areas. In the case of the red-cockaded woodpecker, species that can be transplanted, species where habitat conditions can be manufactured through cavity restrictors and cavity, artificial cavities. In the case of the Karner blue butterfly and the black bear, where timber management can actually assist the species because of their need for open space.

There are species that are not mobile, not transplantable, that are not really susceptible to this kind of active management. I think we need to be aware of the fact that those species create as many or more problems, in fact, intractable problems, under the Act, as those that have been amenable to these kinds of management regimes.

Mr. LLOYD. I would like to respectfully disagree with that. Because the same process that we've been using for the black bear, which we admit is a charismatic megafauna, and it's fairly easy to get people to work toward saving the teddy bear, are being used on other species that are not as exotic or basically, it gets down to whether or not you want to make the Endangered Species Act work or whether you want to try to make it not work. The same group of folks who have been fighting over one aquatic species in the south have not sat down together and decided that they're going to work together on a basin-wide recovery plan for several of the species that are dependent underneath it.

I left out my other Leopold quotes, because I thought you'd used them all, George. But Aldo Leopold said, there are two things that interest me. One is the relationship of people to each other, and the other is the relationship of people to the land. That's what we're talking about. If you can bring the community together to do what is required to protect the endangered species and the habitats that we need in this country, then you will have a successful Endangered Species Act.

Mr. MEYER. One second in regard to the mobility issue. One of the species we've dealt with a lot in the State are mussels and clams. They are not very mobile. The same types of processes have worked very well. It's bringing people together to solve those problems.

Senator KEMPTHORNE. All right. I appreciate that. In regard to your last statement about Leopold, many Idahoans would agree with that. They believe they are good stewards of the land. But right now there's conflict with their Federal Government in how do you truly help endangered species. That's what we're going to try to figure out, because right now, the Act's not working as it's supposed to.

Mr. LLOYD. Well, lucky for Idaho——

Senator KEMPTHORNE. Mr. Lloyd, I have to cut you off there, because I want to go to the third panel. Because it, too, will be very interesting. But let me invite you, further comments, please, make them available to me. Because it will be very helpful as we complete this deliberation. Thank you all.

All right, let me introduce the members of this panel, and again, I look forward very much to your testimony and your insight.

Let me begin with Mr. Brian Loew, who is the executive director of the Riverside County Habitat Conservation Agency in Riverside County. Mr. Loew, welcome.

STATEMENT OF BRIAN LOEW, EXECUTIVE DIRECTOR, RIVERSIDE COUNTY HABITAT CONSERVATION AGENCY

Mr. LOEW. Thank you, Mr. Chairman, I appreciate the opportunity to be here today and address this subject.

I serve as the executive director of the Riverside County Habitat Conservation Agency. This is a public entity that was formed in 1990 by nine local governments in western Riverside County, the County of Riverside and seven cities. It was put together for the specific purpose of planning for, acquiring and managing ecosystems for endangered, threatened and sensitive species. I believe it's the only public agency of its type in existence in the United States, to the best of my knowledge, in any event.

We have through the past 5 years, since our inception, acquired what I believe is probably the greatest level of actual in-depth implementation type of experience in working with the Act of any public agency that I'm aware of on the local level. We are administering right now two approved habitat conservation plans, and when I say approved, since we have a State endangered species act in California, approvals have to come not only from the Fish and Wildlife Service but also from the California Department of Fish and Game.

We actually, I am the guy that is riding herd over the Stephens kangaroo rat habitat conservation plan, and I know that previous committees have discussed this, and it's often been held up as a particular egregious example of some peoples' perception of problems. I don't quite see it that way.

So we do administer that plan. It's 565,000 acres. It's a regionally sized plan. But in addition, we are also administering some other plans, which fortunately are less controversial. We have an approved multispecies plan, it's a habitat base that covers 31 species that we do in cooperation with the Metropolitan Water District of southern California. We're just about to receive approval for a third habitat conservation plan that covers 65 species, both listed and unlisted, also in conjunction with the Metropolitan Water District.

As a result of all this experience that we've had, it has come at a price, and I would say that Riverside has spent more local money than any county in the United States on habitat conservation. In the last 5 years in our local congressional district, we've spent $123 million of local money on implementation and development of habitat conservation plans. The interesting thing about this is that that sum has not been matched with a single dollar of Federal money. So what you're looking at is strictly local investment for what in essence boils down to implementation of a Federal law. As you can imagine, that's not a particularly happy scenario.

But all this does give us somewhat of a unique perspective on habitat conservation planning. I come to you more as a practitioner than I do as someone that's interested in engaging in polemics. My

job basically is to implement the Act on the ground. I've been doing that for the last 5 years.

I've been asked today to address three issues by your subcommittee. The first is the role and the adequacy of current funding mechanisms in achieving goals of the Endangered Species Act. Second is the methods by which those goals can be more equitably and cost effectively achieved through the use of Federal funding and other means. Last, I've been asked to share some thoughts on the relative roles of Federal, State and local governments in the efforts to prevent species from becoming endangered and threatened.

So starting off with the first one, role and adequacy of current funding mechanisms, well, when you read through the Act, you don't really see enunciation of goals for the Act. But one could easily determine from the fundings of Congress that the goal of the Act in essence is to conserve species and to prevent them from getting to the point where they need to be listed as threatened and endangered.

But if the goal is really to conserve those ecosystems upon which those species depend, from our local perspective we would have to say that current funding mechanisms absolutely are not working. Why is that? Well, one is an objective measurement. Obviously, we have more species being added to the endangered and threatened list every day, and that in itself is by definition an indication that the Act's goals are not being met. If they were being met, we would have a slowdown, at the very least, in this.

Second of all, in terms of current funding mechanisms, since we've received no local money, no Federal funding for this, obviously from our perspective, current funding mechanisms are not adequate. We have attempted in the past to secure funding from Land and Water Conservation Fund. We've been unsuccessful at that, despite a paper fund balance in the billions, there's really very little appropriated for that.

Frankly, it's hard to find and point to any other existing Federal funding mechanisms that provide funds in this area. Section 5 allows it under the Act, but it's never been used in our area by the Federal Government or the Secretary to acquire habitat. We also had a proposal from the Secretary to do some funding through States under section 6. That did not survive the House. If a similar fate awaits in the Senate, that will not be available, also.

So clearly the problem to me is that although there may be some existing funding mechanisms, they don't really direct the money to those conservation efforts that make the greatest contribution in addressing the goals of the Act, and that is local habitat conservation plans. That's really the thrust of where conservation actually occurs. The problem is that we're not providing money for that purpose. The absence of Federal funding is really hampering our ability to move forward with these things. We have made extraordinary commitments, but not everyone is able to do that.

Secondarily, methods by which the goals may be equitably achieved. Now, you know, when you listen to folks from Riverside County talk, one of their biggest problems is that when you read the ESA, Congress finds that species and their conservation are of value to the Nation and its people. Well, from our perspective, if saving species is in the national interest, then it follows naturally

that it's a national obligation to provide funding to achieve those goals.

Now, in my mind, there are a variety of methods that we could look to to achieve greater equity. But in terms of the Federal level, I think we can do things in three areas. First, we can provide financial assistance to locals for habitat conservation plan development.

Second, and this is very important, we can make an important contribution through management and exchange of Federal lands in support of conservation efforts. Third, we can establish incentives for conservation of habitat on private lands. We've discussed that at length, so I won't really get into that too much.

In terms of financial assistance to local entities that are doing conservation planning, obviously the thing that everyone wants most is a check. So it would be much appreciated, of course, if we could consider the idea of cash matching grants. We're not talking about handouts, we're talking about matching grants that could be used by locals to develop and implement habitat conservation plans.

Next, we could expand a program that's just been started through the National Fish and Wildlife Foundation, and that has to do with leveraging Federal appropriations with private sector conservation sources. That program has worked through the State of California, through the Natural Community Conservation Planning Program, and we think it should be expanded.

Second, we would like Congress to investigate the idea of a revolving loan funding. Obviously, this would have to be tightly restricted so that people would have to demonstrate an ability to repay. But we think this is an idea where people that are willing to put up the money themselves to do these conservation plans could get, in effect, up front money to do timely land acquisition from Congress on a revolving fund basis.

We also, in a similar fashion, we are working with our congressional delegation on a bill which would establish authority for the Secretary to basically pay the debt service on any loans that we were to take out or bonds that we were to issue to acquire habitat pursuant to an approved HCP.

These are the sorts of things I think we could do on the financial end. In terms of—yes, sir?

Senator KEMPTHORNE. Mr. Loew, your third part is on what? State and local responsibilities?

Mr. LOEW. No, I'm just talking about financial assistance to local entities.

Senator KEMPTHORNE. I know. At the outset, you had indicated there were three points.

Mr. LOEW. Right. The last is the relative roles of each level of Government.

Senator KEMPTHORNE. OK, would you hold that, let that be my first question to you. Because I want to go into some detail on that.

Mr. LOEW. OK. Then Federal lands, we are fortunate in our area, we have a very cooperative Bureau of Land Management district manager. We've had tremendous success there. It shows me what the value of the contribution can be, just by using existing Federal lands. First of all, we could ask Congress to direct Federal lands

to the maximum extent practicable to be managed in concrete with habitat conservation plans. We could also consider the idea of designating, as appropriate, surplus Federal properties and make them available for sale or exchange for the purpose of acquiring sensitive habitat.

Last, through the base realignment process, and we're a victim of that, as you well know, in southern California, an amazing degree of base closures, it frees up Federal land that's no longer needed for military purposes. We broached the idea on our local air force base of using some of this property as exchange property, so that we can in effect use Federal resources to acquire habitat.

The last thing was the relative roles of Federal, State, and local governments, and I'll hold that if you wish, and I'll just conclude at that point. Thank you very much, Mr. Chairman.

Senator KEMPTHORNE. Mr. Loew, thank you very much. I appreciate it.

Our next witness is Dr. Charles Gilliland, associate research economist, Real Estate Center, Texas A&M University, College Station, TX. Welcome.

STATEMENT OF CHARLES E. GILLILAND, ASSOCIATE RESEARCH ECONOMIST, REAL ESTATE CENTER, TEXAS A&M UNIVERSITY

Mr. GILLILAND. Good morning, thank you, Mr. Chairman.

Senator KEMPTHORNE. Good morning.

Mr. GILLILAND. First of all, the Real Estate Center was created by the Texas legislature and charged with the duty to conduct studies in all areas that relate directly or indirectly to real estate and/or urban economics and to assist in teaching programs in real estate offered by colleges and universities. So that gives us a broad mandate.

The Center has provided a lot of information that benefits all facets of the real estate industry, including real estate agents, attorneys, lenders, legislators, and last but definitely not least, the general public. The Center has undertaken a wide variety of investigations and has provided information designed to enhance the efficiency of the real estate market in Texas.

In my capacity at the Real Estate Center, I am a specialist in rural land values. I've charted the progress of rural land markets in Texas since 1983. Every year, I monitor about 3,000 to 4,000 reported transactions and maintain contacts with about 250 observers that we survey twice a year in four southern States.

So my years of land market research have provided a unique perspective on land market developments. Perhaps as many as 12 years ago, the environmental regulations of one sort or another began to emerge as major influences on the land market. Buyers and sellers became aware of restrictions on human activity where endangered species were concerned.

At the same time, some lenders began to question the security of their collateral base in the face of possible restrictions on land use where endangered species habitat occurred. Some legislators, lenders and other real estate professionals have expressed concerns as the question of possible diminution of value arose. Responding to numerous inquiries, the Center has undertaken a study attempt-

ing to gauge the influencing effects of the Endangered Species Act in Texas on rural land values. The study was entirely funded by the Real Estate Center and conducted at the university.

The study produced the following conclusions. This is probably the most overriding conclusion that you can draw from what we have been able to identify, and that is, uncertainty concerning the current and prospective land uses affected by ESA is a very, very important concern in the land market. Owners and potential buyers may not know whether particular properties play host to an endangered species.

Observers report that bureaucratic judgments appear to be inconsistent from one property to another. Potential buyers foresee possible bans on current land uses, and the likelihood of lengthy delays in obtaining permits, plus the possibility of incurring consulting fees and other mitigation expenses.

Exacting mitigation fees in return for issuing permits adds the specter of an unanticipated and uncertain cost in particular management programs. The combination of mitigation fees and regulatory delay may cause large areas of land to be unattractive to buyers. All of this adds to that uncertainty.

In typical markets, these factors often translate into reduced numbers of offers and ultimately, value losses for the affected properties. At the Center we did a couple of projects. For the first one, we surveyed a number of brokers in response to requests from Texas legislators. The survey was designed to find out the consensus judgment of these people who are on the cutting edge of the transactions that occur in the market. We set out to see what their perspective was.

The consensus among the Texas real estate brokers expressing an opinion on value impact on vacant lots, urban fringe land, transitional rural land (40 to 45 percent of the panel expressed opinions), pointed to value declines associated with ESA. These brokers estimated a 40 percent median value decline for urban fringe land in Texas, in the Texas hill country, and a 30 percent decline in transitional land values associated directly with ESA.

We looked at what Travis County property tax authorities have done. They have adjusted their tax rolls for a total of 897 properties that were affected by ESA. In other words, people came in with proof that they had a problem and asked for property tax reductions stemming from that problem. The property tax authorities reduced their tax roll land values by 43 percent.

Agricultural land values were reduced about 22 percent. Transitional land values were reduced by about 51 percent. Vacant platted lots were reduced by about 45 percent.

We looked at my aggregated land data and found that there is too much noise going on in the land market to really draw any specific conclusions about trends relative to value declines or increases. There is some discussion of value changes in the printed material that I submitted. But these data were not useful in establishing what the effect really was.

Finally, the last thing that we noted was the Balcones Canyonlands Conservation Plan that has been proposed in western Travis County. On April 19, 1995, there was a proposal that included a $5,500 per acre fee to mitigate incidental taking of acre-

age when developing land with golden-cheeked warbler or black-capped vireo habitat.

Additionally, vacant platted lots would incur a fee of $1,500 before a home could be built. Although routine farming and ranching practices would be exempted, those farm and ranch management activities that required some incidental taking for clearing would also incur a $1,500 per acre mitigation fee.

Considering all of these aspects of this controversy, we were asked if the lenders were overreacting to ESA, and if there was a possibility of value decline. Our conclusion is that they do have a definite concern, or a reason to be concerned. And that it appears that there may be a sizable impact.

We're going to have to wait to be able to assemble some good, solid microdata to be able to do an estimate of what the exact impact is at this point. But our conclusion is that uncertainty is a real problem that lenders have been taking into account and should probably take into account in the future.

Thank you.

Senator KEMPTHORNE. All right, that's very interesting. Thank you, Dr. Gilliland.

Let's see, we now have Mr. Randy Scott, who is the planning manager, San Bernardino County, CA. Mr. Scott, welcome.

STATEMENT OF RANDY SCOTT, PLANNING MANAGER, SAN BERNARDINO COUNTY, CA

Mr. SCOTT. Thank you, Mr. Chairman.

I'm here representing San Bernardino county today, and San Bernardino County is located in southern California, as many of you know. In fact, we are just north of Riverside County, Mr. Loew's home territory.

Among other duties, I am responsible for environmental impact review of county projects and private development projects which require county permits. I also serve as the county's representative on an ongoing multiagency habitat conservation planning effort for the West Mojave Desert region. I am the project manager for a multispecies habitat conservation plan that is being initiated for the San Bernardino Valley portion in southwestern area of the county.

I was personally involved with the recent endangered species issue that I would like to share with you this morning that illustrates some of the concerns of local government with regard to the costs of complying with the ESA. A recent listing under the ESA created a conflict with a major county public works project. On September 22, 1993, the U.S. Fish and Wildlife Service emergency listed the Delhi Sands flower loving fly.

In doing so, the Service significantly impacted the county medical center replacement facility. Very little is known about the fly. It is currently believed to be restricted to seven sites in southwestern San Bernardino County and northwestern Riverside County. Nothing is known about the habits of the fly in the larval stage. The adult emerges only from late July through mid-September.

To resolve the resulting endangered species land development conflict, the county prepared a habitat preservation enhancement and impact avoidance plan for the San Bernardino County Medical

Center replacement facility. The plan was completed in cooperation with the U.S. Fish and Wildlife Service, and in order to obtain a determination from the Service that the project would not constitute a taking, under the provisions of section 9 of the ESA. This determination meant that a section 10(a) permit and a formal habitat conservation plan would not be required.

This effort was involved in an avoidance program, and the costs associated with that is the purpose of my presentation today. The facility is located on county property within the city of Colton in San Bernardino County, and is located on a 76-acre parcel. The study was conducted on the site during the summer of 1993 to determine the presence or absence of the fly. A total of eight sightings, representing seven or eight individuals, were made. All sightings were made near the southern boundary of the site and the amount of existing suitable habitat was estimated to be no more than 2 acres.

The balance of the site proposed for the medical center development was determined not to be suitable habitat. The county concluded that its original medical center layout and design, prepared prior to the listing, would have had an adverse impact on the Delhi Sand fly, and would have required an incidental take authorization under section 10(a), if the medical center design had not been modified.

Because the medical center's financing and construction schedules were well underway at the time of the sand fly listing, the county concluded that the delay associated with obtaining a 10(a) permit would effectively terminate the project. A delay and/or termination of medical center construction could cause serious consequences for future public health care in the county.

The county's response to the conflict resulted in avoidance of the entire Delhi sand area identified as occupied or suitable habitat. That was accomplished by moving the medical center complex north from the original design location, which involved acquiring additional property that was adjacent to the site. The resulting shift left an area of little more than 8 acres, approximately 8½ acres in size, which encompasses the approximately one acre occupied habitat. The long-term protection of the occupied habitat and preserve area is ensured as part of the avoidance program.

As of June 8, 1994, the total costs for mitigation had reached $3.3 million. Of the total, about 42 percent of that can be attributed to the acquisition of additional land, the habitat preservation enhancement and avoidance plan accounts for about $900,000 of that budget. The costs for redesign, engineering, construction and direct costs per fly protected at that time was estimated to be about $400,000 per fly.

Other species significantly affecting the county include an impending listing of the San Bernardino kangaroo rat, which may occur on about 39,000 acres of habitat within San Bernardino valley. Currently, additional conservation efforts are underway that the county is involved in regarding the desert tortoise in the northern portion of the county.

In a more positive and proactive approach to reconciling endangered species and land use conflicts, county supervisor Jerry Yews has proposed the preparation of a multispecies habitat conservation

plan for San Bernardino Valley. This plan is intended to preserve and protect covered species and the ecosystems upon which they depend.

Initially, this plan proposes to address some 41 animal species and 32 plant species. Obviously, a very ambitious effort that will be very expensive. We're currently projecting a cost of approximately $1.8 million to prepare the plan.

Funding for this program is extremely difficult. Currently economic climate of the area and the inability of cash-strapped local cities and the county to pay for the plan preparation is a major hurdle in aggressively pursuing the plan.

In closing, I would like to indicate that San Bernardino County has participated in developing and supports the National Association of Counties, NACO recommendations on ESA reform. These reform proposals represent, we believe, to be a moderate reform approach that strengthens the Act rather than proposing wholesale revisions to the Act.

Thank you.

Senator KEMPTHORNE. All right, Mr. Scott, thank you. That's quite a situation that you've dealt with.

All right, let me now call upon Mr. Elliot Parks, who is the director, Johnson and Johnson, San Diego, CA.

STATEMENT OF ELLIOT PARKS, DIRECTOR, JOHNSON & JOHNSON; DEPUTY MAYOR, CITY OF DEL MAR; VICE CHAIRMAN, SAN DIEGO ASSOCIATION OF GOVERNMENTS

Mr. PARKS. Good afternoon, Chairman Kempthorne.

I am Elliot Parks, deputy mayor of the city of Del Mar, CA, and vice chair of SANDAG, the San Diego Association of Governments. Professionally, I do direct one of San Diego's many biotechnology concerns.

On behalf of SANDAG, and the nearly 3 million residents in the San Diego region, I thank you for the opportunity to offer public testimony today. The San Diego region is the area south of the urban sprawl of southern California, with a unique sense of place, bounded to the north by Camp Pendleton, to the south by the Mexican border, to the east by the mountains and deserts and to the west by the Pacific Ocean.

Of our 4,200 square miles, nearly the size of, actually the size of the State of Connecticut, more than 90 percent of that land is open space, agricultural lands, parks, water and undeveloped lands. Open space and habitat are interwoven into our economic well-being. Businesses and industries come to San Diego because many view us as an important entrepreneurial center, but also to enjoy our quality of life.

Let me focus on two needs pressuring the San Diego region, and I believe much of this country. First is the need to protect the rapidly dwindling supply of natural resources. The San Diego region has a vast array of habitats that can be literally experienced in a 1-hour drive. For that reason, the San Diego region has more rare, threatened, and endangered species than any other county in the continental United States.

The second pressure is the need to ensure our economic well-being and to ensure its sustainability. Over the next 20 years, we

project that we will have 1 million more residents in our region, require ½ million more homes and ½ million more jobs. That will put substantially increasing pressure on our valuable habitats.

Can we preserve open space and still provide land to assure economic growth? We do believe so in the San Diego region, and have initiated plans for three habitat conservation programs within the region. All of these programs are multihabitat, multispecies and multijurisdictional, and the three of them together cover dunes and beaches, chaparral grasslands, woodlands and forests, riparian and wetlands, and incorporate and include all 19 governmental agencies within the region and a host of Federal and State agencies as well.

We envision these plans will cover over 90 of these rare, threatened and endangered species. The plan covers both listed and unlisted species, because we believe it's important to deal with threatened resources before they are on the edge of extinction, when the options are limited and when the solutions are much more expensive.

Habitat conservation plans are being developed with extensive advisory committee participation, including environmentalists, builders, property owners, community groups, farmers, sportsmen, local, State, and Federal agencies. One key objective of the plans is to provide certainty, certainty for environmentalists, certainty for the business community, and certainty for local government. The plans are being built on scientifically and biologically sound approaches that provide for the integration of land use and economics.

The habitat plans are important to our region's economy. We are attempting to treat habitat as another element in the region's infrastructure, joining water availability, waste disposal and transportation. We need this habitat infrastructure to preserve our quality of life and to assure sustainable economic growth.

In concluding, I would like to focus on changes in the Endangered Species Act that would improve the future of habitat conservation planning in our region and on funding of those plans. The Act should encourage multihabitat, multispecies and multijurisdictional. It should encourage plans that are built on science, integrated with local economic and land use considerations. We need more flexibility in the ESA to allow for phased implementation. Not all the funding should have to be assured before the first permits are issued.

The Endangered Species Act should be revised to return land use controls to local communities. It is time for a new partnership where we implement these plans jointly, and eliminate costly and adversarial approach to the current regulations and procedures.

Our funding strategies call for cooperation and creativity. As one example, SANDAG recently committed nearly $5 million to acquire key property in the reserve area using mitigation funds for needed transportation improvements. Local governments have invested over $5 million of their own funds in preparing these plans. A number of important issues need to be resolved, especially financing. Local financing strategies need to match Federal, State, and private funds.

Our region is ready to assume our fair share of responsibility. But we need your resolve and your collaboration, through changes in the Act, and your continued commitment through all of the implementation stages. Thank you very much.

Senator KEMPTHORNE. All right, Mr. Parks, thank you. I appreciate your comments.

Mr. Marsh is with Siemon, Larsen and Marsh, from Irvine, CA. Welcome.

STATEMENT OF LINDELL L. MARSH, PARTNER, SIEMON, LARSEN & MARSH

Mr. MARSH. Chairman Kempthorne, I appreciate the opportunity to discuss with you today what we're learning from a unique national dialog process focused on exploring the development of a funding framework for the conservation of biodiversity within the urbanizing regions of the Nation under the Endangered Species Act and to an extent, under the Clean Water Act.

The funding framework dialog is both different from and similar to the dialog of the Keystone Center. It is a year-long facilitated national discussion among the affected multiple stakeholders, cosponsored by the Growth Management Institute and the Environmental Law Institute, and directed by three facilitators, each with a different perspective, development, conservation and local and State government. I generally represent the development interests; Dr. John DeGrove of Florida represents the State and local government interests, and Mike Bean the conservation interests. It involves a broad constituency of various interests.

Bringing adversarial stakeholders together to dialog has a history, and is timely. There are now many more than 20 examples in recent years where wildlife preservation has been worked out so as to be compatible with economic development by bringing these interests into a collaborative planning process. We are hearing about a number of those kinds of cases today—the Louisiana black bear, the Karner blue butterfly.

Over a decade ago, I represented Amfac and Foremost-McKesson, the owners of San Bruno Mountain. On their behalf we requested the first habitat conservation plan. It later became the model for section 10(a) of the Endangered Species Act. The key to the success of that plan was the underlying process—a collaborative planning process, bringing together all of the interests to solve the problem. This is becoming the new paradigm for addressing problems between wildlife conservation and economic development under the Act.

The funding framework dialog builds on these successes. Two sessions of the dialog have occurred in Washington, DC, and San Diego, CA. The remaining sessions are scheduled for Texas and Florida, with the final session scheduled for the Smithsonian Institute in Washington, DC in October or early November.

The dialog is not to debate the level of wildlife protection or the regulatory aspects of the program. It also does not address issues related to timber, fisheries, or agriculture, except as they relate to urbanization. It is focused on the question of how do we fund conservation in urbanizing areas of the country—California, Texas, Florida.

What I'd like to do is talk just about two things. One is what we're learning out of the dialog, and then some emerging principles. So what are we learning?

First, we are learning that there's a broad and growing consensus that a funding framework is the most critically needed step toward resolving the perceived economic development/wildlife conservation conflict, at least with respect to urbanizing areas.

Second, the cost of wildlife conservation in urbanizing areas is not large if shared by the broad constituency of interests. Several years ago, based on a back of the envelope guess, a small group of us concluded that the cost of conservation in urbanizing southern California would be relatively modest over an extended period of time, generally in the range of one or two B–2 bombers or the rebuilding of the Woodrow Wilson bridge over the Potomac. Not a great deal of money in the future of the region, which is the eleventh largest economy in the world, provided that the cost is shared broadly by the entire constituency of interests.

On the other hand, if the entire cost is allocated to only one of the constituent interests, such as new economic development or to current local taxpayers, it becomes unbearable and in turn adversely affects all of the interests.

As we have discussed today earlier, wildlife conservation is of shared local, State, and national significance. If shared by these broader interests, including new development, its cost is not large. By analogy, if historically the costs of the national highway, flood control, sewer or water supply systems, would have been allocated only to the then-new local development or to the then-existing local or regional populations, the costs would have appeared large and unmanageable. In turn, failing to establish a funding framework for such purposes would have adversely affected our local, State, and national economic well-being.

From this perspective, it appears that the problem is not the amount of money required, but our collective difficulty in designing an efficient system for sharing the costs. We have argued about the problem rather than simply setting about to solve it, as we heard earlier with respect to the efforts addressing the black bear or the Karner blue.

Third, in the past, we have not adequately funded or provided for the conservation of biodiversity within the urbanizing areas of the Nation. Our national settlement programs for highways, flood control facilities, sewer and water systems and ports did not provide adequate funding for the conservation of biodiversity as the direct and indirect impacts of these programs occurred. It has created, in effect, a growing shared conservation deficit or debt.

Fourth, the cost of failing to adequately anticipate and provide for the conservation of biodiversity by the local, State, and Federal communities has fallen, by default, on the shoulders of new development projects, including, by the way, public infrastructure, project-by-project.

There is a newly emerging consensus within the conservation as well as the development communities that this is unfair, inefficient, unnecessarily conflict producing, and inflationary. At the same time, conservation interests are unwilling, understandably, to allow wildlife and biodiversity to be lost, with the result that new

development has been the funding vehicle by default, notwithstanding the results.

Fifth, the project-by-project system of development and wildlife conservation has proven extremely inefficient within urbanizing areas, and has contributed to a political backlash. Project-by-project delays prevent us from taking advantage of economies of scale, but the cost of habitat increases as development within the region proceeds. There is broad agreement that addressing this problem proactively, early and in a region-wide manner will result in significant cost savings and better results. However, such a region wide approach will work and not collapse only if an adequate funding framework can be established.

Finally, international competitiveness among urban regions will increasingly pit region against region. Regional wildlife habitat is a key determinant of the viability of the urban system. It assures the quality of life demanded by a modern work force and urban suburban population. In order to support regional competitiveness, habitat should be incorporated into the regional system as efficiently as possible and should be designed in conjunction with transportation, housing, utility and other urban and development components.

While there is a cost associated with conservation, by addressing it in a strategic manner, together with other components of the system, such as transportation and infrastructure, the resulting open space can contribute to the efficiency and value of the other components, in effect partially offsetting and lowering the cost of wildlife habitat acquisition when viewed separately.

The economically most competitive regions are those which plan for the interaction between people, economic development, and anticipated environmental impacts synergistically and strategically.

There are four emerging principles. One, conservation should be planned and funded as any other component of the regional urban system. Conservation planning should take into consideration, among other things, the efficiency, economic well-being and competitiveness of the region as a whole. Second, lands required for conservation pursuant to such plans should be designated as early as possible, and in advance of urban encroachment. This establishes clear expectations—the stability that you, Chairman Kempthorne, mentioned earlier, and provides assurances and predictability to both economic development and conservation interests.

Third, early funding for acquisition is the most important element of the funding framework. Without early funding, it is extremely difficult politically, if not legally, to designate for conservation of privately owned lands and wildlife habitat. Without the designation of such lands to be conserved, the entire process quick degenerates into the costly and time-consuming, project-by-project approach that we are now trying to correct.

Finally, the provision of such early funding is beyond the capacity of the existing populations of a region and as with other components, the regional urban system should be a shared responsibility of the local, State, and national communities.

For the reasons discussed above, the burden of conservation should be shared, as any other element of the regional urban sys-

tem is, such as highways, flood control, water and sewer facilities, among new development, ultimate users and the existing, future, local, regional, national, and State communities. Of particular importance is the need for State and Federal support to provide funding for the early acquisition of lands.

Case examples of successful collaborative planning among the diverse stakeholders around issues of environment and economic development have provided learning for the future creation of regional funding frameworks. These successful cases indicate the importance of careful facilitation and attention to the process design.

I appreciate the interest in the dialog, and would welcome your continued interest in it, and would be available, of course, for questions.

Senator KEMPTHORNE. All right, good, Mr. Marsh. Thank you very much.

Let me begin with Mr. Loew. Mr. Loew, I understand that your agency is the recipient of the $30 million collected so far as a habitat mitigation fee from developers.

Mr. LOEW. That's correct.

Senator KEMPTHORNE. Have any studies been completed that suggest how the $1,950 per acre fee affects the price of homes to the buyer in the area?

Mr. LOEW. That's a very good question. We've had some people come in from the University of Texas at Austin who were examining the issue. I don't believe they ever did a definitive study. I had thought of this concept myself. We have not done one. The reason is that it's very difficult to disaggregate the effect of the fee from the overall downturn of our local economy. I can just give you an example, a personal example. I sold my house recently after a 2-year delay at a $50,000 loss. It's not affected in any way, shape or form by the kangaroo rat issue, yet the property declined dramatically in value. Why did that happen? It wasn't the kangaroo rat, it was another reason.

So we have not done a formal economic study and I doubt that a credible one could be prepared, simply because of the fact that virtually at the same time that this fee went into effect, we had, exogenous factors basically have a very depressive effect on our property values. So it's difficult to ascertain exactly how much was due to the kangaroo rat and how much was just due to the general economic decline.

Senator KEMPTHORNE. Dr. Gilliland, can you shed some light from your perspective, I mean, is this something that can be calculated?

Mr. GILLILAND. It's going to be very difficult to do that. First of all, you have to have some sort of an indication of properties that are affected versus those that aren't. But if you're talking specifically about this impact fee approach to things, if you're in a down market, you're not going to see much development going on in the first place. If you're in an active market like we once again have in Texas, the ability for the landowner to pass that fee on to the homeowner is going to be related to the opportunities for competitors in the market that are not subject to the fee.

In other words, if you have a lot of competition, then the landowners or the developers are probably going to incur all of the fee.

If you don't have, if you have a unique asset, if you will, then a good deal of the money is the cost and is probably going to be passed through to the end user or the homeowner. I think, as several of us have indicated here this morning, the important aspect of this is that providing habitat through this kind of a mechanism is not a free good. Someone is going to have to pay for it. It's just a question now of who is incurring that cost.

Senator KEMPTHORNE. OK. Then also, this report, Reconciling Conflicts Under the Endangered Species Act, the Habitat Conservation Planning Experience, and Michael Bean is one of the authors of this. But included in here, and Mr. Loew, this is for you, but according to this report, the mitigation fee collected for the Stephens kangaroo rate is expected to generate $10 million to $15 million annually, and to ultimately permit $100 million in bonding capacity.

In your testimony, you state that $44.8 million will be used for the rat. How will the rest of the money generated by the rat be used? Will it be used to buy habitat for the rat or for other species as well?

Mr. LOEW. Just to clarify the record, in terms of the revenue generation potential, it's extremely volatile. People basically pay the fee at such time that they pull grading and building permits. So the fee generation relates directly to the level of permit activity. You can say that since we've instituted this fee in 1989, at the high water mark we were collecting about $1 million a month or about $12 million a year.

Last fiscal year we collected $600,000 for the entire year. As a result of that volatility, you cannot bond against that revenue source. So it really, in effect, has no bonding capacity. Because you just simply cannot guarantee at any one point in time or for any year exactly how much money would be available for debt service. That's been our major problem we've faced.

In terms of where the money goes, to date, about 82 to 83 percent of the money that we have collected and expended has gone for land acquisition. We have also spent a considerable amount of money defending lawsuits. We are defending an inverse condemnation suit now. We've been sued six other times. We have also spent about $1 million on biological research. The primary cost driver, though, by far, is land acquisition. That is what we've spent most of our money for.

Senator KEMPTHORNE. Which would be habitat for the rat?

Mr. LOEW. It's purchased primarily for the kangaroo rat. But the underlying objective is to try to promote biodiversity. So to the extent we can, we'll try to select kangaroo rat habitat that's also inhabited by a number of other sensitive species.

Senator KEMPTHORNE. Like you might plant some lupin?

Mr. LOEW. Well, sure. If we had those butterflies, we would be pleased, I suppose.

Senator KEMPTHORNE. Now, by doing that, using this money to purchase habitat that would be conducive for the kangaroo rat, would that alleviate the problem that, we've had a witness some months ago where they couldn't remove the habitat from around their home, which when the fires came, they felt was a contributing factor to the loss of the home.

Mr. LOEW. Well, that issue was taken care of via a separate, cooperative agreement. Landowners can now do those things that they were previously prevented from doing. The real benefit of spending the money in this context for the kangaroo rat really lies not so much for the kangaroo rat but for the future. I would just note that we've got 50,000 acres of reserve set aside already for the kangaroo rat. Interestingly, there is more coastal sage scrub habitat on those reserves than there is grassland.

So there is tremendous ancillary benefits to other species. In fact, what we're doing now is negotiating with the Fish and Wildlife Service, BLM and the Forest Service to do an ecosystem based plan for the entire region which uses those kangaroo rat reserves as the basis of a regional reserve system.

So in other words, at this point, all we need to do is identify the additional increment of habitats that are not adequately conserved now, focus on conserving those, and really, the amount of distance we have to go to get to the goal line is really short because of the investment that's been made in this process.

Senator KEMPTHORNE. OK, thank you.

Dr. Gilliland, you have provided some very interesting testimony, some good information, some numbers. In laymen's terms, what's it all mean?

Mr. GILLILAND. First of all, it means when you look at what we were able to find, there are a lot of people out there that really don't have a very good handle on what's happening to the really affected properties. Not many of those are selling, beyond the ones that are being purchased by environmentalists and other groups that can be identified.

So once again, I keep returning to this theme that there is a great deal of uncertainty out there, which has caused lenders to think about what's going to happen next. One thing that puts a dimension on it is the proposed $5,500 per acre fee imposed on the development process. As a lender holding potential development land mortgages, that would certainly give me a great deal of heartburn. Looking at someone with a mortgage that I had funded on a property that suddenly was faced with that kind of potential expense would make me very nervous. It may be something that deserves some further examination with regard to the kind of threat there is to the lender's collateral bases throughout the country.

Senator KEMPTHORNE. That's a new assessment?

Mr. GILLILAND. The mitigation fee assessment has not been put in place yet. The way that the Balcones Canyonlands Conservation Plan progressed was as follows: the city of Austin voted bonds to purchase habitat, county voters then rejected a bond issue, and the county looked for an alternative funding mechanism (mitigation fee). The plan has not been met with a great deal of enthusiasm throughout the county because it's on hold at this point.

Senator KEMPTHORNE. If we just sketched this scenario out, you're talking about there certainly could be an adverse impact upon the loaning of capital or projects?

Mr. GILLILAND. Yes.

Senator KEMPTHORNE. Yet when we talk about the funding mechanism, isn't it possible that the very taxpayers or the tax base that would provide the funds for the mitigation is going to be ad-

versely impacted by this whole problem, so that you will not have the financial resources to accomplish what you're trying to do with the restoration of the species?

Mr. GILLILAND. I would think that the Travis County experience is a pure example of that happening. The county has adjusted 43 percent of the value off of those properties that were involved in ESA problems. The tax base will begin to shrivel, and it will become more and more difficult to get other property owners to pick up a bigger burden.

In Texas, property tax burdens are painfully on everyone's mind. They have grown substantially over the past 10 years. So it's not surprising to me that bond issues are being turned down.

Senator KEMPTHORNE. I think you touched on this, but let me ask you the question. Are lenders overreacting when they avoid making loans on properties that have listed species habitat?

Mr. GILLILAND. Our judgment is that they are not considering the degree of uncertainty. Markets can deal with practically anything but uncertainty. If you look at the level of uncertainty that's out there, whether or not you have habitat, how much it's going to cost or how much it might impact property values, you have a real problem.

If some of the declines that were registered at Travis County appraisal district come to pass in real market values, a loan that was 70 percent of value on rural land suddenly falls 20 percent and becomes a 56 percent loan. At some point, that loan will become nonperforming. We've been down that lane before with our banking system. So it's something that could be a real problem.

Senator KEMPTHORNE. OK, thank you very much. To continue this same sort of discussion, Mr. Scott, I found very interesting your insight with regard to the Delhi sands flower loving fly. In fact, we had a story on it, well, this was from the wire service, but in the Washington Times, where it says, they are only about an inch long, live a couple of weeks at most, and you'd probably swat one if you saw it. Be careful, the Delhi sands flower loving fly is now on the Federal endangered species list, the first fly ever to achieve that distinction.

There are how many flies?

Mr. SCOTT. Well, on this particular site, there were seven or eight flies, individuals occurring there.

Senator KEMPTHORNE. You calculate that the additional cost of the project was what, $400,000 per fly?

Mr. SCOTT. Yes.

Senator KEMPTHORNE. And this was for a hospital?

Mr. SCOTT. Yes, county hospital replacement facility. The intent of that, the whole purpose of the replacement facility was to design a seismically safe public hospital in the region, which doesn't exist currently.

Senator KEMPTHORNE. Did this additional cost in any way create the concern that this project may not be able to go forward?

Mr. SCOTT. I don't think the cost was as great a concern there as it was sort of the opportunity cost, if you will, rather than the direct cost outlay to accomplish the avoidance and get the signoff agreement by the Fish and Wildlife Service that it didn't constitute a take and require a 10(a) permit and a habitat conservation plan.

I think the delays associated with going through the 10(a) process would have killed the project. So the avoidance determination and the ability to move the facility and provide protection for the occupied habitat was instrumental.

Senator KEMPTHORNE. Is there any way to—no, I won't even ask that question.

Why does the medical facility need to monitor dune forming activity on the site?

Mr. SCOTT. Well, the exact characteristics of the habitat are not well understood, as I indicated. However, it appears to be, the fly's existence appears to be related to a loose sand formation that occurs in the vicinity. It's this loose sand environment that is of concern in perpetuating the habitat and therefore presumably providing for the continued existence of the species. There is some question about whether that would change by constructing immediately adjacent to the site both from a structure standpoint and the paving and associated uses and so on.

Senator KEMPTHORNE. How long will the monitoring go on, how much does it cost, and who pays for it?

Mr. SCOTT. The monitoring was agreed to occur for a 5-year period. The details of that monitoring effort are evolving based on knowledge that we gain with each succeeding year. There is clearly a limitation on the total period of time. The total cost is about $500,000 for the monitoring effort.

Senator KEMPTHORNE. Five hundred thousand dollars?

Mr. SCOTT. For the monitoring effort.

Senator KEMPTHORNE. Per year?

Mr. SCOTT. Per year.

Senator KEMPTHORNE. Who pays for it?

Mr. SCOTT. It's coming out of the costs associated with the medical facility development.

Senator KEMPTHORNE. So the costs are passed on to the patients?

Mr. SCOTT. Ultimately, and to some extent to the taxpayer, to the extent that the facility is being financed through bonding and some Federal and State funding contributions.

Senator KEMPTHORNE. OK. Now, you seem to have become pretty well versed regarding this fly. So let me ask you this question. I understand that the listed species is actually a sub-species of a flower fly that has other, more abundant sub-species, and that several other species are included in the genus to which it belongs. Do you know if that's correct?

Mr. SCOTT. That's my understanding, yes, and that that broader genera occurs, it's fairly wide ranging throughout the southwest. But this particular sub-species is a so-called endemic that occurs in a very specialized habitat. It is, as we understand, similar to another species that occurred in the El Segunda Dunes area near the Los Angeles airport that is now extinct.

Senator KEMPTHORNE. OK, thank you very much.

Dr. Parks, what have been the costs of the habitat and species conservation plans in your area, and does that include the opportunity costs that we just referenced?

Mr. PARKS. Well, one of the first things that SANDAG did in our efforts to coordinate the three habitat conservation programs was

to do an economic impact study. I would like to provide that in writing to the committee, if I could.

Senator KEMPTHORNE. Yes.

Mr. PARKS. We have looked at long-term costs and we believe that there is long-term economic advantage in these programs. As I mentioned, there's a direct relationship, we believe, between preserving these habitats, quality of life and our economic growth in the region. As was mentioned before, certainty is a most important and crucial issue. We believe we're, as it were, ahead of the curve in identifying those areas for preservation and those areas for development, so that certainty will be part of the program.

Senator KEMPTHORNE. What kind of response has there been to these proposed conservation plans? I ask this because I understand that there have been some concerns voiced recently regarding the plans and specifically, how have small landowners responded and why?

Mr. PARKS. As I mentioned in my testimony, we do have an extensive advisory committee network. We also have an active outreach program that's being spearheaded by the San Diego Zoological Society and the Nature Conservancy as well, and are trying to get as many property owners involved in the process as early as possible.

Obviously, any property owner has a concern about their own property and the economic well-being of that investment. It's important to bring those folks in early in the program and to use their input throughout the program. But from a conceptual framework standpoint, the desire is to establish those areas that are unique habitat areas, if there are particular areas that are particularly unique, those would have to be prioritized very early and we would have to see in discussions with property owners whether they would be willing to work with us on those.

But in general, because we have large areas, and we're saving whole habitats, we have the opportunity to select areas that are of the greatest biological impact and the least economic impact. That economic impact would include individual property owners as well.

Senator KEMPTHORNE. But I have read some of the articles, there is a growing outcry against these plans?

Mr. PARKS. Well, I think there is little outcry specifically against the plans. There is growing concern about property rights. There is a particular park, regional park, and there has been some substantial outcry about the goings on with respect to that regional park. But these habitat conservation programs are broader programs. We're just building consensus now, and I would characterize them that way.

Senator KEMPTHORNE. You mentioned in your testimony that habitat infrastructure is necessary to preserve the quality of life that attracts a globally oriented work force to San Diego. Similar arguments, I know, have been made in Idaho. While no one can dispute the value of a healthy environment, it's difficult to find specific figures quantifying the result economic benefits. Do you have any figures that support that?

Mr. PARKS. Well, as I said, I will provide in writing to the committee those figures that we have. My personal experience, one of my professional activities is to encourage high tech and biotech

within southern California. I know some of the things that both domestic and international companies look for in placing high tech and biotech facilities, which basically can be placed anywhere. They include a well-educated work force and ready access to academic institutions that have the knowledge they need to bring into products.

Both of those, if you look at that mobile society, I think one can identify very clearly the quality of life as one of those things that motivates the mobility of that work force that's needed for those industries.

Senator KEMPTHORNE. Final question for you, you provided us a brochure called Info.

Mr. PARKS. That's correct.

Senator KEMPTHORNE. On page 5 of that brochure, it states that "habitat programs are necessary to keep development from being disrupted by future listings of endangered species." Under the current law, how is it possible for conservation plans to provide the kind of certainty implied by that?

Mr. PARKS. Well, exactly, Senator. As I mentioned in my testimony, we would like to see some modifications to the current Endangered Species Act that would allow us to move forward with these habitat conservation programs. Much has been made about safe harbors. In essence, we are, I view us looking at the region as creating safe harbors for development.

Much has been made of no surprises. Again, this relates directly to the statement on page 5 that we have to have certainty, we have to have perpetuity as well. So we know that in perpetuity, we will be able to maintain and sustain biological preserves and areas for economic development elsewhere in the region.

Senator KEMPTHORNE. All right, thank you very much.

Mr. Marsh, a few questions for you, if I may. In your written testimony, and you referenced it in your remarks, you state that "the cost of conservation in urbanizing southern California would be relatively modest, generally in the range of rebuilding the Woodrow Wilson bridge, provided the cost is shared." In a letter from the California Building Industry Association, Ed Stahl states, "These programs are incredibly expensive. The cost of the Stephens kangaroo rat and the multiple species conservation plan, which covers only one-third of San Diego County, are in the hundreds of millions of dollars." He says in his letter that Federal and State funding is essential to these programs.

Is a cost in the hundreds of millions of dollars in your estimation modest, even if it's shared?

Mr. MARSH. I think that it is hundreds of millions of dollars, and taking into consideration the size of the economy, this is not a large sum. In fact, I would say that something in the range of $1 to $2 billion would not be large, if it's viewed as a cost incurred over a long period of time and also a cost that would be shared broadly. When the cost is placed only on new development is when it really then appears to the developers as being an extremely large amount. That's the rub.

Senator KEMPTHORNE. Would you find it more effective to use a given dollar to try to recover a listed species in an urban area

where habitat has already been greatly modified, or to use that same dollar in a less urbanized area?

Mr. MARSH. That's one of those questions about which child do you save—a so-called Sophie's Choice: I don't know how you decide which species should be lost. It would be the kind of decision that should be allocated to the God committee. More important, I'm not sure that we have to make those choices.

Looking at the magnitude of costs, given that you can spread them broadly, I believe that we generally will not have to choose. I just concluded a habitat conservation plan for 2,000 acres for a private landowner, the Fieldstone Company, whom you may have read about. The cost were about $3.5 million over a 5-year period to process that plan, and about $10 million to $12 million to the project as a whole, spread over about 2,300 units.

From my perspective, that is a large cost. It was the product of what I would call project-by-project permitting, even though it's a habitat conservation plan. We need to promote planning at the scale of the Riverside County Conservation Plan, which by the way I helped put together on behalf of the Building Industry Association. It's at that scale that I think you can allocate the costs broadly and that everybody can then afford.

Senator KEMPTHORNE. Your thoughts on the situation in San Bernardino County with regard to the seven flies, just your perspective. For some, that's difficult to truly understand when you have sub-species and other members of the family that are quite prevalent.

Mr. MARSH. When we originally did San Bruno Mountain, we were faced, in 1979, with the proposed listing of the Callipea Silver Spot butterfly. I was representing Amfac and Foremost-McKesson. It was clear that they could not develop portions of the Mountain and comply with the Endangered Species Act.

The question was, how do you ever get through that thicket. We proceeded ahead, and when we finally finished the plan, we amended the Endangered Species Act to permit the taking of an endangered species and obtained our permits. We thought this was a fluke—that it was something that was just the chance coming together of the right group of people and the right circumstances.

Over the following 12 years, I've come to the conclusion that while these things appear difficult at the outset, that as the fellow that was working on the Louisiana black bear said, when you get the people together and begin collaborating, looking for a solution—trying to find a solution—we find a way. I'm not convinced that we can find a solution in every case. But I believe that we can find them in most of the cases. As to the Delhi flower loving fruit fly, I don't know whether should be saved or not.

But my guess is that when you see the efforts, the amount of money spent, and I think it was something like $3.5 million on the process, is what bothers me a great deal. However, like Fieldstone, the problem was inefficiency in resolving the issues, not the ultimate cost. Fieldstone had a $140 million land loan that it could not renegotiate during the 5-year period that it took to obtain a section 10(a) permit. This created instability for the company, which then in turn created instability for the region. It's these kinds of cumu-

lative instabilities that I think are the real problems with the Endangered Species Act that need to be addressed.

We can address significant factors causing instability by establishing a funding framework, by providing a framework for dealing with these issues in the normal course of things, as we do for highways and bridges.

Senator KEMPTHORNE. Mr. Scott, what was the public reaction to the fly issue?

Mr. SCOTT. I think it was negative and unaccepting and questioning the costs and the value or the merits of attempting to save a fly. It's the concept of the megafauna that are very appealing and so on, and people see some value in aesthetically, as opposed to this particular creature. I think that has some effect on just an individual's ability to accept the value of the effort, the costs associated with it. I think that's certainly a negative aspect of most invertebrates. The butterfly is a little more appealing. The flower loving sand fly is not very appealing. That's a real problem, just in terms of individuals' perceptions.

So you have to rely on, sort of approach it from a broader standpoint in terms of the merits of overall endangered species conservation and so on. So I think it takes somewhat of a sales effort to convince people that it's an appropriate expenditure of time and money. This particular creature, it exemplifies a couple of problems that we see with the Act currently, and that's the single species focus, and the unanticipated lack of warning of a listing very quickly. Under these circumstances it was an emergency listing, imposed the full provisions of the Act during, they considered the permanent listing in their noticing process.

It was a combination of events, it occurred in an area that conflicted with this major public works project. It also is an area where we have an industrial growth association development that is attracting, attempting to attract industries into the area, provide employment and so on. That's a major conflict also. It raises questions about, or continues the uncertainty about the use of one's land and the delays that a developer might encounter in trying to push forward with a project.

Senator KEMPTHORNE. When we say developer, but in this case it was a hospital.

Mr. SCOTT. Exactly. When I say developer, I'm alluding to the Algamansa industrial area that is attracting industrial growth to that region.

Senator KEMPTHORNE. Mr. Marsh, if I may direct another question to you, I agreed with you where you have stated that we need to make this a collaborative process and a funding framework so that it's not just on one entity but it's shared.

Mr. MARSH. Right.

Senator KEMPTHORNE. How do we go about that? How do we establish that funding framework?

Mr. MARSH. Could I just make one comment on the issue?

Senator KEMPTHORNE. Sure.

Mr. MARSH. It would be interesting to you that the Fieldstone HCP covered 63 listed and unlisted species in one permit. These are the assurances that we need for the development community and for the private sector. Better that we put these assurances into

the Act. However, whether they are incorporated into the Act or are just a matter of interpretation, this aspect of the problem is solved.

In deciding on that 63 species, there was one species that we argued with the Service over. It was the Pacific pocket mouse, which has not been seen on the site. We worried that if it were to be listed, and it turned out to be on the site after we had gotten all these permits and done all this work, we might have our plans disrupted.

However, based on the work that had been done pursuant to a collaborative process with the conservation interests, local, State, and Federal agencies were confident that we could figure out a way to accommodate the mouse on the 700 acres that had been set aside. I think that this was a good judgment. A total signoff for the area would have been better.

What happens if that mouse shows up? Should we then be able to say, we as a society are going to lose that species. On balance, if we had the process to deal with the mouse in an equitable fashion, so that my client will be treated fairly and expeditiously, then we will be able to work the problem out. We believe that the Fieldstone HCP implementation agreements provide for such a process.

Now, the question then segues into your broader topic, that is, collaboration. In following the lead of the private sector, a major transformation is occurring. I think that is reflected in the changes being discussed in the Federal Government. It's what Peter Drucker and Tom Peters are talking about. We are moving to a less command-and-control organizational structure and toward more horizontal management. That is very productive—management by principle, values, and collaboration. It's really learning how to cooperate to solve these problems in an expeditious manner.

A year ago, I testified before this committee, and I said that there were three areas that needed to be addressed—one was assurances; second was to deal with the management structure in the Department of Interior; and third was the creation of a funding framework.

I have been very impressed by what Secretary Babbitt is doing concerning the management of the Department of the Interior, something that cannot be done by legislation. Increased collaboration—so you get the efforts like the Louisiana black bear as a matter of common practice, and HCPs being more efficiently completed.

So I think the answer is, somehow, that we have to instill in the Federal agencies, as a part of this redesign of governmental agencies, is what we're learning in the private sector about horizontal organization and management.

With respect to the funding framework dialog, we started out a year ago or a year and a half ago, to bring the constituency together, to find an answer to the question of how much it will cost and who should pay.

Obviously, the question about Federal funding is significant. I come from Orange County, CA. While there were some people betting on the stocks out there, the county problem is as deep as difficult as the problem facing the Federal Government. We have to be careful in figuring out how we efficiently deal with this problem.

I think that what regional agencies such as SANDAG and Riverside have been doing in trying to reconcile proposed conservation measures with the economic well-being of the region as a whole. Let's do it efficiently.

There's a role for the Federal Government in the funding of wildlife conservation. The most critical need is for up-front funding. Brian was talking about the idea that you can't bond the kinds of revenues that we're anticipating from regional impact fees. The impact fees go over all development, so that there's a level playing field. You can't bond those.

What would be very helpful would be the kind of funding role that the Federal Government has played in connection with other infrastructural development, providing up-front funding for habitat acquisition that gets paid back. Non-interesting bearing loan structure would allow for us to draw lines as to what must be acquired, so that it gives predictability to the private sector. Then we would know. That would be extremely helpful.

The details of such a funding framework are very difficult to put together. Accordingly we intend to continue the dialog with meetings in California, Texas, and Florida, with an ending session at the Smithsonian in Washington, DC. The focus is on how does one deal with the funding framework for funding conservation in urbanizing areas, which are primarily in California, Texas, and Florida.

Senator KEMPTHORNE. I appreciate it, again. This has been very helpful, this discussion.

One point, we think of the San Diego area, Riverside, San Bernardino, we also have some very rural areas. Certainly, coming from Idaho, I'm very familiar. I'll tell you, you could tax the whole community and you can put the whole community out of work and you still will not have derived much income. So that's a dilemma. But that's what we're going to have to deal with.

So again, if you have additional thoughts, please make them available to us. I thank all of you. You've come a great distance to be here today and it's been very helpful to us. So I thank you all. This hearing is adjourned.

[Whereupon, at 1:13 p.m., the subcommittee was adjourned, to reconvene at the call of the Chair.]

[Additional statements and material submitted for the record follow:]

[The following questions were submitted by Senator Lieberman for the record, but were not available for as this hearing record was sent to the printers. The responses to the questions will be retained in committee files.]

QUESTIONS BY SENATOR LIEBERMAN FOR MICHAEL BEAN

Your group examined a number of alternatives for incentives under ESA.

1. Are there others that should be considered? Can you give some examples?

2. In general, did you attempt to examine the full range of Federal programs, including those outside ESA but under other Federal statutes?

3. Did you consider the full range of private alternatives and market-based incentives?

4. Do you think voluntary incentives can effectively replace regulatory authority under ESA? Will regulatory authority and incentives work best when combined under ESA, or when implemented separately and in isolation?

The Wildlife Management Institute (WMI) recently released a report entitled "How much is enough: A regional wildlife needs assessment for the 1995 Farm Bill." WMI contends that many declining species of wildlife could be helped by a properly targeted Conservation Reserve Program (CRP) program.

5. What is your reaction to WMI's analysis—how much of an impact could a targeted CRP program have on preventing the further decline of species on or near farmland?

6. Would it help the Habitat Conservation Plan (HCP) process?

The U.S. Fish and Wildlife Service (FWS) reports that one-third of all endangered and threatened species are wetlands dependent. The Center for Marine Conservation reports that this figure increases to 43 percent when candidate species are included. Yet, incentives for wetlands and wildlife habitat may not be up to the task. For example, enrollment requests for the Wetlands Reserve Program (WRP) outstripped appropriation by a factor of eight during the last 5 years.

7. How much of an impact could a targeted WRP program have on preventing the further decline of species on or near wetlands? What impact would full funding have?

8. Would it help the HCP process?

9. What effect would such a program have on helping financially needy wetland owners, and reducing private property conflicts?

The Stewardship Incentives Program (SIP) of the U.S. Forest Service provides cost sharing and technical assistance to private non industrial forest landowners across the nation to encourage forest stewardship. A significant percent of declining species of plants and animals occur on these lands. Unfortunately, SIP has been zeroed out under House and Senate (proposed) appropriations.

10. If SIP eligibility and targeting were to include eligibility for habitat protection and restoration for declining plant and animal species, how much of an effect would this have on ESA habitat needs?

11. Would it help the HCP process?

Please comment on the potential of grant programs under the Clean Water Act for watershed protection, watershed restoration, and nonpoint source pollution control to help declining species of animals and plants.

12. Can these programs assist the HCP process?

13. Can they assist private landowners?

14. Can they help Federal, State and local agencies?

QUESTIONS FOR GEORGE MEYER AND MURRAY LLOYD BY SENATOR LIEBERMAN

15. What effect would a rollback of ESA enforcement authority on private lands have on Habitat Conservation Plans (HCP's)—would it eliminate the driving incentive to get competing interests together at the same table?

16. What other incentive would exist to get these interests together if ESA enforcement is replaced by voluntary programs?

17. What effect would a takings law such as S. 605 have on the HCP program—would it effectively eliminate ESA enforcement authority and the incentives it brings to public/private partnerships?

The Resource Conservation and Development Program (RC&D) of USDA provides a network of volunteers to help work out local alternatives to Federal, State and local resource problems, including ESA protection.

18. To what extent can this program help agencies with field implementation, or serve as a model for public/private partnership building? Can it leverage financial resources significantly? Does it provide an effective way to implement alternative local solutions? Do you think it should play an expanded role in ESA issues, or is it involved at the right level now? How do we ensure that the ESA implementation process can take advantage of this program?

19. Are there other "third ways" that you could suggest to assist local implementation of HCP's that build on existing mechanisms such as the RC&D program?

20. What about the Partners for Wildlife Program of the U.S. Fish and Wildlife Service—what potential does it hold for ESA protection?

21. Do you think existing Federal programs mentioned above require legislative changes to reach their full potential for ESA implementation, or can they be implemented by purely administrative means under existing statutes? What additions or deletions would you make to statutes to accomplish this?

Please comment on the extent to which the current HCP Process serves as a model for the future of ESA recovery implementation.

22. Do you think it requires legislative support to reach its full potential, or can it be implemented by purely administrative means? What additions or deletions would you make to it?

23. Can you provide examples of any State agency programs,

particularly by wildlife agencies, that provide a means for public/private partnerships, or better agency coordination? Do these require Federal legislative changes and, if so, what are they?

STATEMENT OF CARL LOOP, PRESIDENT, FLORIDA FARM BUREAU FEDERATION AND VICE PRESIDENT, AMERICAN FARM BUREAU FEDERATION

I thank you for the opportunity to speak to you regarding reauthorization of the Endangered Species Act.

My name is Carl B. Loop, Jr., I serve as Vice President of the American Farm Bureau Federation and President of the Florida Farm Bureau Federation. I own and operate a wholesale nursery company in Jacksonville, Florida.

We in Florida are keenly aware of threatened and endangered species. Our State ranks third in the number of affected species. Currently, we have 89 listed as endangered or threatened, 12 species proposed for Federal listing and 288 considered candidates for Federal listing.

Species locale in our State is probably in line with reports which indicate that nationwide 78 percent of listed species are on private lands, with 34 percent exclusively on private land. Most of this is farm and ranch land. Farmers take pride in producing food while seeing wildlife on their property.

Unfortunately, the present Endangered Species Act, with its restrictions, makes landowners wary rather than proud to have listed species on their property. Currently, having a listed species equates to restricted use and loss of value to property.

The American Farm Bureau believes the following changes must be made when the Endangered Species Act is reauthorized:

1. Private landowners must be compensated for a loss of property value due to regulations of the Endangered Species Act. Species preservation declared in the national interest should be a national expense.

2. Voluntary incentives must be given willing landowners who manage for species protection. We propose a Critical Habitat Reserve Program outline in the material submitted for the record.

3. Any determinations under the Act must be supported by sound scientific evidence endorsed by scientific peer review.

4. Proposed listings should be accompanied by a species management plan. Listing must be based on science, and the management plan must consider economic and social factors.

5. Mere modification of habitat should not be considered a taking under section 9 of present law. Private landowners must not be prevented from making use of their property.

6. Before any action is taken under the Act, the applicable Federal agency must determine that the benefits of the proposed action outweigh its costs.

7. The listing of subspecies or distinct populations should be limited to only those cases where listing is necessary for the survival of the species as a whole.

8. The Act must provide to people whose economic interests have been adversely affected by any ESA action the same standing and access to administrative or judicial review of ESA actions as is now provided to those seeking greater species protections.

9. The Act should prohibit the filing of citizen suits against private landowners by private advocacy organizations.

10. Landowner actions or activities that have minimal or no adverse impacts on listed species should be categorically excluded from section 7 consultation requirements and section 9 taking requirements.

11. Different protections should be afforded species that are listed as "threatened" than for those listed as "endangered." Protections and prohibitions applicable to threatened species should be published on a case-by-case basis as part of the final listing rule.

12. Private applicants for Federal permits or licenses should be allowed to actively participate in any consultation required by section 7 of the Act.

13. The purposes and provisions of the Endangered Species Act should have no greater or lesser importance or priority than the duty or responsibility of any Federal agency. Under the current administration of the Act, Federal agencies are often prevented from performing their statutory duties and functions because of requirements imposed by the Endangered Species Act. Any conflict between the Endan-

gered Species Act and the mission or statutory responsibility of any Federal agency should be resolved by the President.

Enactment of these provisions will move the Act back toward accomplishing its primary purpose, the recovery of species in danger of becoming extinct. Moreover, it will accomplish this purpose without creating the bitterness that has marked the listing of some species.

We believe the Act can be saved, and made to be more effective. Changing the focus of the Endangered Species Act from a negative club to positive incentives is a key element of this process. People have to respect and protect species because they *want to*, not because they *have to*. A big part of this attitude transformation is a recognition and respect of private property rights in the Act and by those administering it.

AMERICAN FARM BUREAU FEDERATION,
Washington, DC, August 15, 1995.

Senator FRANK LAUTENBERG,
U.S. Senate, Washington, DC.

DEAR SENATOR LAUTENBERG: Several weeks ago, during a hearing of the Senate Environment and Public Works Committee, you asked me several questions regarding the policy of the American Farm Bureau Federation on compensation to property owners who have lost property values under the Endangered Species Act. As part of our exchange on "takings", you asked if property owners did not, at times, benefit from "givings." I believe you used the construction of a highway as an example where a property owner could see an increase in the value of his land. I want to take this opportunity to further explain our position on this issue.

We believe strongly that our Constitution protects the rights of Americans to own and use their property. When that use is denied for the public good—whether it be for a highway or to save an endangered species, there is a cost to the property owner. We believe that in both cases, the property owner is due compensation for loss. Unfortunately, only in the first case is that compensation recognized by our government as reasonable. Obviously, this issue of "takings" will be much debated in the months to come as the Congress addresses reauthorization of the Endangered Species Act and the Clean Water Act. We hope that you will recognize the fact that if endangered species protection is deemed a public benefit, the costs should be borne by the public, and not a few private landowners on whose property the species is found.

It is unfortunate that "takings" and "givings" are discussed as part of the same issue. The government "givings" concept is not rooted in the Constitution.

Bruce Yandle, Alumni Professor of Economics and Legal Studies at Clemson University, puts it this way: "In contrast, if a highway is built near the owner's land, and her land increases in value, the owner has received no property *rights* [emphasis added]. She has no legal right to stop a later decision to relocate the highway. She has simply won a lottery. If a regulatory decision is made to close the highway due to congestion or flooding, and the landowner's property values fall by 50 percent, that is no taking and no compensation is due. Payment is required when rights are transferred, not when luck of the draw affects values."

Senator Harkin raised the "givings" and "takings" issues at a Senate hearing concerning the 1995 farm bill. He correctly observed that if payments to agricultural producers were reduced, that would have an impact on land values because some portion of the yearly payments has been capitalized into the value of land. That would certainly cause hardship for those producers, but it is not a takings as defined by the Constitution. There is no constitutional right to receive farm program payments.

Farm Bureau believes that there are many cases where property owners gain value in their land through the actions of the Federal Government. But nowhere are those gains deemed to constitute "property rights." That is the crucial issue in this debate.

Thank you.

Sincerely,

CARL B. LOOP, JR.
Vice President,
American Farm Bureau Federation.

STATEMENT OF JAMES M. SWEENEY, MANAGER, WILDLIFE ISSUES CHAMPION INTERNATIONAL CORPORATION

INTRODUCTION

Mr. Chairman, members of the Committee, thank you for the opportunity to testify today as you examine the role of incentives to private landowners in the implementation of the Endangered Species Act on private lands. I am Dr. James Sweeney, Manager of Wildlife Issues for Champion International Corporation. I am a Certified Wildlife Biologist with a Bachelors of Science in forestry, and a Masters and Ph.D. degrees in wildlife management. Before coming to Champion, I was a professor of Forestry and Wildlife at the University of Arkansas, Principle Wildlife Scientist for the Forest Service's North Central Forest Experiment Station, Coordinator of the Forest Service's international cooperative research program, and Director of Wildlife and Fisheries Ecology at the American Forest & Paper Association. Throughout my career, as a teacher, scientist, and research administrator, I have focused on the relationship of forest practices to wildlife and their habitats. That continues to be my focus with my current position at Champion.

Champion International Corporation is one of America's leading manufacturers of paper and wood products. We employ over 18,000 people at facilities across the country. Our paper is used for business communications, commercial printing, publications, and newspapers. We also manufacture pulp, as well as lumber, plywood, studs, and specialty wood products. At the end of 1994, Champion owned or controlled more than 5 million acres of forest lands in the United States, making us one of the nation's largest private landowners.

I am also here as a member of the recent Keystone dialogue on Incentives for Private Landowners to Protect Endangered Species. In my remarks I would like to offer both a brief report on the Keystone dialogue, and a short statement on Champion's view that incentives, while important, are but one part of a much broader reform that needs to be undertaken during reauthorization of the Endangered Species Act.

Attached to my statement are the full report from the Keystone dialogue, and Champion's issue paper on "Reform of the Endangered Species Act."

KEYSTONE DIALOGUE REPORT

As a non-profit organization that facilitates national and international consensus-building policy dialogues, The Keystone Center brought together over 30 key individuals from, among others: environmental, mining, ranching, and agriculture organizations; non-industrial private landowners groups; forest products companies; and Federal and State agencies. The objective of this Dialogue was to develop a compendium of proposals that might serve as incentives (or conversely remove disincentives) to private landowners to voluntarily contribute to the conservation of threatened and endangered species.

Dialogue participants agreed that conserving threatened and endangered species is an important national goal, but that species protection is a public concern and should not unfairly burden individual private landowners. The proposed incentives address, in part, this fairness concern.

The dialogue process generated a package of 19 potential incentives ranging from those that may be attractive to small non-industrial landowners, to those that might appeal to State or local governments, or to large corporate landowners. Some of the incentives are essentially revenue neutral, some have the potential to generate revenue, while others will require that some mechanism be developed for additional funding. The Final Report represents a compendium of ideas that range from pre-listing to post-listing situations; from those that improve regulatory certainty to those that address regulatory flexibility.

The proposed incentives have been grouped into three general topics:

1. *Increasing voluntary participation in endangered species conservation*

Examples in this category include:

- pre-listing conservation agreements,
- "no take" cooperative agreements,
- technical assistance and other guidance to landowners at the time of listing, and
- the provision of some form of a regulatory safety net for landowners who voluntarily enhance or create favorable habitat (commonly referred to as Safe Harbor).

2. Habitat conservation planning

Examples here include:

- streamlining the habitat conservation planning process by providing a short form Habitat Conservation Plan (HCP) for low-impact situations;
- removing duplicative National Environmental Protection Act requirements;
- providing seed money for community HCPs; and
- implementing a "no-surprises" policy.

3. Financial Incentives and resources

Examples in this category include such things as:

- Delaying estate taxes when the estate is managed to provide beneficial threatened or endangered species habitat;
- providing tax credits for habitat management practices beneficial to threatened or endangered species; and
- creating a threatened or endangered species habitat trust fund.

The report is best viewed as a menu of potential incentives. Each incentive was developed to stand alone. However, depending upon the needs of the landowner and of the species, two or more of these incentives may be used together to customize a cooperative package best suited for a given situation.

The dialogue group reached consensus on 18 of the 19 incentives discussed in detail in the final report. Consensus in this case means that participants of the dialogue could *live with* the incentive being proposed. Individual participants therefore might support some of the proposals more than others.

Even in the case of the one incentive offered for which consensus was not reached, the disagreement centered on how the incentive should be offered, not on the basic idea. One participant felt the Safe Harbor initiative—that private landowners be given some form of regulatory protection if they maintained, enhanced, or created habitat that might then attract listed species—should be offered as a pilot effort instead of a full scale initiative. All the rest of the participants supported the Safe Harbor initiative without this constraint.

The Dialogue Group operated under a short timeframe, meeting on two separate occasions, for 2 days each. Given the short timeframe, the Dialogue Group had to remain focused on the incentives package. Items that were outside our specific charge, or that were too complex or controversial to be handled succinctly, were dismissed. Unfortunately funding mechanisms fell into this category. The potential revenue generating mechanisms that were discussed, but for which no consensus could be reached included:

- increased concessionaire fees at Federal parks and refuges;
- increased user fees at Federal parks and recreational facilities;
- a manufacturer's excise tax on certain recreational equipment; and
- a Federal real estate transfer tax of some type.

Members of the dialogue, while bringing the perspective of their employers to the table, participated as individuals. Endorsement of this report by the participating individuals does not necessarily imply support by the organizations with which they are affiliated.

CHAMPION'S VIEW ON INCENTIVES[1]

The provision of incentives for private landowners to voluntarily enter into the conservation of threatened and endangered species is an important topic. But, it is a topic that needs to be addressed within the broader discussions on reauthorization of the Endangered Species Act. Incentives should help provide some level of certainty and some degree of flexibility on how, when, and where a private landowner interacts with the ESA.

However, it is very important to understand that incentives are not the end-all solution to conflicts arising from implementation of the Endangered Species Act on private lands. They are only one element of a much needed review and revision of the Act. Other topics that should be addressed by Congress under reauthorization include:

- the need to improve the scientific base for listing, recovery, and delisting decisions; by requiring the use of all applicable scientific data and the application of rigorous scientific standards to the data used; by requiring additional research be undertaken when existing data are inadequate; and by requiring outside peer review

[1] Champion's position on reauthorization of the Endangered Species Act is presented in the "Champion Issue Paper" on "Reform of the Endangered Species Act" appended to this statement.

as a standard part of the process in developing reports, drawing conclusions, and reaching decisions;

- the need to have adequate flexibility (multiple management alternatives) in recovery plans to reflect economic and other realities, and to balance competing concerns;
- the need to have specific goals in recovery plans, complete with specified steps for delisting once recovery goals are met;
- the need to provide compensation to private landowners when the value of their land is significantly diminished as a result of the ESA;
- the need to clarify the role of habitat modification on private lands as it relates to "take." Habitat modification, absent clear evidence of actual injury, should not be the basis for actions against private landowners; and
- the need to be fiscally responsible. Funding is not infinite and must be prioritized. Some process must be developed that examines the relative biological significance and ability/probability of the species in question to recover, and evaluates that against the needs of other species and the economic costs associated with recovery.

While incentives address some of these issues, they will provide at best only a partial solution. For example, the full package of incentives could reduce the number of times compensation might be requested, yet doesn't decrease the need for compensation being an option.

A second example would be the concerns related to the scientific underpinnings of the Act. The incentives offered do request that science be used to provide greater clarity on what habitat modifications may or may not lead to a "take." And, they also encourage increased specificity of recovery goals and delisting parameters. However, they do not address such essential factors as peer review, the identification of assumptions, and the scheduling of research to address those assumptions.

In summary, Congress must enact legislation that not only incorporates appropriate incentives for private landowners, but which also addresses the broader ESA concerns. The proposed incentives are only meaningful when done in this larger context. Only when the ESA works well on both public and private lands, will it be able to achieve its important goals of conserving threatened and endangered species.

RESPONSES BY JAMES M. SWEENEY TO QUESTIONS BY SENATOR LIEBERMAN

Question 1. Your group examined a number of alternatives for incentives under ESA. Are there others that should be considered? Can you give some examples?

Answer. The Keystone group began its deliberations with an open brainstorming session in which all ideas, no matter how seemingly wild, were listed for consideration. Because of the short time available to complete our efforts, this list was quickly reduced by removing items that were obviously beyond resources (much too costly, too complex, demanding biological data not available, etc.), or were too controversial (different participants at extreme odds). The report therefore presents a collection of incentives the group as a whole could accept, and which we felt were to some extent achievable. As new ideas are always being generated, it was/is not an exhaustive list.

As a representative of a large landowner, I would also suggest that compensation be considered as an incentive. I do not ask that it be offered in full, in all cases; rather, that compensation be one part of a larger implementation package, much like the program proposed by the Society of American Foresters' Task group on ESA Reauthorization.

Question 2. In general, did you attempt to examine the full range of Federal programs, including those outside ESA but under other Federal statutes?

Answer. No we did not. While our discussions often briefly included other Federal programs and regulations, we made every effort to quickly return our focus to the ESA because of severe time constraints. Examining the ESA was enough of a challenge to complete in only 2 days!

Question 3. Did you consider the full range of private alternatives and market-based incentives?

Answer. As noted above, we tried to be all inclusive at the start, but quickly reduced our discussions to those alternatives for which we had consensus. Given this fact, and the fact that new ideas are being generated on a regular basis as we gain experience from the cooperative agreements now being initiated between private landowners and regulatory agencies, it would be incorrect to consider the Keystone report as the "full range" of incentives.

Question 4. Do you think voluntary incentives can effectively replace regulatory authority under ESA? Will regulatory authority and incentives work best when combined under ESA, or when implemented separately and in isolation?

Answer. All members of the Keystone dialogue believed voluntary incentives can be effective (perhaps even more effective) than some regulations in meeting the conservation needs of listed species. I also believe that most of us held our discussions under the assumption that these incentives would operate in combination with some regulations, and as part of the ESA.

As a private corporate landowner we would like to emphasize the need for incentives, and not because, as many critics say, "we want to be paid for everything." Many incentives are really just the removal of disincentives (Safe Harbor is a good example) and can be implemented with little or no cost particularly by larger landowners. Other incentives such as technical aid and financial assistance (even if limited or partial) would help the small non-industrial private landowner meet the public's needs or objectives. Most private landowners enjoy and respect plants and animals like everyone else, want to help conserve rare species, and will if given the opportunity.

Question 5. The Wildlife Management Institute (WMI) recently released a report entitled "How much is enough: A regional wildlife needs assessment for the 1995 Farm Bill" WMI contends that many declining species of wildlife could be helped by a properly targeted Conservation Reserve Program (CRP).

What is your reaction to WMI's analysis—how much of an impact could a targeted CRP program have on preventing the further decline of species on or near farmland?

Answer. The Keystone report does recognize the CRP as already having benefited threatened and endangered species, even though it was not originally implemented as an endangered species program. The Group's recommendation was to increase the endangered species conservation benefits of the existing program, and to establish a similarly structured new program that would be open to all private landowners (participation in the current CRP being limited).

Question 6. Would it help the Habitat Conservation Plan (HCP) process?

Answer. No. The HCP process is a distinct part of the ESA designed to provide a voluntary avenue for the private landowner to seek incidental take protection. A landowner would only do this if sufficient numbers of listed species were present (as listed species are the only ones subject to "take") which posed a potential conflict with the landowner's management practices. The CRP could include the development or maintenance of unoccupied habitat, and should include a safe harbor. These are two completely different devices, and should remain so.

Question 7. The U.S. Fish and Wildlife Service (FWS) reports that one third of all threatened and endangered species are wetlands dependent. The Center for Marine Conservation reports that this figure increases to 43 percent when candidate species are included. Yet, incentives for wetlands and wildlife habitat may not be up to the task. For example, enrollment requests for the Wetlands Reserve program (WRP) outstripped appropriation by a factor of 8 during the last 5 years.

How much of an impact could a targeted WRP program have on preventing the further decline of species on or near wetlands? What impact would full funding have?

Answer. This was not discussed by the Keystone group.

However, as a biologist and a representative of a private landowner, would recognize that wetlands are often key habitats for wildlife species, including some that are considered threatened or endangered. A targeted WRP would therefore likely improve T&E species conservation. An example of an ongoing project with significant beneficial implications for wildlife using WRP funds is a wetland reforestation project in the Mississippi Delta. This effort involves reforesting marginal agricultural land in the lower Delta with hardwood trees. Programs like the WRP will encourage nonindustrial landowners to maintain or in some cases create forested wetlands—thus benefiting many wildlife species. But, any change in the WRP should look not only at the benefits that might accrue to listed species, but also at the cost (including loss of benefits) of redirecting those funds from other activities. Further, as a taxpayer, we stress that all endangered species conservation efforts must fall within the same fiscal review and constraints as any other Federal program if we are to ever achieve a balanced budget and reduction of the Federal deficit. Endangered species conservation is not without cost, and should not have an open ended budget.

Question 8. Would it help the HCP process?

Answer. No. See response to question 6. Again these are two separate devices, and should remain so.

Question 9. What effect would such a program have on helping financially needy wetland owners, and reducing private property conflicts.

Answer. This was not discussed by the Keystone group.

However, I believe it would provide additional incentives to landowners to maintain or even create forested wetland communities. But it must be recognized that not all wetlands would provide habitat for listed species. There must be some conservation benefit gained before an incentive is extended. Further, funds will likely be limited, and hopefully the objective would be species conservation not landowner financial assistance! As for reducing conflicts, any program that is based on voluntary, incentive based efforts, rather than increasingly complex and numerous regulations, would go a long way in reducing private property conflicts. Most private landowners want to do the right thing, and will if given the opportunity.

Question 10. The Stewardship Incentives Program (SIP) of the U.S. Forest Service provides cost sharing and technical assistance to private non-industrial forest landowners across the nation to encourage forest stewardship. A significant percent of declining species of plants and animals occur on these lands. Unfortunately, SIP has been zeroed out under House and Senate (proposed) appropriations.

If SIP eligibility and targeting were to include eligibility for habitat protection and restoration for declining plant and animal species, how much of an effect would this have on ESA habitat needs?

Answer. Although the Keystone group did not mention SIP specifically, we did recognize the need for "technical assistance" for private landowners, particularly the small non-industrial landowner. This could take the form of information, materials, on-site expertise, financial aid, etc.; and should be a coordinated effort between Federal and State agencies.

However, a private landowner and taxpayer, we must again argue for fiscal responsibility. Much can and should be done within current budgets. New programs, requiring additional Federal funds, should be carefully evaluated as to there real benefits and costs if we are to ever reach a balanced budget and reduce the Federal deficit.

Question 11. Would it help the HCP process?

Answer. No. See response to questions 6 and 8. Again these are two separate devices, and should remain so.

Question 12. Please comment on the potential of grant programs under the Clean Water Act for watershed protection, watershed restoration, and non point source pollution control to help declining species of animals and plants.

Can these programs assist the HCP process?

Answer. No. See response to question 6, 8, and 11. Again these are two separate devices, and should remain so.

Question 13. Can they assist private landowners?

Answer. The Clean Water Act (CWA) was not discussed by the Keystone group.

The Clean Water Act and the Endangered Species Act are two distinctly different laws, and should remain so. Both are highly complex and difficult to administer or implement. Tying the two together will present an administrative nightmare.

Question 14. Can they help Federal, State and local agencies?

Answer. This was not discussed by the Keystone group.

There is one additional point that, although touched on in the answers to your questions above, warrants specific mention. While incentives are a much needed addition to the ESA, they alone will not meet all the needed changes in the ESA. Dr. Robert Lee, a sociologist in the forestry department at the University of Washington, points out that in our democracy, one of the essential elements for successfully enlisting private landowners to work toward a common (public) goal of conservation is regulatory certainty. Whatever is done in the way of incentives, therefore, must have long-term staying power within our political system.

Some incentives do not have the long-term certainty that would encourage conservation. for example, financial incentives, whether they be tax credits, tax deductions, or direct funding at some level, are subject to political "adjustment" every 2 years. As such the long-term stability of such incentives is uncertain.

Some other incentives, such as those that address the removal of disincentives (e.g., No Surprises, and Safe Harbor), are more secure. In most cases these can be implemented without significant additional funding; and greater separation from the budget process provides greater long-term security.

STATEMENT OF MICHAEL J. BEAN, ENVIRONMENTAL DEFENSE FUND

The Environmental Defense Fund strongly urges the Congress to create new and effective incentive mechanisms to encourage and reward actions by private landowners and others that contribute to the conservation of endangered, threatened, and candidate species. In particular, we urge the Congress to consider carefully, and to support, the various recommendations recently put forward by the participants in the Keystone Center dialogue on endangered species incentives. In the testimony that follows, EDF seeks to do three things: first, to describe briefly the rationale and need for incentives; second, to underscore the significance and importance of the consensus reached by the Keystone participants; and third, to give a real-world example of how several of the incentive ideas discussed in the Keystone report can contribute dramatically to a more effective endangered species conservation effort.

THE NEED AND RATIONALE FOR INCENTIVES

In other areas of environmental policy, incentives are a commonly used tool to achieve congressional goals. We have, for example, incentives to encourage farmers to reduce soil erosion by planting trees or other perennial cover on highly erodible soils (the Conservation Reserve Program), incentives to encourage utilities to reduce their emissions of acid-rain precursors beyond the minimal levels required by law (the tradeable emission reduction credit provisions of the Clean Air Act), incentives to encourage communities in flood-prone areas to restrict development in areas of high hazard (the national flood insurance program), incentives to encourage the restoration of former wetland sites (the Wetlands Reserve Program), and incentives for owners of small forest tracts to improve the management of their forest resources (the Forest Stewardship Incentive Program). It is striking, therefore, to observe that we lack any clearly articulated incentives for private landowners or others to take actions that would contribute positively to the conservation and recovery of endangered species.

To achieve the goals of the Endangered Species Act, we have thus far relied almost exclusively on the "stick" of penalties and prohibitions to deter harmful conduct, and have generally neglected the "carrot" of incentives to reward beneficial conduct. The shortcomings of this "all stick and no carrot" approach are evident. The stick does not always work, and it is often resented. Moreover, even if it did always work, at best it would only preserve the status quo. Thus, ultimately, the most significant shortcoming of an all stick and no carrot approach is that it misses the opportunities to improve upon the current situation by giving landowners an incentive to create or restore habitat that will aid in the recovery of imperiled species.

THE KEYSTONE CENTER DIALOGUE

The need for effective incentives to improve endangered species conservation has been widely recognized. However, most who have proclaimed a need for incentives have stopped there; few have taken the necessary next step of proposing specific and detailed ideas that move the discussion from abstraction to reality. Further, no effort to garner consensus on a set of concrete incentive proposals has been made—at least not until the Keystone Center convened a diverse group for that purpose.

Last week, the work of the Keystone Center dialogue group on incentives for endangered species conservation on private lands was completed. The group was comprised of highly knowledgeable individuals with widely divergent views on the Endangered Species Act. Although they participated as individuals, they were drawn from the ranks of mining, timber, small landowner, and environmental organizations, as well as State and Federal agencies. I am sure that this group could never agree on a comprehensive set of changes to the Endangered Species Act. It did agree, however, on a detailed set of recommendations to create incentives for endangered species conservation by private landowners. Significantly, it also was unanimous in its view that if the incentive recommendations it put forward were adopted and aggressively implemented, the result would be to narrow the arena of conflict over endangered species.

The logic behind this latter conclusion is compelling. The purposes of the Keystone recommendations are to encourage private landowners to restore or enhance habitat, to manage their lands in ways that aid in the recovery of endangered species, to take actions that avert the decline of species before they become endangered, and generally to become active partners in conservation efforts. If these purposes are achieved, the result will be the avoidance of conflict by heading off species decline, the speedier recovery (and consequent reduction of conflict) for species already endangered, and generally the creation of more options and more flexible strategies for meeting species conservation needs.

There is another very important lesson embodied in the Keystone report. If the Congress desires to continue its two decade old commitment to the conservation of endangered species, and if the Congress is to provide the tools needed to fulfill that commitment, then it must recognize the necessity of going beyond the four corners of the Act to achieve those goals. Significantly, most of the recommendations of the Keystone group do not involve amending the Endangered Species Act itself. Rather, they focus on changes in the tax code, farm programs, and restrictions applicable to the exchange and disposal of Federal lands, among other things. The Keystone group fully recognized that its recommendations cut across the jurisdictional boundaries of numerous congressional committees. If the balkanization of jurisdiction among congressional committees becomes a barrier to pursuing a comprehensive set of incentive recommendations, then the opportunity to achieve solid gains for both landowners and species will have been missed.

INCENTIVES IN PRACTICE: THE NORTH CAROLINA SANDHILLS

The concluding part of this testimony is intended to illustrate the enormous potential for real-world gains that many of the Keystone recommendations entail. That potential is particularly evident in the Sandhills area of North Carolina. For the past 2 years, EDF has worked extensively in this area, seeking an incentive-based strategy for conserving the longleaf pine ecosystem that remains in the Sandhills and the endangered species that is emblematic of that ecosystem, the red-cockaded woodpecker. Our work gave us a far better appreciation of the enormous potential of many incentive ideas, and it also served to inform the other Keystone participants of the practical value of those ideas.

The North Carolina Sandhills occupy parts of six counties in the south-central part of the State. The area is noteworthy because of its extensive remaining stands of longleaf pine. The longleaf pine forest ecosystem is one of the most imperiled natural communities in North America. Historically, the natural range of the longleaf pine stretched in a nearly continuous band along the Atlantic and Gulf coasts, covering an estimated 60 million acres of land. Today, fewer than four million acres of longleaf remain, and much of that is highly fragmented and degraded. The North Carolina Sandhills area is one of only a few areas where extensive stands of longleaf pine remain.

Because of its extensive longleaf stands, the Sandhills area is also one of the few remaining areas with a sizable population of red-cockaded woodpeckers, an endangered species. Probably more than 400 active family groups, or "clusters," of this species remain in the Sandhills. An unusual feature of this species is that it typically lives in small family groups and is highly territorial, continuously occupying the same cluster site for years or even decades. A key requirement is that cavity trees in the cluster site must be live, and they must be quite old, typically at least 80 years old in the Sandhills. In addition, the area occupied by the birds must be dominated by pine and relatively free of oaks and other hardwoods, conditions that naturally existed because of frequent fires that suppressed hardwood growth and facilitated pine regeneration.

The red-cockaded woodpecker was among the species protected by the nation's first bird conservation law, the Migratory Bird Treaty Act of 1918. That early law sought to arrest the decline of many of our nation's native birds by controlling their hunting. Thus, since 1918, it has been a Federal offense to shoot or capture a red-cockaded woodpecker. More than half a century of such protection, however, did little to stem the decline of this species, for it was not hunters who threatened the bird's survival, but rather habitat loss.

By 1970, it was clear that the forces that were so radically altering the pine forests of the Southeastern coastal plain imperiled the future of the red-cockaded woodpecker. In that year, the red-cockaded woodpecker was designated an endangered species. Despite a quarter century of protection as an endangered species, however, the red-cockaded woodpecker continues to slip inexorably toward extinction. Estimates of red-cockaded woodpecker numbers all point to continued decline, particularly on private land, where 75 percent of all suitable nesting habitat was thought to occur as of the early 1980's. Ornithologist Frances James estimated that from the early 1980's to 1990, the total population of red-cockaded woodpeckers declined by at least 23 percent. On private lands, the decline was even more dramatic: 34 percent.

The reasons for the decline of the red-cockaded woodpecker on non-Federal land, despite the nominal protection of the Endangered Species Act, are not difficult to discern. In brief, while the Act prohibits activities that harm the woodpeckers that exist today, and the habitat that they currently use, it does not compel action that will provide for their needs in the future. As noted above, the bird requires very

old pines in which to excavate its nest cavities. After the intensive logging early in this century, few pines of sufficient age remain. As those few trees are lost to wind, lightning, disease, or other causes, there is an ever-diminishing supply of suitably aged trees to take their place, particularly when profit-maximizing timbering strategies dictate cutting trees well before they reach sufficient age to be used as cavity trees. If fire is excluded from the cluster site and no other form of understory control is used, hardwoods will eventually encroach upon the pines, competitor species that flourish in hardwoods will displace the red-cockaded woodpeckers from their cavities, and the cluster site will be abandoned. Once abandoned, nothing in the law protects the cluster site; if it is cut, the old trees within it will be gone, and the future supply of potential cavity trees diminished still further.

Many of the same processes can lead to the loss of suitable foraging habitat, which woodpecker groups require to supply their food needs. As the total amount of suitable foraging and nesting habitat declines, that which remains becomes fragmented and the birds within those habitat fragments become isolated from each other. Isolation sets in motion its own destabilizing forces. Small, isolated populations are vulnerable to severe storms, imbalance in the number of male and female offspring, and other chance events. If such a population is lost, the isolation of the now empty habitat makes it unlikely to be reoccupied by other populations. Even if small, isolated populations beat the odds and persist for a long time, their small size makes them vulnerable to a variety of genetic problems.

It is important to keep in mind that all of the factors described above can operate even if the Endangered Species Act is assiduously enforced and landowners scrupulously adhere to its requirements. The reality, however, is that enforcement is difficult at best and compliance undoubtedly less than complete. To an unknown degree, some lawful private land management practices may even be motivated by a desire to preclude utilization of land by red-cockaded woodpeckers.

These difficulties explain the continuing decline of the red-cockaded woodpecker on private land, despite a quarter century of nominal protection as an endangered species and despite the seemingly stringent requirements of the Endangered Species Act. They also explain why the U.S. Fish and Wildlife Service's official recovery plan for the woodpecker proposes to achieve recovery almost entirely on public land and "presumes a low probability of concerted habitat management on private lands." The irony of this approach is that the overwhelming majority of the bird's original range is in private ownership; most of the habitat that could, with proper management, support red-cockaded woodpeckers today is in private ownership; and the opportunity costs associated with red-cockaded woodpecker management on at least some private lands may well be lower than those on some of the public lands where recovery is to be pursued.

One further irony of this approach is evident in the Sandhills. For many years, the Sandhills population of red-cockaded woodpeckers has been declining and the area it occupies has been steadily shrinking inward. The core of that area is Fort Bragg Army base, which now hosts about three-fourths of the remaining woodpecker population. If current trends continue, the result will be that all the remaining red-cockaded woodpeckers in the Sandhills population will live on Fort Bragg. Should that occur, the already challenging task of protecting the bird while simultaneously carrying out needed military training activities there will become vastly more difficult.

"SAFE HARBOR"

Because of EDF's work, there is now a real prospect that the long decline in the population of red-cockaded woodpeckers on private land in the Sandhills may be reversed. For the first time in decades, the population of this endangered species on private lands in the Sandhills may be about to increase. This hopeful scenario has been made possible by using the existing mechanisms of the Act to provide an assurance of "safe harbor" from added regulatory burden to landowners who agree to undertake habitat improvement activities.

Throughout the Sandhills, there are many formerly occupied cluster sites that are now abandoned by the birds either because of hardwood encroachment on the site or other problems. It has been clearly demonstrated that if these sites are "rehabilitated," red-cockaded woodpeckers will reoccupy them. "Rehabilitation" typically includes removal of the hardwood understory, and may also entail repairing the entrance hole to a nest cavity. Although these conservation techniques are neither technologically challenging nor necessarily very expensive, very few landowners in the Sandhills were willing to undertake them. Part of their reluctance was based on the desire to avoid incurring an obligation to maintain habitat indefinitely if a rehabilitated site were in fact reoccupied by red-cockaded woodpeckers.

We recognized that in order for landowners to undertake the sort of habitat improvements that would provide benefits for this species, they needed an assurance that would be able to "undo" those improvements in the future without serious restriction. How to give them that assurance within the framework of the existing law was the question we tackled. The solution we identified and helped bring to fruition was a creative use of Section 10 to provide participating landowners with future incidental take authority on habitat they improved.

The response to this idea on the part of local landowners and allied interests has been extremely positive. The Sandhills Area Chamber of Commerce has heaped praise upon it. The North Carolina Pine Needle Producers Association, a local small landowner organization, has worked closely with us to disseminate information about the safe harbor agreement to interested landowners. And there are many interested landowners. At present, according to the U.S. Fish and Wildlife Service, there are 12 agreements currently being negotiated encompassing over 15,000 acres of private land. When the habitat improvements on these lands are carried out, they are expected to result in more than 30 new woodpecker groups, a nearly 10 percent increase in the entire Sandhills population. No other conservation strategy has ever achieved comparable results in the Sandhills.

In situations like that of the Sandhills, safe harbor agreements offer significant conservation benefits. They are not, by themselves, a panacea. The habitat improvements they bring about may be short-lived. There are also legitimate concerns about their potential for attracting imperiled species away from existing habitat and to new habitat that enjoys no legal protection. All of these concerns and others were recognized and addressed in the Sandhills agreement. There may be circumstances, involving other species with other needs, where on balance a safe harbor agreement would not serve a useful conservation purpose. The Keystone report recognizes that fact and therefore stops short of recommending that safe harbor agreements be pursued for all species everywhere.

ESTATE TAX CHANGES

Two of the recommendations of the Keystone report focus on the pernicious effects of Federal estate taxes for conserving endangered species habitat. Here again, EDF's work in the Sandhills brought home vividly how our estate tax laws may be working at cross purposes with the Endangered Species Act.

While our project was underway, the owner of one of the largest and most environmentally significant forest tracts in the Sandhills died. The "McCormick" tract is a several thousand acre parcel on the boundary of Fort Bragg Army base. It contains significant acreage of old longleaf and loblolly pine forest and supports a number of active and formerly active red-cockaded woodpecker colonies. In addition to its substantial longleaf stands, the tract in question also contains a number of unusual natural communities. A survey of longleaf pine tracts undertaken for the North Carolina Natural Heritage Program several years ago identlfied the McCormick tract as the second most important privately owned parcel in the Sandhills. The parcel has long been managed with sensitivity to its unusual ecological value.

The death of the owner of the tract has placed its future in doubt. The tract has been valued by the Internal Revenue Service according to its development potential. The resulting estate tax liability has forced the heirs to consider liquidating most of the land's timber assets, thereby destroying most of its ecological significance. A representative of the estate has sought and received clearance from the U.S. Fish and Wildlife Service to harvest essentially all the trees on the tract save for those that must be maintained to provide nesting and foraging habitat for the active red-cockaded woodpecker colonies currently on the property. Reportedly, were it not for the need to pay the Federal estate tax bill, the heirs of the property would not be considering the major logging plans described, but would instead continue the sensitive management that has been in place heretofore.

Situations like this illustrate the need for estate tax changes like those recommended in the Keystone report. The Keystone participants recommended two changes. One would allow the executor or heirs to make a gift of a conservation easement after the decedent's death, and thereby exclude from the value of the estate the value of the easement. The other would allow the heirs to defer the estate taxes otherwise due on a parcel of land subject to an endangered species cooperative agreement for as long as they honored the terms of that agreement. Thus, it would be a means of securing significant endangered species conservation benefits without requiring the heirs to convey a permanent property interest. The Keystone participants believed these recommendations would give a powerful incentive to farmers, ranchers, non-industrial forest owners and others who may be "land rich and cash poor" to look for ways to improve the conservation of endangered species on their

land. A preliminary economic analysis, the results of which are included in the Keystone report, suggests the costs to the Treasury would be very small.

CONSERVATION RESERVE PROGRAM ADJUSTMENTS

The Keystone group also recognized the potential to secure increased endangered species conservation benefits from the Conservation Reserve Program ("CRP") without changing its basic purpose. The CRP was established by the 1985 Farm Bill. The CRP was intended to provide incentives to farmers to "retire" highly erodible, marginal cropland by establishing permanent cover. Cropland may be retired by planting trees, establishing permanent wildlife habitat, introducing native grasses and other plants, or some combination of activities.

The USDA reimburses up to 50 percent of the cost of establishing permanent cover, and pays an annual "rental" fee to participating CRP landowners. To participate, landowners must agree not to use the retired land for grazing, harvesting, or any other commercial purpose, other than hunting, during a 10-year enrollment period.

The CRP has been a popular program among farmers throughout the nation. Nationwide, more than 36 million acres have been enrolled in the program, roughly twice the acreage of the entire National Wildlife Refuge System in the lower 48 States. In the six counties comprising the Sandhills, a total of 13,641 acres have been enrolled in the CRP. More than 80 percent of this acreage (i.e., 11,193 acres) has been planted in trees.

The eventual cost of existing CRP contracts in the six Sandhills counties will be nearly $7 million. Annual payments to participating landowners have been as high as $50 per acre. Despite the substantial public investment in the CRP in the Sandhills, it may ultimately be of very little conservation benefit to the red-cockaded woodpecker. One reason for this conclusion is the very small size of most of the participating areas. Of 642 CRP contracts in the above six counties, only one is for an area in excess of 300 acres, and only eight are for areas in excess of 100 acres. The average contract in the Sandhills applies to only 21 acres. By themselves, areas of that size are too small to serve as foraging or nesting habitat for the woodpecker; only if they are contiguous to larger forested areas could they contribute to meeting the bird's habitat needs.

Most of the Sandhills area lands in the CRP were enrolled during the period 1986–88, and the 10-year contracts for those lands will begin expiring in 1996, when contracts covering some 1,170 acres will expire. In 1997, contracts covering some 3,438 acres are scheduled to expire. Whether these contracts will expire, be renewed, or be renegotiated will likely depend upon what Congress does this year.

In the Sandhills, targeting of the CRP to achieve the most potential value for the red-cockaded woodpecker would put a priority on renewing contracts that entail planting trees rather than grasses. Among contracts that entail tree planting, the highest priority should be placed on the contracts encompassing the largest areas, as well as contracts for smaller areas when those smaller areas are either contiguous to, or located between, Fort Bragg and the Sandhills Gamelands, or contiguous to other large forested areas where red-cockaded woodpecker conservation efforts are being carried out. Similar priorities should govern any new enrollments in the program, if new enrollments are to be permitted. Finally, EDF's economic analysis suggests that an annual payment of $50 per acre is substantially in excess of what would be necessary to cover the opportunity cost of a forest landowner for managing to meet the needs of the red-cockaded woodpecker. Hence, it may be possible to achieve better targeted endangered species conservation results at substantially less total and per-acre cost than has been the case to date.

Because the minimum age of pine stands that serve as foraging habitat for the red-cockaded woodpecker is at least 30 years, lands enrolled in the CRP are still more than two decades away from being able to contribute to the conservation of this species. Thus, renewal of existing contracts for a further period of 10 years will not, by itself, assure any endangered species conservation benefit. However, such renewal may provide an opportunity for the Fish and Wildlife Service or others to "piggy-back" on the CRP renewal an easement or other agreement governing forest management practices over a longer period. The incremental cost of such an agreement to the government is likely to be very small.

CONCLUSION

The conservation of the red-cockaded woodpecker in the Sandhills of North Carolina is an attainable goal. Achieving that goal will also help sustain much of the remaining longleaf pine forest that has given the area its beauty and environmental uniqueness. New and more effective conservation tools can be designed to achieve

these noteworthy aims. The consensus recommendations of the Keystone dialogue on incentives for endangered species conservation include many that would have a dramatic, positive impact on conservation efforts in the Sandhills.

STATEMENT OF MIKE WHITE, VICE PRESIDENT AND GENERAL COUNSEL OF HECLA MINING COMPANY

INTRODUCTION

Good morning. My name is Michael White. I am the vice president and general counsel of Hecla Mining Company (HECLA), headquartered In Coeur D'Alene, Idaho. HECLA is a 105-year-old mining company that historically has been a base and precious metal producer. Many of our mining operations are located in the western United States where the Federal Government owns approximately one-half of the lands. We have experienced the harsh consequences of the current Endangered Species Act (ESA), and I hope you will find our observations and suggestions for reform useful.

We support ESA reform to provide for the protection of endangered species in a manner consistent with the needs of this Nation and the citizens who work and live here. Currently, the law is being construed so broadly by courts and Federal agencies that it has effectively preempted Congress' multiple-use management mandates that were enacted to ensure that the Federal lands provide a wide variety of public resources. Under these interpretations of the ESA, the Federal lands are increasingly being closed to public uses in direct contradiction to the governing Federal land management statutes.

Before addressing some of the specific portions of the ESA that we believe need revision, I would like to briefly stress some unique and important aspects of the mining industry that are frequently overlooked when enacting and reforming laws like the ESA. First, like most natural resources, the industry does not choose the location of ore deposits. Geologic processes that occur over several millennia determine where ore deposits are situated. Sometimes these ore deposits occur in remote environments on public lands. Second, a healthy and viable domestic mining industry is essential to the continued vitality of this country's economy. I have enclosed copies of industry data that show the significant volume of natural resources this country consumes on a daily basis. Third, in the past, the United States has been an attractive investment opportunity for the mining industry due to its stable political, economic and legal structure. However, the unpredictable and burdensome impacts of laws like the ESA create an unfavorable and unstable business climate and make long term investments in domestic mineral exploration and development very difficult. As a result, companies are increasingly turning their attention overseas where protection of the environment is of paramount concern but, where the risks of working within an international political climate are, in many cases, considered more predictable than the risks of delay and litigation under certain U.S. environmental laws, such as the ESA. The ESA, more than any other law, has been used as a weapon by special interest groups not to protect truly endangered species, but to deter, and in some cases, stop economic development on public and private lands in this country.

COMMENTS ABOUT THE CURRENT ESA—SUGGESTIONS FOR REFORM

With that brief introduction, I would like to point out some specific difficulties our industry has with the ESA. Because so much of the domestic mining activity centers around the one-third of this Nation's lands that are owned by the Federal Government, I will focus my comments on Section 7 of the ESA.

Section 7(A) of the ESA requires each Federal agency, in consultation with the U.S. fish and Wildlife Service or the National Marine Fisheries Service, to insure that its actions are not likely to jeopardize the continued existence of any threatened or endangered species or result in the adverse modification of a listed species critical habitat. Anytime a company seeks to pursue an activity requiring Federal approval, it must await agency compliance with Section 7. The regulations implementing Section 7 provide a complex procedural framework for Section 7 consultations that requires the preparation of various agency analyses, such as biological assessments and biological opinions, and requires various inter-agency communications and determinations. agency compliance with these procedures often takes an extensive amount of time and substantially delays project approval. In addition, once the lengthy consultation process is complete, project opponents may legally challenge the agencies' compliance with the Section 7 procedures, thereby further delaying a proposed project for an indefinite time or causing a fully-permitted

project to be stopped dead in its tracks after several years of planning and permitting and significant financial investments. In short, any time someone proposes any action requiring Federal approval, such as a mining-related activity on Federal lands, they face a potentially long and uncertain bureaucratic process under the ESA that may ultimately sink the proposed project, without any measurable benefits to endangered species.

The adverse effects of Section 7 on this country's business climate have been exacerbated by broad judicial and administrative interpretations of the statute, which have made the Section 7 process unworkable and bad policy. In the context of mining activities on the Federal lands, three factors have contributed to the current dilemma.

First, The courts have held that agency adoption of Federal land management plans and other similar broad management guidance documents requires Section 7 consultation, even though those documents do not actually authorize any on-the-ground activities and the responsible agency has committed to pursue Section 7 consultation before authorizing any actual activities. This interpretation has created a redundant and multi-tiered consultation process, which serves only to delay proposed activities, not to protect species.

Second, the entire Section 7 process may be repeatedly triggered anytime a new species is listed, upgraded or critical habitat is identified in the vicinity of a project, or merely because new information concerning a previously considered listed species becomes available. Consequently, every time a new species is listed, new critical habitat is designated, or other new information concerning a species is generated, the responsible agencies must reinitiate consultation at all agency levels. The on-the-ground results can range from an indefinite shut-down of an ongoing project into which millions of dollars have been invested while the agencies attempt to complete a new round of consultation, to the imposition of costly new design and operating restrictions after project construction has been completed. With new species and critical habitat being designated each week, these ongoing consultation requirements create a totally unpredictable environment for conducting business.

Third, some courts have enjoined fully approved and permitted projects based upon assertions by project opponents that the responsible agencies failed to comply with some technical aspect of the Section 7 consultation procedures, even though there is no evidence whatsoever that the project will have any adverse effect on a listed species or critical habitat.

Two recent Federal court cases from the pacific northwest illustrate these points. Certain species of salmon that inhabit the Snake River and some of its tributaries were listed as threatened and endangered in 1992 and 1993. In October 1993, several environmental groups sued in Oregon to enjoin proposed and ongoing projects (principally logging and road building activities) within two national forests in Oregon, until the Forest Service and National Marine Fisheries Service completed new Section 7 consultations on the previously-adopted forest plans. Ultimately, The Oregon district court and the Ninth Circuit Court of Appeal enjoined all proposed and numerous ongoing activities until the agencies completed new consultations on the forest plans.

Having succeeded in Oregon, some of the same environmental groups sued in Idaho to enjoin all proposed and ongoing activities, including mining, in six national forests in Idaho until the Forest Service and NMFS completed new consultations on those forest plans. The district court, following the Oregon cases, granted the plaintiffs' requested injunction without requiring the plaintiffs to show that any of the enjoined projects within the six national forests were causing or were likely to cause any harm to the salmon. Instead, the court concluded that a mere "potential for harm to endangered species" was sufficient to warrant the injunction. In addition, the Idaho court's injunction applied even to projects for which the Forest Service had individually conducted Section 7 consultations with NMFS and found that the projects would not likely adversely affect the salmon.

The Idaho *Pacific Rivers Council* case was particularly disturbing to HECLA and residents of Idaho. In our State, approximately 70 percent of the economy is dependent on public land use, and the Idaho injunction, if not stayed by stipulation of the parties, would have shut down a significant portion of that activity. Our company operates the grouse creek mine in the Challis National Forest near Challis, Idaho, and was subject to this injunction. The Grouse Creek Mine employs approximately 140 employees in Custer County, Idaho, and supports a significant number of jobs that support the mine. The Grouse Creek Mine is a state-of-the-art facility and has been constructed not only to meet, but to exceed, existing environmental requirements. For example, read improvements that included sediment catch basins actually reduced sediment impacts to Jordan Creek compared to preexisting conditions. After investment of $120 million and over six (6) years of planning, permitting, and

construction, the mine operated for about 4 months before the injunction issued. The Grouse Creek Mine was subject to this injunction even though it had all appropriate State and Federal permits, had gone through individual Section 7 consultation, and had Section 7(d) determinations by the Forest Service concluding that operations could continue pending reinitiation and completion of the forest plan consultation. Most importantly, the case had nothing to do with eliminating actual harm to threatened or endangered salmon species. In fact, the biological assessment prepared during Section 7 consultation for the Grouse Creek project concluded that the project was not likely to adversely affect listed salmon and would actually provide some benefits by reducing stream sedimentation. It was only after severe public pressure that the parties stipulated to stay the Idaho injunction for sixty (60) days to allow the agencies to complete the new forest plan consultation, thereby avoiding tremendous adverse economic consequences.

CONCLUSION

Currently, litigation brought under ESA is moving Federal land management away from Federal agencies and into the Federal courthouse. Federal judges, guided by narrow special interest groups, are becoming the public land managers of the 1990's. HECLA believes that ESA reform is essential to provide for the protection of threatened and endangered species while permitting responsible resource development.

Due to time constraints, I only had time to briefly mention our concerns and reasons for requesting changes to the ESA. I am enclosing a letter with attachments that we sent to U.S. House Committee on Resources that discusses these matters in greater detail and proposes actual statutory changes to the ESA.

Thank you for the opportunity to present these comments. If you have any questions, I would be happy to try to answer them at this time.

RELEVANT PACIFIC RIVERS CASES

Pacific Rivers Council v. *Robertson,* 854 F. Supp. 713 (D. Ore. 1993), *Aff'd in Part Sub. Nom., Pacific Rivers Council* v. *Thomas,* 30 F.3d 1050 (9th Cir. 1994), *Cert. Denied,* 115 S. Ct. 1793 (1995).

Pacific Rivers Council v. *Thomas,* No. CIV–94–0159–S–DAE, Order Granting Injunctive Relief (D. Idaho Jan. 9, 1994).

STATEMENT OF SHERL L. CHAPMAN, EXECUTIVE DIRECTOR, IDAHO WATER USERS ASSOCIATION, INC.

Thank you for allowing me to present this brief testimony before you today on the Endangered Species Act. For the record, my name is Sherl Chapman, I am Executive Director of the Idaho Water Users Association, an organization representing over 170 irrigation districts and canal companies and over 100 agribusinesses in the State of Idaho. Our members are those who operate and manage water distribution systems for agricultural and municipal purposes in the State of Idaho. Obviously, the revision of the Endangered Species Act carries a great deal of importance to us since present Federal interpretation of the existing Act has created a great deal of uncertainty and concern for all of us. My testimony today will focus on two areas we feel needing major revision in the new Endangered Species Act. These two areas are that of State primacy and water allocation and Section 7 Consultation.

Water allocation in the western States is governed by the Appropriation Doctrine which has established a first in time, first in right doctrine for distribution and use of scarce water resources. Early settlers in the west found very quickly that without some sort of orderly mechanism for water distribution and priority, chaos evolved often resulting in major water wars. This doctrine has seen us through many hard times and provided both social and economic stability in the west. Over the last several years, we have seen an ever increasing emphasis by Federal bureaucrats to set aside the Appropriation Doctrine, especially where endangered species are involved, by making statements that would suggest that: (1) the Endangered Species Act is the supreme law of the land usurping even Congressional authorizations; (2) that existing contracts between water users and the Federal Government can be abrogated in the name of endangered species; and (3) that water may be "taken" for endangered species when the Secretary of Interior has decided it is necessary. Such pronouncements have created wide spread paranoia and lent credence to the often repeated statement that there is a War on the West by the current administration.

We, in Idaho, are deeply involved in the water allocation issue because of the listing of several salmon stocks and mollusks in the Snake River and Columbia River

systems. The National Marine Fisheries Service has asserted that major quantities of water must be taken from the State of Idaho in order to provide flow augmentation which is purported to be necessary for recovery of the listed stocks. Because of this demand for water and the uncertainties in the existing ESA, Idaho's water community is deeply concerned about the viability of our water resource in the future. In order to eliminate such uncertainty, it is our recommendation that clear language be inserted in a revised Endangered Species Act to provide for an orderly process in the determination of recovery measures necessary and then a definitive procedure outlined in the Act prescribing the procedures required for acquisition of water if found to be necessary. A critical element of the revision must be a requirement that the Federal Government is required to support proposed actions with verifiable, scientific information subject to public and peer review. Too often, as evidenced in the Pacific Northwest salmon debate, biological opinions, recovery plans and proposed actions are based on pseudo-science with little or no public and peer review leading to suspicion of the validity of studies performed. Additionally, in the Pacific Northwest, wide differences exist in studies, particularly as they relate to recovery measures which leads us to believe that many of the recovery options in both the NMFS Biological Opinions and Recovery Plan are based on political expediency as opposed to scientific truth.

The second component of this process must be the recognition that the States have primacy in water appropriation, allocation and reallocation. To do otherwise will perpetuate lengthy and costly litigation and conflict with no clear winners. Both substantive and procedural State law must be followed if the Federal Government believes it must require water for recovery of a listed species. The government should be directed also to make a significant effort to acquire such water through a willing lessor/willing lessee or willing buyer/wiling seller mechanism prior to making any effort to acquire water through a new appropriation or to take water from existing appropriators. Individual States should also be allowed to participate in the development of reasonable and prudent alternatives as well as recovery plans in an effort to minimize socioeconomic impacts and conflicts between resource users and needs. Unless the Federal Government recognizes State primacy in this arena, the entire history of the Appropriation Doctrine will be upset and water user investments will be destroyed. Water rights in the west are considered property rights and to allow the Federal Government to interfere with these rights will impact the entire economy of the western United States. Additionally, the millions of dollars in investment made on the land and in the definition of water rights through interstate compacts and decrees recognized by all courts in the Nation will be jeopardized.

The second issue I'd like to discuss today relates to Section 7 Consultation. While there has not been significant Section 7 Consultation at this point in time in Idaho, the specter of such consultation looms on the horizon As you may be aware, the National Marine Fisheries Service has issued a Biological Opinion for the period 1995–98 that calls for 427,000 acre feet of water to be taken from the upper Snake River basin for flow augmentation from Reclamation reservoirs in Idaho. The Bureau of Reclamation, to it's credit, has filed Applications for Transfer and Change in the Nature of Use of their water rights in this amount in accordance with State law. We believe that because of the conflicting science I mentioned earlier that the Biological Opinion is in error and the water user community has protested the change in nature of use application since it appears relatively certain that the use of such water will not truly benefit salmon or affect their recovery. It is conservatively estimated that in order to effectively oppose the transfers it will cost Idaho water users between $500,000 and $730,000 by the time we finish the administrative process. There is no way of estimating legal costs if the matter goes beyond the State administrative agency. The relationship of these applications to Section 7 Consultation is not well understood. However, representatives of the National Marine Fisheries Service have met with water users around our State and very clearly warned the water users that if they do not "cooperate" with the Bureau of Reclamation in obtaining the 427,000 acre feet, that NMFS will require consultation on all dams and reservoirs under Reclamation control in Idaho each year prior to the storage of water for irrigation. In essence, what this means is that unless we work to help the Bureau get the water demanded by NMFS, that they may not let us store water for irrigation each year which places the irrigation water supply for about 1.5 million acres of irrigated land in Idaho at risk each year. This not only will create a great deal of uncertainty with individual farmers throughout the Snake River basin but has also lead to concern by lending institutions in our State regarding continued operating loans and long term financing of farms and facilities that may be subject to such constraints should NMFS make good on its threat. We would suggest that in the new ESA that clear and concise language be included which would clarify

that the scope of Section 7 Consultation should not be required for continuation of existing water diversions and Federal irrigation project operations. Consultation should *only be required and limited to* additional impacts which are the direct result of proposed new actions or major modifications in operational activities. Federal agencies should not be allowed to use Section 7 as a tool for blackmail of water users.

There are many other areas of the Endangered Species Act needing revision. IWUA is extremely pleased that you are taking a careful and reasoned approach to revision of the Act. IWUA does not encourage wholesale repeal of the Act in its entirety but does feel that it has been abused in the past. Westerners are not plunderers of the environment. We recognize the value of a healthy environment and diversity of species. Most of our ranching and farming operations derive their strength from such diversity. However, in the past, the Endangered Species Act has been used as a tool to obstruct and control use of our natural resources. One only has to look at the spotted owl and salmon in the Northwest, the kangaroo rat in California, pup fish in Arizona and Nevada and other species that have been used in the past in an effort to.restrict natural resource use. Additionally, it seems nearly impossible to achieve closure when dealing with endangered species. Once an agreement is reached on one segment of a recovery plan it seems that the Federal Government then moves to require more and more until the resource user is overwhelmed and just simply gives up. Idaho water users and other western interests are willing to do what we can to assist in recovery of endangered species. We are willing to make sacrifices, proportionate with other interests, in the implementation of a new ESA In return, we ask for fairness, protection of our property rights and upon completion of agreements finality and closure of the issue. I wish you well in your endeavor and I look forward to seeing the product of this sub-committee.

STATEMENT OF STEVEN P. QUARLES, COUNSEL TO THE ENDANGERED SPECIES COORDINATING COUNCIL AND AMERICAN FOREST AND PAPER ASSOCIATION

Mr. Chairman and members of the Subcommittee, thank you for the opportunity to testify about habitat protection on nonFederal lands under the Endangered Species Act.

I am Steven Quarles. I appear today on behalf of the Endangered Species Coordinating Council, for which I serve as counsel. The ESCC is a coalition of more than 200 companies, associations, and individuals and nine labor unions involved in ranching, mining, forestry, wildlife management, manufacturing, construction, fishing, and agriculture. A current list of members is attached. We seek workable procedures and positive incentives to achieve the fundamental wildlife conservation purpose of the Endangered Species Act. We believe these procedures and incentives must consider economic factors and respect the rights of private property owners without impairing the Act's fundamental commitment to protection of species at risk.

I am also representing the American Forest & Paper Association. AF&PA is the national trade association of the forest, pulp, paper, paperboard, and wood products industry. The association represents approximately 450 member companies which grow, harvest and process wood and wood fiber; manufacture pulp, paper and paperboard products from both virgin and recovered fiber; and produce solid wood products. AF&PA is also the umbrella for more than 60 affiliate member associations that reach out to more than 10,000 companies. AF&PA represents an industry which accounts for 8 percent of the total U.S. manufacturing output, employs about 1.6 million people, and ranks among the top 10 manufacturing employers in 46 States.

Both ESCC members and the forest products industry recognize the importance of natural systems and natural diversity, upon which all of us depend not just for aesthetic enjoyment but also for the most fundamental necessities of life. Many of the industries which participate in the ESCC derive their livelihoods from these natural systems; the health and integrity of these systems and the diversity they support must be maintained if the ESCC industries are to secure the resources to make the products they then provide to meet the needs of society.

Recently, I served as counsel to a group of civic organizations, small landowners, and contract loggers in the Pacific Northwest and purchasers of timber from national forests in the Southeast which brought *Sweet Home Chapter Of Communities For A Great Oregon, et al.* v. *Babbitt*. And, it is with this case that I would like to begin my discussion of habitat conservation on private lands. Contrary to the widespread but erroneous perception fostered by opponents of that lawsuit, the plaintiffs challenged neither the concept that protection of habitat is a critical ele-

ment in the strategy to conserve endangered and threatened species nor the authority in the Endangered Species Act to provide habitat protection. The lawsuit opposed a single regulation of the Fish and Wildlife Service. In that rule, the agency enlisted and defined the word "harm" in the section 3 definition of "take" to grant itself a sweeping mandate to compel habitat protection on private lands. Our view was, and is, that the section 9 "take" prohibition may have been a highly convenient, but not an available, statutory authority for the Federal Government to use to zone, in effect, millions of acres of land.

Unquestionably, the Endangered Species Act provides for the protection of habitat of listed species. But that protection arises from three other sections of the Act, not section 9 Under section 7(a)(1), Federal agencies have the duty to protect habitat necessary to ensure the conservation of listed species. Section 7(a)(2) requires Federal agencies and all private landowners who seek Federal permits or funding to undergo consultations with the Fish and Wildlife Service to ensure that their activities will not adversely modify or destroy habitat that has been designated as critical habitat by the Service through rulemaking. Finally, section 5 authorizes the Federal Government to acquire habitat on private land with Land and Water Conservation Fund monies. Let me emphasize that 2 out of 3 of these authorities provide for protection of habitat on private land—but with landowner protections missing in the section 9 "take" prohibition. These protections make certain that, when Federal permits or funding is sought, the habitat to be protected has been formally designated by rulemaking under the Administrative Procedure Act, and, when no Federal assistance or permission of any kind is needed, the landowner is compensated for the loss or restriction of the use of his or her land. Despite the Supreme Court's ruling in *Sweet Home*, we believe Congress will not countenance this blatant elevation by a zealous agency of a single word in a 30 page statute—a word added on the floor of the Senate in a block of technical amendments—to authorize and enforce Federal zoning of millions of acres of private land under threats of civil and criminal sanctions. We urge that the Act be amended to define "harm" to include the critical element of actual physical injury to a member of a listed species. If agreement cannot be reached on an appropriately limiting definition, we suggest that the mutating word "harm" be deleted from the section 3 definition of "take."

The *Sweet Home* lawsuit attacked the validity of a single regulation under the Endangered Species Act, not the statute itself or any of its provisions. Yet, the Act does contain provisions that are truly inequitable for private landowners. *Sweet Home* was simply symptomatic of the rapidly accumulating frustrations of private landowners over the profoundly unfair treatment they receive under the Act. Few landowners would disparage the purpose of the Endangered Species Act—to protect species at risk and their habitat. It is a noble purpose, and an obligation humanity should assume. However, that obligation belongs to the society at large, not individual landowners. And the costs of that obligation should be assumed by society, not the landowner. The first and most important step to ensure that the burden of species protection is properly assigned would be to provide compensation to landowners who must forego or alter the use of their land to benefit listed species. We strongly support inclusion of a property owner compensation provision in the Act.

But even more fundamental surgery on the Act is needed to provide relief to private landowners. As presently written, the Act is so profoundly unfair to landowners because it *shifts the burden of protecting listed species and their habitat away from the Federal agencies and onto private landowners.* In order for landowners to obtain immunity from the section 9 "take" prohibition, they must meet standards that are far more stringent, submit to procedures that are far more complex and time-consuming, and assume costs that are far greater than those applicable to Federal agencies pursuing the same immunity. This reverse of what should be the proper order of responsibilities for listed species—Federal agencies first, landowners second—may be inadvertent and not what Congress intended, but it is nonetheless the reality of Endangered Species Act implementation. Even before the proper obligation of landowners under the Act can be addressed, the first step in the reform effort must be the elimination of the statute's favoritism to Federal agencies and inequitable treatment of private landowners.

I would like to refer anyone who doubts that the Endangered Species Act is biased toward Federal agencies and against private landowners to the chart on page 7. This chart displays the disparate standards and procedures applicable to Federal agencies and private landowners seeking immunity from violation of the Act's section 9 "take" prohibition. Both wish to receive permission to take members of listed species as the incidental result of otherwise lawful activities. That permission is received by Federal agencies when the Fish and Wildlife Service provides an incidental take statement for a Federal project at the end of the consultation process under section 7(a) (2) of the Act, and by private landowners when an incidental take per-

mit is issued by the Fish and Wildlife Service after approval of a landowner-prepared conservation plan under section 10(a)(1) of the Act. The inequities in the two processes are so significant that the Federal agencies receive immunity *hundreds to thounsands times each year*, while landowners (even with the greater emphasis placed on the incidental take permit by Secretary Babbitt) have obtained immunity only *40 to 50 times in the last 13 years*. The chart displays the reasons for this unfortunate record:

INEQUITIES IN PROCEDURES AND STANDARDS FOR FEDERAL AGENCIES AND NONFEDERAL LANDOWNERS TO OBTAIN DETERMINATIONS BY FISH AND WILDLIFE SERVICE OF ENDANGERED SPECIES ACT COMPLIANCE ("TAKE" IMMUNITY)

FEDERAL AGENCIES	*PRIVATE, STATE & LOCAL LANDOWNERS*
Projects receive Incidental Take Statements after review by FWS under consultation procedures of ESA § 7	*Projects receive Incidental Take Permits after submission of conservation plans for review by FWS under ESA § 10*
STANDARDS	
Granted "take" immunity if project is not likely to jeopardize continued existence of entire species	Compelled to seek "take" immunity if project is likely to harm or harass a single member of the species
Granted "take" immunity if project is not likely to adversely modify critical habitat which FWS has designated by rule	Compelled to seek "take" immunity if project adversely modifies any habitat which FWS identifies without rulemaking
PROCEDURES	
No additional procedures necessary to receive "take" immunity	Costly and time-consuming procedures required to obtain "take" immunity
DURATION	
FWS must decide in 90 days	FWS has no time limit to decide -- typically, 1-5 years
COST	
Little cost since FWS prepares biological opinion	Steep costs, typically in $100,000's, since landowner prepares and implements the conservation plan
FREQUENCY	
Immunity is granted through consultations which occur 7,600+ times each year	Immunity is granted through the issuance of 40-50 permits in 13 years
VISIBILITY	
Review process is closed; No hearing; No public participation	Review process is open; Public hearing must be held, Activists and public officials may be invited to join a steering committee to consider and revise the landowner's plan
ANTI-TRUST	
Anti-trust laws do not apply	Anti-trust laws do apply; no immunity even with issuance of the permit
EXEMPTION	
Exemption procedure is available to federal agency through application to Endangered Species Committee	Exemption procedure is not available to landowner
PROPERTY RIGHTS	
Property rights are not affected when FWS fails to issue Incidental Take Statement for federal project	Property rights may be lost when FWS denies or heavily conditions Incidental Take Permit for a landowner's activities

STANDARDS

To obtain incidental take immunity:

- A private landowner must seek an incidental take permit if his or her activity will harm or harass a *single member of a species*, whereas a Federal agency can obtain an incidental take statement if its activity is merely found not likely to jeopardize the continued existence of the *entire species*.
- A private landowner must seek an incidental take permit if his or her activity will modify *any habitat* which the Fish and Wildlife Service might identify, whereas a Federal agency can obtain an incidental take statement if its activity is merely found not likely to adversely modify only (critical habitat which the Service must designate by rulemaking.

PROCEDURES

- As the chart shows, a Federal agency has the benefit of a procedure that is *secret*, has a mandatory 90-day *deadline*, and features a document (biological opinion) which the *Fish and Wildlife Service*, not the agency, prepares, whereas the private landowner is burdened with a procedure that is *public*, has *no* statutory *deadline*, and features a document (conservation plan) which the *landowner*, not the Service, must prepare.
- Accordingly, while the Federal agency is not subjected to a hearing, can demand a Fish and Wildlife Service decision in 90 days, and does not have to incur any significant additional costs in order to obtain an incidental take statement, the landowner must submit to a hearing and perhaps a steering committee of activists and local officials, undergo an application process with a duration of anywhere from one to 5 years, and suffer costs as high as hundreds of thousands of dollars to prepare a conservation plan in order to obtain an incidental take permit.

There are other inequities displayed in the chart, but one that is not: even after all of the procedures imposed on a landowner are conducted, before an incidental take permit may be issued the decision to issue still must undergo the very same consultation procedures that Federal agencies must follow. Therefore, the landowners not only must run the gauntlet of procedures applied solely to them (as displayed in the second column of the chart), but then must turn around and sprint back through a second gauntlet of the procedures applied to Federal agencies (as displayed in the first column).

Unfortunately, the inequities visited on private landowners by the Endangered Species Act are not limited to the procedures and standards for obtaining immunity from the "take" prohibition. There are other structural problems that are not found in any other environmental law. For example, unlike the Clean Air Act, Clean Water Act, CERCLA, and RCRA, the Endangered Species Act is devoid of such phrases as "insofar as practicable," "to the extent feasible," "best available technology," and "in the public interest." The absence of these phrases produces an absolutist statute—a statute with virtually no flexibility. When you add to this inflexibility, first, the paucity of data about species, particularly species that are threatened or endangered, as compared to the information available for air, water, or waste, and, second, a scientific discipline—conservation biology—that is much less mature, and relies on many more untested theories and assumptions, than the scientific and engineering disciplines employed in addressing other environmental issues, the result is a legal regime that typically does not allow for a decisionmaking, common in the implementation of other environmental laws, that balances environmental protection and development needs and engineers a solution which benefits both. In the face of this statutory inflexibility, lack of data, and scientific uncertainties, few scientists or public decisionmakers will risk their professional reputations by suggesting generic or site-specific alternatives for any species' protection that are less stringent or burdensome for private landowners. In fact, this inflexibility in the Act is so severe that there remain real questions as to whether several of the very welcome administrative reforms which Secretary Babbitt has proposed—for example the "no surprises" and "safe harbor" policies—could withstand judicial challenge without amendments incorporating them into the Act.

Second, the Endangered Species Act somehow missed the due process revolution of the 1970's and 1980's which is reflected in so many of the procedural provisions of the other environmental laws. It is as though Congress somehow determined that the protection of endangered and threatened species is so noble a purpose, all due process guarantees could be dispensed with. Unlike the other environmental laws, the Endangered Species Act provides no administrative appeal rights, permits the Fish and Wildlife Service to avoid addressing any of the impacts of or alternatives

to its decisions in the National Environmental Policy Act documents, requires few hearings, and does not mandate any agency response to whatever public comment is permitted. Worse, recently the Fish and Wildlife Service and the Federal agencies with which it consults have discovered the joy of guidelines. Indeed, many of the admirable reforms Secretary Babbitt has proposed to institute administratively are to be issued in guidelines form. These guidelines not only lack all of the due process protections I have mentioned, but also typically are not enforceable by a landowner against the government and are no defense for a landowner who is sued in a citizen suit.

These inequities for private landowners must be remedied. The GAO reports that over 90 percent of the listed species have some or all of their habitat on nonFederal lands, two-thirds have over 60 percent of their total habitat on nonFederal lands, and one-third are entirely dependent on nonFederal lands for their habitat. If and when more species are listed, more private lands will be subjected to the Act. The explosive rise in landowner frustrations over the Act's inequities threatens its integrity, if not its very existence, unless the inequities are remedied.

How can these numerous inequities be remedied? First, by providing a landowner compensation provision. Second, by adding language which provides greater measures of flexibility to the decisionmaker and due process to the landowner. Third, by incorporating procedures that eliminate the bias in favor of Federal agencies and against landowners, such as: providing to landowners the opportunity to avail themselves voluntarily of the same consultation process (with its easier standards and less costly and time consuming procedures) used by Federal agencies, instituting a general permit program for low-impacting landowner activities similar to that provided in the Clean Water Act, and streamlining the incidental take permit process; And, finally, by providing a definition of "take" that ensures landowners are not subject to criminal and civil sanctions for habitat modification activities where there is no evidence whatsoever of any actual physical injury to or death of any member of a listed species.

Thank you for the opportunity to present the views of the Endangered Species Coordinating Council and the American Forest & Paper Association. I would be delighted to answer any questions you might have.

Endangered Species Coordinating Council Members

(248)

American Forest & Paper Assn
American Sheep Industry Assn
American Soybean Association
National Assn of Manufacturers
National Assn of Wheat Growers
National Cattlemen's Assn
National Corn Growers Assn
National Cotton Council
National Fisheries Institute
National Mining Council
Coalition of Oil & Gas Associations
International Assn of Bridge, Structural and Ornamental Iron Workers
International Brotherhood of Painters and Allied Trades
International Longshoremen's Assn
International Union of Operating Engineers
International Woodworkers of America
United Paperworkers International Union
Utility Workers Union of America
United Brotherhood of Carpenters and Joiners of America
Assn of Western Pulp and Paper Workers

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ACCORD (Arizona Citizens Coalition Resource on Decisions)
Addoco, Inc.
Alabama Forestry Assn
Alabama Lamb, Wool & Mohair Assn
Alaska Forestry Assn
Alaska Mining Assn
Alaska Wool Producers Assn
Allegheny Hardwood Utilization Group
Alpine Engineered Products
American Iron Ore Assn - Cleveland, Ohio
American Plywood Assn
American Pulpwood Assn
American Sheep Industry Women
American Wood Preservers Institute
Amos-Hill Associates
Appalachian Hardwood Manufacturers
Aristokraft, Inc. - Jasper, In., Crossville, Tn.
Arkansas Forestry Assn
Arizona Cotton Growers Assn
Arizona Wool Producers Assn
Arizona Cattlegrowers Assn
Associated Oregon Loggers, Inc.
Atlas Pallet Corp.
Backcountry Horsemen of Washington, Inc.
B.A. Mullican Lumber & Manufacturing
B.L. Curry & Sons, Inc.
Balfour Land Co.
Bell Fibre Products
Bibler Brothers, Inc.
Black Hill Regional Multiple Use Coalition
Black Hills Forest Resource Assn
Brownlee Lumber, Inc.
California Cattlemen's Assn
California Forestry Assn
California/Oregon Miners Assn
California Wool Growers Assn
Cardaco - An Alcoa Co.
Challenger Pallet and Supply, Inc. - Id.
Cherry Hill Wood Products, Inc.
Clinton Pallet Co.
Coastal Lumber Co.
Coast Range Conifers
Colorado Cattlemen's Assn
Colorado Mining Assn
Colorado Timber Industry Assn
Colorado Wool Growers Assn
Conex Forest Products
Continental Lime Inc.
Culhane, John
Delaware Sheep & Wool Producers
DenPak Building Products, Inc.
Denver Reel & Pallet Co.
Dixon Lumber Co.
Douglas Timber Operators
Duo-Fast Corp.
East Perry Lumber Co.
Econotool
Export Corporation
Farm Credit Bank of Texas
Florida Cattlemen's Assn
Florida Forestry Assn
Florida Sheep Industry
Forest Farmers Association
Garnett Co.
Georgia Cattlemen's Assn
Georgia Forestry Assn, Inc.
Georgia Mining Assn
Georgia Sheep & Wool Producers
Granite Hardwoods, Inc.
Groves Pallet Co.
Haag, William S. - Kodiak, Alaska

Hallwood Ent.
Hardwood Manufacturers Assn
Hurder, Paul
Idaho Cattle Association
Idaho Mining Assn
Idaho Wool Growers Assn
Ihlo Sales and Imports
Illinois Lamb & Wool Producers
Independence Mining Co.,- CO
Indiana Sheep Industry Assn
Industrial Pallet & Packaging Co.
Intermountain Forestry Industry Assn
International Association of Drilling Contractors
Interstate Pallet Exchange, Inc.
Iowa Cattlemen's Assn
Isaacson Lumber Company
Jay Dee Transport Co.
Johnson Industries
Kentucky Beef Cattle Assn
Kentucky Forest Industries Assn
Kentucky Sheep & Wool Producers
Kitchen Cabinet Manufacturing Assn
Kingsberry, Dennis
Lake States Women in Timber
Lavelle Building Materials
Lewis, L.G. and Bette - Richmond, VA
Litco Intl
Louisiana Forestry Assn
Louisiana Sheep Producers Assn
Love Box Co.
Mr. & Mrs. Gerald Lucas
Lumberman's Assn of Texas
Manufacturers Wholesale Lumber
Mason, Tad - Redding, CA
Marriott's Incorporated - Canyonville, Or.
Massachusetts Federation of Sheep Assn
Merillat Industries, Inc.
Mezquite Maderas Procesados (NWPCA)
Michigan Assn of Timberman
Michigan Cattlemen's Assn
Michigan Forestry Assn
Michigan Resource Alliance
Michigan Sheep Breeders Assn
Mid-America Lumbermen Assn
Mid-Ohio Wood Products
Mississippi Cattlemen's Assn
Mississippi Forestry Assn
Mississippi Sheep Breeders Assn
Missouri Cattlemen's Association
Missouri Forest Products Assn
Missouri Sheep Producers
Mitchell Veneers
Montana Stockgrowers Assn
Montana Wool Growers Assn
Melvin Morris, Hawthorne, Cal.
Mullican Jr., Mr. and Mrs. Bill A.
National Lamb Feeders
Nat'l Lumber & Building Material Dealers Assn
National Particleboard Assn
National Wood, Window & Door
National Wooden Pallet & Container Assn
Nebraska Cattlemen's Assn
Nebraska Sheep Council
Neveda Cattlemen's Assn
Nevada Wool Growers
New Hampshire Sheep & Wool Growers
New Jersey Wool Growers Assn
New Mexico Cattle Growers
New York Empire Sheep Producers Assn
Nor-Cal Moulding Co.
Noranda Exploration
North American Wholesale Lumber Assn
North Carolina Forestry Assn
North Carolina Sheep Producers
North Dakota Lamb & Wool Producers
North Dakota Stockmen's Assn
North Star Lumber, Inc.
Northeastern Loggers' Assn
Northern Michigan Veneers, Inc.
Northwest Forestry Assn
Northwest Reforestation
Northwestern Public Service Co.
Oelze, Kim
Oklahoma Sheep & Wool
Oregon Forest Industries Council
Oregon Forest Products Transportation Assn
Oregon Sheep Growers
Pallets Inc.
Pallox, Inc.
Paragon Corporation
Paul Bunyan Products
PFS/TECO
Pennsylvania Sheep & Wool
Porter's Wood Products, Inc.
Powell Industries, Inc.
Premdor
Professional Reforestation of Oregon, Inc. - Coos Bay, OR
Public Lands Council
Putting People First
Ranier Pallet Corporation
Reel Lumber Service
Rhode Island Sheep Cooperative
Richardson Brothers Co.
Richins, Robert and Victoria
John Rock & Co.
Savanna Pallets, Inc.
Scott Pallets, Inc.
Sheep Producers Assn of Hawaii
Shipshwewana Hardwoods
Sierra Care
Simplot Co.

Sonoma Pacific Co.
South Carolina Forestry Assn
South Carolina Sheep Industry Assn
South Dakota Cattlemen's Assn
Southeastern Lumber Manufacturers Assn
Southern Cypress Manufacturers Assn
Southern Forest Products Assn
Southern Oregon Timber Industries Assn
Southern Pallet, Inc.
Southern Timber Purchasers Council
StarMark Inc.
Stewards of Family Farms, Ranches & Forest
Tennessee Sheep Producers Assn
Texas Cattle Feeders
Texas Forestry Assn
Texas Sheep and Goat Raisers
Texas & Southwestern Cattle Raisers Assn
Texas Wildlife Assn
Thomasson Lumber Co.
Timber Producers Assn of Mich. and Wisc.
Tumac Lumber Co.
Tuolumne Chapter of Western Mining Council
United Forest Families
Upham & Walsh Lumber
Utah Cattlemen's Assn
Utah Mining Assn
Utah Wool Growers Assn
Virginia Sheep Federation
Washington Cattlemen's Assn
Washington Forest Protection Assn
Washington Wool Growers Assn
Western Forest Industries Assoc.
Western Mining Council
Western Wood Products Assn
Western Pistachio Assn
Western Utah Mining Council
Western Wholesale Moulding, Inc.
Western Wood Products Assn
West Virginia Cattlemen's Assn
West Virginia Shepherds Federation
Wisconsin Box Co.
Wisconsin Sheep Breeders Assn
The Wood Company of Oxford, Inc.
Wood-Mizer Products, Inc.
Woodgrain Millwork, Inc.
Wyoming Timber Industry Assn

STATEMENT OF GEORGE E. MEYER, SECRETARY, WISCONSIN DEPARTMENT OF NATURAL RESOURCES

Mr. Chairman and members of the subcommittee, I appreciate the opportunity to address you today at this hearing, and to submit to you additional material pertaining to the Wisconsin Department of Natural Resources's views on reauthorization of the Endangered Species Act.

The Federal Endangered Species Act is one of the mist comprehensive pieces of environmental legislation in-the world. The Wisconsin Department of Natural Resources strongly supports reauthorization of the existing act and encourages adoption of legislative and Code of Federal Regulation changes to further improve its effectiveness and efficiency, its sensitivity to impacted groups and individuals and its ability to work with cooperating agencies.

Within my Department I had a Team of staff from many environmental and resource functions analyze the existing Act and provide me with recommendations on how to improve it. These are detailed in a position paper which is attached to these written comments. As you or your staff read over this paper, I'm sure you will find a number of significant recommendations that will improve implementation of the Act while maintaining its scientific integrity.

The Department is an active member of the International Association of Fish and Wildlife Agencies and we are actively involved with them in their work pertaining the principles of reauthorization and proposed statutory language. I'm sure you will find my comments complementary of the discussions this Subcommittee and its staff are having with the Association.

Today I want to direct my comments to two aspects of endangered species management that we in Wisconsin have found to be very productive and enjoy strong public support. The two projects I want to highlight are: first—our voluntary landowner protection project for endangered plants, and second—our Habitat Conservation Planning effort for the endangered Karner blue butterfly.

WORKING COOPERATIVELY WITH PRIVATE LANDOWNERS

In Wisconsin we have 6 federally threatened plants with most of the populations of these plants occurring on private lands. As you know, the Federal Endangered Species Act does not extend regulatory protection to plants located on private lands. You also know, some private land owners are apprehensive, often based on misinformation, about Federal regulation of their land due to the presence of endangered species.

In response to this we obtained Fish and Wildlife Service (FWS) funding to hire a part time biologist, Mr. David Kopitzke, who makes personal contacts with landowners who potentially had the listed plants on their lands. When we started this in 1991, we were unsure what to expect. Of the several hundred contacts we've made, we have found nearly all landowners are pleased to find out their land contained these species and what they might to do help protect them. The success of this effort is due to the approach used in contacting the landowners and Mr. Koptizke's patient, friendly manner of dealing with people.

Based upon known historical records, past survey work by university or State biologists allowed by the current or previous landowners and knowledge of the habitat requirements of the listed species, we are able to determine the general locations where these listed species might be found. Mr. Koptizke then contacts a landowner in the general area and explain to him/her what he is doing and why a listed species might be on their land.

He asks permission to look for the listed species and involves the landowner in the search. The time spent in the field with the landowner is an opportunity to discuss past and current management of the land and talk to the landowner about the biology of the their land and the plant and animal communities.

When a listed species is found, landowners are congratulated for caretaking the land to permit continued existence of the species. They are informed of the Federal and State laws relating to the rare species and are given technical information on management practices. Most landowners are thrilled to learn their property harbors a rare species. Many landowners readily sign a voluntary memorandum of agreement in which they agree to manage the land in a way that will conserve the rare species and to notify us if there is an impending threat' to the plants or if they sell the property. Once the agreements are signed, the landowners receive a personalized and colored plaque with a drawing of the species on their land.

Our landowner contact program has also worked with non-Federal public lands to an equal success such as county forests and parks. We have also had success in expanding the program to rare animal such as the Karner blue butterfly, the massasagua rattlesnake and the ornate box turtle and candidates plants.

It is apparent to me and my Department, that private landowners are an essential component of protecting endangered and threatened species. Thus, we must institute programs and policies that help and reward them for caretaking these rare species. I'm sure you will be receiving many comments and suggestions to this effect. One such group that is exploring the issue of incentives to private landowners is the Keystone Center. I understand you will be hearing a report from them later today. I believe you will find a number of well thought out proposals on this issue.

Wisconsin will most likely be supportive of suggestions which offer clear, practical and understandable remedies to the problems which now cause confusion and distrust. In my role as Secretary for the agency responsible for all environmental and resource management and regulation in Wisconsin, I assure you that cooperative efforts with private landowners and businesses are the preferred means of achieving conservation goals.

I strongly encourage you to provide State agencies, like mine, as well as the Federal agencies, with additional tools—legal, policy and funding—to work cooperatively with private landowners. I am confident by doing so you will see significant gains in resource protection and restoration. For example, we have had a number of our cooperating landowners inform us when utility or road right-of-way projects would affect species on their land. We are then able to work with utility and highway departments early in the project to workout acceptable solutions for protecting the plants.

Our highly successful landowner contact program is just an example of what may be accomplished with additional Federal support and flexibility on the State level for this type of work. In most cases, the States are in the best position to work with private landowners. There is often less apprehension from landowners working with State employees than Federal. State employees generally have longstanding relationships with landowners creating trust, confidence and respect, and are more often likely to reside in the local community.

In conclusion, let me emphasize the aspects of Wisconsin's landowner contact program which are critical to successful acceptance and stewardship of rare species by landowners:

- personal and repeated contact by a consistent person with biological knowledge,
- basic information about the species on their land and their management needs,
- accurate information about their legal rights and responsibilities (Federal and State) specific to the species on their land,
- a positive approach, explaining the uniqueness of their land and congratulating landowners for their past stewardship,
- a voluntary memorandum of Agreement between the State and landowner, and a small token of recognition.

AVOIDING A MAJOR TRAIN WRECK IN WISCONSIN

The issue of working with private landowners, an endangered species and its habitat, and the constraints of the law itself came to a rapid forefront in Wisconsin in December 1992, when the Karner blue butterfly was listed as endangered.

The Karner Blue butterfly is one of many species that has declined dramatically over the past several decades. The primary cause of the Karner blue's decline is the loss and fragmentation of its habitat due to development, agriculture, woody plant succession in the absence of natural disturbances and tree plantations. The Karner blue butterfly occurs only on lands supporting wild blue lupine, the only plant which the larval stage of the butterfly eats. Karner blues are found on areas with sandy soils, primarily throughout central and northwestern Wisconsin, and similar scattered habitat in New York, Michigan, Illinois and Minnesota.

Our potential "Train Wreck" is due to the fact that Karner blue habitat exists interspersed over a range of 6 million acres of landscape in Wisconsin. This land area produces major amounts of forest products for Wisconsin industries, large amounts of agricultural commodities (cranberries, potatoes, vegetables) and contains several rapidly growing small cities.

After observing the spotted owl situation in the Pacific Northwest, we did not want a similar situation to occur in Wisconsin. Fortunately, unlike the spotted owl situation, the Karner blue and its habitat are dependent upon periodic disturbance such as fire and normal timber cutting to stimulate the growth of lupine. The Karner blue is a disturbance dependent species and thus perpetuating the species, by integrating its needs into land uses which cause periodic disturbance (e.g. logging) should be considerably easier than when working with species that are disturbance sensitive.

Because of the large number of discrete occurrences of Karners, the Department is taking the lead to develop a single Habitat Conservation Plan (HCP) for the State

of Wisconsin, involving dozens of businesses, agencies, organizations and individuals. The key to making this highly complex and sizable undertaking feasible is the support and encouragement we originally received from the forest products industry in our State. Most notably, the Georgia Pacific Corporation, International Paper, Inc., Consolidated Papers, Inc and the ANR Pipeline Company urged us to undertake an HCP of this type. They specifically wanted to avoid the problems which have occurred in the Pacific Northwest.

I have attached an issue brief prepared in June 1994 that describes the plan for this effort in more detail and a list of the partners who are working on this HCP with us. As you'll see, our partners are a diverse group of industry, counties, conservation groups and private landowners. One of the major challenges facing this group is to mesh their differing perspectives and interests over the entire Karner blue range in Wisconsin. The Department has taken on this challenge because we see the potential this project has for creating productive and cooperative working relationships.

In my remaining testimony, I want to emphasize what we have learned thus far about developing an HCP of this magnitude and how revision of the ESA can help improve the HCP process.

This is Wisconsin's first HCP, the first for the Fish and Wildlife Service staff in our State and the largest HCP the FWS Region 3 Office has been involved with. This naturally resulted in problems when the FWS were unsure on how to proceed or what advice to provide. This caused confusion among the parties involved in the HCP and at times the perception of inflexibility on the part of the FWS. However, as we continue to work as a partnership, we are finding solutions to these problems and the FWS has shown increased flexibility. The FWS has been a good partner and is committed to making this unique HCP successful.

We recommend the following improvements in the HCP process:

Conservation Efforts: Amend Section 10 to allow for the unavoidable incidental taking of endangered species if done as part of a conservation effort outlined in either a recovery plan or in a cooperative agreement with the State. For example, prescribed burning perpetuates vigorous Karner blue habitat but some Karner blue larvae and eggs will be killed during a fire. However, burning plans can be developed to not burn all potential habitat at one time thus allowing for rapid colonization of newly enhanced habitat.

Revise and Simplify Permitting Requirements: The ESA or its administrative policies should be amended to great local populations as the unit of protection rather than individuals for certain species (e.g. disturbance-dependent species). An alternative recommendation would be to require an incidental take permit for individual organisms, but not require the development of an HCP unless there will be harm to the population. This is especially important when dealing with invertebrates given their life history characteristics. The ESA could also be revised to provide for a minimum level of unintentional take for animals as is provided for plants under Section 9(a)(2)(B).

The HCP and associated environmental assessment or environmental impact statement should be combined such that only one document need be written and submitted for pubic review.

The standards for approving or denying an HCP must be clarified before the process begins.

The ESA or the implementing regulations should establish timeframes for review and approval of HCP's and issuance of permits.

Clarify Potential Take Activities: Incidental take is difficult to determine with small organisms that are hard to detect in all of their life stages such as insects. This is further compounded with species like the Karner blue butterfly that are dependent upon fire, timber harvest, mowing or other disturbance to maintain their habitat.

Identify activities that may result in take before listing so that the States and the FWS can be working with landowners to mitigate take by the time the species is listed. Consequently, landowners would know how they may be impacted by a listing and have the opportunity to express their concerns during the public comment period. The FWS should also clarify terms such as "reasonable", "limited" and "permissible" on a species by species basis.

Issuing Permits: Authorize States with approved HCP's to issue scientific and incidental take permits. This should generally expedite the permitting process for individuals and businesses and the FWS can monitor the process for consistency and compliance with HCP implementation agreements.

Funding for Habitat Conservation Plans: Congress should provide funding for developing HCP's. This funding could be on a match grant basis, revolving fund or some other mechanism. HCP's can be very expensive, and because they are a Fed-

eral requirement Congress should assure that some funding is available. Delays in completing an HCP due to funding constraints can cause unnecessary complications for public agencies and private individuals.

Scope of Habitat Conservation Planning: Congress should include language in the ESA which encourages landscape level planning for multiple species.

FEDERAL-STATE-PRIVATE PARTNERSHIPS

Mr. Chairman, I want to close my testimony with a few comments emphasizing that revisions in the ESA must meet the critical to encourage Federal-State and-Private partnerships, not discourage them.

Current data indicate that around 50 percent of all endangered species exist solely on private lands. This percentage is even higher if nonFederal public lands are included. Thus, it is clear that the States and private landowners must feel like they are important partners in conserving these species. In Wisconsin we are working hard to make the current law work. But, there are a number of improvements, some I discussed here today, that will make our job more effective and easier.

Perhaps the major thrust of any revision to the ESA needs to be an increase in the involvement of the States in policy decisions, prelisting, surveys, research, HCP's and recovery. Currently the level at which FWS involves States as well as tribes and local governments in all aspects of the ESA seems to vary from region to region and from species to species. There do not appear to be clear guidelines for standardizing such involvement.

The States generally have the expertise, staff and/or contacts to best conduct many aspects of endangered species work. States are generally closer to landowners and do not carry with them the current, but unfortunate and often unwarranted, stigma of Federal agencies. Congress needs to provide the funding and policy direction for this to occur.

In Wisconsin, we firmly believe in keeping sound science as the backbone of the Endangered Species Act and the policies which implement it. However, when using this science, we also firmly believe we need to construct energized working relations with private landowners that will help them, along with State and Federal agencies, be willing stewards of these special species.

For my final comment, Mr. Chairman, I want to call on this Subcommittee and all of Congress to use this opportunity in revising the Endangered Species Act to break the cycle of reactive species by species planning and management. State and Federal agencies need to be proactive and perform the necessary surveys and management work with rare species before they become listed as threatened or endangered. In a revised ESA, Congress can promote this approach by emphasizing—using funding and policy guidance—prelisting activities focused on caretaking species before they are listed. The benefit to the Nation will be more effective stewardship of our plants and animal resources, and much reduced conflict between Federal and State agencies and private landowners.

Mr. Chairman, members of the committee, thank you again for this opportunity. I look forward to continuing to working with you and others in helping make the Federal endangered species laws and policies fully effective and acceptable throughout this great Nation.

Attached Materials:

Wisconsin Department of Natural Resources Position Paper: 'Reauthorization and Amendment of the Endangered Species Act", June 6, 1995.

Memo dated June 22, 1994, from George Meyer to the Natural Resources Board on the Karner Blue Butterfly Habitat Conservation Planning process.

List of Partners in the Karner Blue HCP, dated June 14, 1995.

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EXECUTIVE SUMMARY

The Federal Endangered Species Act is one of the most comprehensive pieces of environmental legislation in the world. The Wisconsin Department of Natural Resources strongly supports the reauthorization of the existing Act and encourages the adoption of legislative and Code of Federal Regulations changes to further improve its effectiveness, efficiency, sensitivity to impacted groups and individuals, and ability to work with cooperating agencies.

The Wisconsin Department of Natural Resources recommends that the Endangered Species Act be reauthorized and amended in the following ways. Note that all recommendations are listed in the same order as the pertinent section in the Endangered Species Act. High priority issues are highlighted.

Prelisting Conservation

* Focus on prelisting surveys and conservation actions that would prevent the need for listing.

Listing/Delisting

* Set priorities for listing based on protection needs regardless of taxa.

* List solely on a scientific basis rather than accounting for socio-economic impacts of listing.

* Expand "distinct population segment" listing option to invertebrates and plants.

* Identify potential "take" prohibitions at the time of listing.

* Examine the listing process for ways to improve efficiency.

* Establish consistent and efficient delisting procedures, allowing for public input.

Recovery Planning

* Assess recovery potential at the time of listing and initiate recovery planning within one year from the date of listing.

* Involve biologists from all states within a species range in recovery planning. Amend the Federal Advisory Committee Act to allow for this.

* Whenever possible, develop joint listing and recovery packages for two or more rare species inhabiting the same habitat.

* Strengthen the socio-economic portions of recovery plans.

* Make recovery and delisting a priority by allocating funding to implementing recovery efforts.

Critical Habitat Designation
* Clarify the impact of designation on non-federal landowners and the public at the time of proposed designation. Identify potential prohibitions.

* Develop incentives to encourage conservation by private landowners within designated habitat.

Increased Role of the States
* Increase emphasis on having the states conduct prelisting surveys, research and recovery work.

* Provide sufficient funds to the states to conduct necessary survey, planning and conservation work.

* Involve state agencies in policy decisions impacting their states.

Funding and Staffing
* Dramatically increase funding and raise allocations to Section 6 and Section 15 grants to the states.

* Establish a fund for each of the following critical programs that have been consistently under-funded:
  - Implementing approved recovery plans and conducting long-term monitoring,
  - Public education re: rare species and habitats,
  - Cooperative efforts with and incentives for landowners.

* Develop new funding sources.

Section 7 Consultation
* Involve appropriate state conservation agencies in any formal consultations. Federal agencies must consider state recovery plans and consult with them.

* Expand Section 7 to allow for consultation with cooperating non-federal agencies.

Endangered Species Committee
* Expand this committee to include scientific representation.

Plant Conservation
* Revise the Act to provide protection for listed plants on all non-federal public lands.

* Encourage voluntary conservation on private lands.

* Expand trespass language regarding plant protection on private lands to include civil as well as criminal trespass.

* Provide controls for captive bred plants.

Permits for the Possession of Endangered and Threatened Species
* Require valid permits for the possession of specimens of all listed species, including carcasses and offspring of grandfathered individuals.

Scientific Take Permitting

* Simplify the scientific take permit process and allow renewals with minimal paperwork.

Incidental Take Permitting/Habitat Conservation Plans

* Provide for an exemption from the incidental take permit process for cooperating agencies who "take" as a part of a conservation or recovery process.

* For incidental take permits, allow for treating local populations as the unit of protection rather than individual organisms. Allow for a mirimum level of incidental take for animals as is currently done with plants under Section 9(a)(2)(B).

* Clarify potential "take" activities at the time of listing.

* Clarify if "take" includes habitat destruction or significant alteration.

* Authorize states to issue incidental take permits.

* Provide funds for development of Habitat Conservation Plans as part of the Section 7 consultation process for any "jeopardy opinions."

Landowner Assistance and Incentives

* Inform landowners of key populations prior to listing and seek their cooperation wherever possible via incentives, assistance, etc.

* Involve all impacted non-federal landowners early in listing, recovery plan development, designation of critical habitat, and when appropriate, Section 7 consultations.

* Develop written agreements with cooperating landowners, outlining their rights and the responsibilities of all parties involved.

* Purchase conservation easements from private landowners to conserve listed species.

* Provide management assistance in the form of written materials, consultation, equipment and supplies and on-site labor for cooperating landowners.

* Provide federal cost-sharing for species conservation efforts.

* Provide tax breaks and/or other financial incentives for persons willing to conserve rare species on their property.

* Include listed species protection as a factor in all federal land-use assistance or cost-share programs.

* Provide recognition to cooperating landowners and managers for their conservation efforts.

CURRENT STATUS OF THE ENDANGERED SPECIES ACT IN WISCONSIN

Conservation and Recovery Successes

The Endangered Species Act (ESA) has been effective in protecting globally rare species in Wisconsin and throughout the country. Currently, nine federally endangered animals and seven federally threatened plants and animals reside in Wisconsin, as well fifty-six candidates. State, university, and private biologists have participated in research, inventories, recovery planning, management, and landowner contact efforts for the sixteen listed species and many other candidate species. Through cooperative agreements with the U.S. Fish and Wildlife Service (FWS), efforts to conserve and recover some of these species have been very successful in Wisconsin:

- Prelisting funds have allowed surveys and management efforts to be successfully conducted such that several candidate species are now secure and are no longer candidates for listing.
- Wisconsin has far exceeded its recovery goal of 360 nesting pairs of bald eagles.
- As of the winter of 1994-95, it had 18 wolf packs with a total of at least 83 animals.
- Peregrine falcons released as young birds from Wisconsin's metropolitan areas are now returning to the upper Midwest to raise their own young.
- Hundreds of property owners whose land harbors listed plants have been personally contacted and informed of the occurrences. The majority have voluntarily agreed to protect and manage the plants and their essential habitats.
- Dozens of public land managers and private landowners have learned of and begun implementing methods for perpetuating the habitat for the Karner blue butterfly (e.g., adjusting prescribed burn and mowing practices to protect this and other rare species).

Section 7 consultations have encouraged proactive discussions on development projects allowing cooperators to mutually revise the plans to accommodate rare plants or animals. Early communication and the voluntary involvement of thousands of citizens in the ESA process has allowed many of the federally listed species to not only survive, but to expand their populations in Wisconsin.

Opportunities for Improving the ESA

The ESA, along with public involvement, has greatly improved the prognosis for many U.S. species, and trade restrictions through the ESA and the Convention on International Trade in Endangered Species have helped slow the decline of species being exploited from the wild. Yet, due to the rapidly increasing rates of population growth and consumption of natural resources, the global rate of biological extinction continues to increase. Nationally, plants and animals are endangered due to combination of factors, with the primary concerns being habitat destruction, degradation and fragmentation. These habitat losses are contributed to by industrial, commercial, residential and agricultural development, exotic species invasions, grazing, logging, road building, poaching, hydrological changes and at times from natural catastrophic events such as hurricanes. In the face of

continued habitat loss, there are many ways in which the ESA could be improved to be more effective and compatible with the diversity of land uses and public needs.

Cooperative conservation and federal recovery efforts in Wisconsin have been limited primarily by insufficient funding and staff, both for the FWS and for cooperating state agencies and researchers. Increased funding would allow more biological surveys and life history studies of rare species, more effective conservation, management and recovery efforts and would provide incentives to increase involvement by private, university and agency biologists, as well as by landowners. Efficiency could be improved and conservation increased by conducting listing and/or recovery efforts concurrently for several species that share the same habitats, and by conducting multiple-state projects. Increased proactive habitat protection would help prevent species from declining to the point where extensive and costly recovery efforts are necessary.

The following document outlines recommendations for various aspects of the ESA that the WDNR has determined would improve the efficiency and effectiveness of the Act, as well as allowing increased flexibility and assistance to the public.

HIGHEST PRIORITY ISSUES FOR THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES

* SHIFT THE FOCUS OF SURVEYS AND CONSERVATION ACTIONS TO THOSE PRELISTING ACTIVITIES THAT WOULD PREVENT THE NEED FOR LISTING.

* INCREASE THE INVOLVEMENT OF THE STATES IN POLICY DECISIONS, PRELISTING SURVEYS, RESEARCH AND RECOVERY WORK.

* DEVELOP FINANCIAL AND TECHNICAL INCENTIVES TO LANDOWNERS TO ENCOURAGE CONSERVATION EFFORTS.

* EXPAND THE USE OF JOINT LISTING AND RECOVERY PACKAGES FOR TWO OR MORE RARE SPECIES INHABITING THE SAME HABITAT.

* REVISE THE INCIDENTAL TAKE AND HABITAT CONSERVATION PLAN PROVISIONS TO INCREASE FLEXIBILITY AND ASSURANCES FOR THE PUBLIC AND COOPERATING AGENCIES.

* EXPAND LISTING OPTIONS TO INCLUDE DISTINCT POPULATION SEGMENTS OF INVERTEBRATES AND PLANTS.

ISSUES AND RECOMMENDATIONS

Prelisting

Current Status

Past efforts have shown that prelisting activities such as extensive status surveys, research on limiting factors and conservation measures have been an efficient use of funds. Prelisting work often results in

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maintaining or recovering species to a level such that federal listing is unnecessary. Concurrent work on the conservation of multiple species can be an ecologically and economically sound method of protection.

Recommendations

Prelisting - The focus and funding for prelisting surveys and conservation work to prevent the need for listing should be increased. The states should be given the lead on such work due to their obligation to protect and manage resident species. The degree of success of these initial conservation efforts should be taken into account when making listing decisions.

Listing/Delisting

Current Status

As of April 1, 1995, there were a total of 1516 species on the federal list, 956 of which are resident in the U.S., 560 of which are foreign only. An additional several thousand candidate species (Category 1 or 2) are awaiting listing or further study. Since 1980, it has been estimated that at least 275 species have gone extinct while awaiting listing. It appears the primary limiting factors are insufficient funding, staffing and excessive bureaucracy.

Despite the vastly greater numbers of invertebrates and plants in danger of extinction, past listing priorities have been with vertebrates, primarily birds and mammals. These species have also received disproportionately larger amounts of funding. Recent efforts to give greater emphasis to plants has been successful, with the majority of new listings in recent years being plants. There are also debates about geographical priorities for listing. Many scientists argue that funding should be focused on core areas of biodiversity and endemism (distinct geographic areas which harbor the only known populations of a given species) which are highly threatened due to rapid land use changes (e.g., Hawaii, California, Florida).

The decision to list a species as endangered or threatened is currently based solely on scientific evidence of its rarity and the threat to its survival. Economic and social factors are not taken into account at the time of listing although they are considered to varying degrees in the development of recovery plans and biological assessments, and in critical habitat designations.

Recommendations

Listing Priorities - The listing of multiple-species which rely on the same habitat should be done whenever possible. Areas of high endemism or diversity which still have the potential for long-term protection should receive the highest priority. Taxa which have been a low priority in the past, such as invertebrates and plants should be given higher priority for prelisting work, as there generally much less scientific data available and funding available for these species. Recovery potential of species should be realistically assessed at the time of listing.

Basis for Listing - Listing should continue to be based purely on a scientific basis rather than including socio-economic impacts as the scientific data best provides a subjective view of the species true status. The FWS should seriously consider recommendations from the appropriate state agencies

and tribes regarding how a species is listed, if it should be listed differentially in different parts of its range and when it should be delisted. Failure of the FWS to follow such recommendations should result in peer review. For species whose populations fluctuate greatly from year to year, known populations should be monitored for several years prior to listing if there is any question as to their status.

Listing Distinct Population Segments - Currently the law allows for listing of geographically distinct populations only for vertebrates. It is even more important to have such a listing for invertebrates and plants, as they are less mobile and less likely to migrate from one population center to another. Invertebrates also generally require less area in order to maintain population viability. Split listing would allow for greater flexibility in those regions where the listed species is more abundant, such as Karner blue butterflies in central Wisconsin.

Identify Applicable Prohibitions - At the time of listing the specific Section 9 "take" prohibitions which may relate to a newly listed species should be clearly defined. Actions which constitute "avoidance" should also be clarified at this time. This will allow non-federal landowners to be prepared for changes that may be necessary in their current or planned land use activities. Prohibition changes should also be outlined when moving a species from the threatened list to endangered.

Efficiency in Listing Procedures - The listing process should be examined for areas in which efficiency could be increased (e.g., multiple-species listing, reduced paperwork and delays, timeliness in decision-making).

Delisting - As with listing, delisting should be based solely on a scientific basis. Clearly defined procedures are needed for delisting and down-listing. This should include a public review period. Decisions regarding delisting do not need to go through the extensive review and bureaucratic hurdles as required for listing, but the decision should be subject to a public review period and appeals. Delisting should not be implemented until sufficient time has passed since a species has reached its target recovery goal and monitored to ensure a stable or increasing population as outlined in the recovery plan. Many species, (e.g., most insects and many plants) are subject to extreme population fluctuations from year to year, often due to climatological changes.

Recovery Planning

Current Status

In order to be done correctly, recovery planning involves experts and representatives from a wide range of perspectives. Ecological, social and economic data must be gathered and analyzed. Decisions must be made on the importance of various subpopulations on the survival and recovery of the species. Agreements must be reached amongst recovery team members as to where to focus conservation efforts and funding. This entire process may take several years and a significant amount of funding and commitment by all participants.

The ESA currently calls for recovery planning for all listed species, but does not give clear deadlines for plan development or guaranteed funding for implementation. Approximately 20% of all listed US species do not have recovery plans. The primary limiting factors are the lack of funding and regional

FWS staff. Representation on recovery planning teams seems to be inconsistent from plan to plan and between regions. Currently the Federal Advisory Committee Act requires that any representatives to federal committees (i.e., recovery teams) must be appointed directly by the Secretary of the agency and only after a notice has been published in the federal register and nominations to the committee are submitted. This causes tremendous delays and unnecessary paperwork by all parties involved.

Recovery plans typically take into account the costs of recovery efforts and direct economic and social impacts of planned recovery (e.g., river conservation needs to protect rare mussels). However, they do not currently require an estimate of indirect costs of protection or recovery (e.g.,the time and costs of redesigning development projects to minimize the disturbance to the mussels). It is especially difficult to predict future potential projects and their impacts at the time of recovery plan development. Recovery plans are not currently updated on a regular basis due to insufficient staff and funding.

Recommendations

Scheduling - Recovery planning should begin with a realistic assessment of recovery potential at the time of listing, with formal recovery planning initiated within a year after listing. Funding should be allocated each year to develop recovery plans for all species anticipated to be listed that year, as well as any currently listed species without recovery plans. Recovery plans should be updated as needed. If unanticipated projects or significant impacts involving the listed species evolve, recovery plans should be amended prior to the scheduled revisions.

State Representation - Because a sound and realistic recovery process requires financial support and technical expertise, the funding should primarily be directed to the state(s) where the expertise (and often the core of the population) resides.. If the state(s) can demonstrate competency and expertise, that state should take the lead on plan development. Represe tatives of each state where the species resides should be involved in the recovery planning process. In order to facilitate efficient appointment of state and other representatives to recovery teams, the Federal Advisory Committee Act should be amended. Appropriate representatives from Canada or Mexico should be involved with species which range across international boundaries.

Conduct Habitat-based Recovery Plans for Multiple Species - The planning and implementation of recovery actions should combine the needs of all known rare species within a given habitat type where-ever possible.

Socio-economic impacts - Strengthen the socio-economic portions of recovery plans to include a realistic assessment of known economic and social costs and benefits. Minimization and mitigation alternatives of potential impacts should also be dealt with during the recovery planning process. The plan should be released to the impacted public for a comment period prior to being finalized.

Implementing Recovery - Emphasis should be placed on attempting to recover species before they are listed, and to ultimately delist most species by allocating funding and other resources to priority recovery methods. During the recovery process there needs to be a clear demonstration of progress to encourage continued cooperation and conservation. As some species are clearly beyond the point at which recovery is likely or economically feasible, and the money that could be put into these species would be much better spent on others. For species which are not in immediate danger of extinction, a base level of funding should be appropriated to conduct relatively inexpensive conservation efforts

such as basic management, education and landowner contact. For those species that we cannot expect to recover, conservation efforts should be focus on protection of viable populations via acquisitions, easements and cooperative agreements with landowners. Continued monitoring should be conducted even after delisting as per the recovery plan.

Critical Habitat Designation

Current Status

The ESA allows for the designation of the core parts of a species range which are critical to its survival. Economic and social impacts are taken into account for designation. Although such designation only affects those projects that federal agencies are involved with, there are many perceived (and sometimes real) limits whereby this designation can be placed on land use. Therefore, critical habitat designation can be quite controversial. Such designation is to be proposed concurrently with the listing proposal, however this does not always occur. The FWS Secretary may choose to not designate critical habitat due to it being "not determinable" or "not prudent". About 20% of listed species now have critical habitats designated. There is no critical habitat designated in Wisconsin. The WDNR petitioned the FWS in the late 1970's for such designation for the Higgin's Eye pearly mussel in the east channel of the Mississippi River at Prairie du Chien, but controversy over harbor development and use has prevented such a designation.

Recommendations

Clarify Prohibitions - Clarify that prohibitions relating to critical habitat are only in regards to federal actions or federal lands. Incidental take permits for private lands within the boundaries of a designated critical habitat should not be categorically denied due to the location.

Private Lands Incentives - Incentives should be developed to encourage voluntary protection by non-federal landowners whose lands are within the designated geographic boundaries.

Increased Role of State Involvement

Current Status

The level at which the FWS involves states, tribes, local governments and species specialists in all aspects of the ESA seems to vary from region to region, and from species to species. There do not appear to be clear guidelines for standardizing such involvement.

Except for the regions of extremely high endemism (Hawaii, Florida, California, Texas, Puerto Rico and the Virgin Islands), most listed species range across two or more states. Coordination between these states is generally limited until they are all brought together for the recovery planning process. Recovery implementation is generally done on a state by state basis, depending heavily on the availability of federal funds.

The states generally have the expertise, staff and/or contacts to best conduct most of the prelisting and recovery work involved with listed species. Section 6 and 15 funding has been essential in conducting

status surveys and recovery efforts for candidate species, allowing numerous species to be removed from the candidate list as new populations were found and protected. State led habitat management for threatened plants and recovery work for wolves, eagles, peregrine falcons and other species has generally resulted in successful efforts in Wisconsin and other states.

Recommendations

Prelisting Work - Greater emphasis on prelisting surveys, research and recovery should be placed with state agencies. The FWS must provide standardized guidelines, coordination and oversight especially for migratory species and those species found in multiple states. They should assess the competency and expertise available in state programs to conduct conservation efforts.

Allocating Funds - All responsibilities transferred from the FWS to state or local governments must be accompanied by sufficient up-front funds to allow the state to plan and conduct the work. Annual section 6 grants should be approved and allocated to the states in sufficient time for the states to plan for the necessary field work. Section 6 funding should not be contingent on a cooperating state listing a species of concern at the equal or more protected level than the federal listing.

Policy Decisions - Involve appropriate states, counties and tribes in decisions regarding listing, delisting, critical habitat designation, biological opinions on formal Section 7 consultations and all aspects of recovery plan development. Empower cooperating state agencies to issue scientific and incidental take permits.

Funding

Current Status

The State of Wisconsin has received an average of $47,900 per year since 1973 from Section 6 and additional support from Section 15 for endangered species work for 1989 through 1994. This funding has been used for inventories, research on life history, ecological limitations and management techniques, land acquisition, recovery planning and implementation, and landowner contact and education efforts. A minimal amount of ESA funding has been provided to the state for only twenty of these plants and animals. Due to lack of research and status information, they remain as candidate species, in some cases up to nineteen years, even though some may be as rare, or rarer, than the listed species. In addition, the funding shortage has prevented the implementation of recovery strategies and permitted continued decline of listed species throughout the country. Conserving species before their populations decline to near extinction levels is much more cost effective and ecologically sound than attempting to recover species whose habitat or population size may no longer be viable.

Due to insufficient FWS funding, to conduct recovery efforts for listed species, the Department of Natural Resources has been forced to utilize its limited contributions to the tax check-off and Endangered Resources license plates, and to develop additional funding sources such as "Adopt an Eagle Nest," and solicit private contributions. These limited state funds have provided only a fraction of the need. Appropriations to the states need to be increased several fold to begin to meet the needs for basic research and status assessment for candidate and listed species, and for the recovery of listed species. Due to cooperative agreements between the FWS and the states, the states are bound to

conducting recovery efforts and would be burdened with the responsibilities and costs of implementation.

The General Accounting Office (GAO) extensively studied the Act and documented that ESA appropriations have averaged $40 million/year. This level of appropriation for the ESA is estimated to meet only 1% of the needs for the approximately 2286 critically rare species. This is in sharp contrast to the $300 million/year spent for mostly game mammals and birds through the Pittman-Robertson fund (funds obtained from a tax on sporting goods).

Lack of staff in FWS headquarters, regional and area offices also causes extreme delays in all aspects of listing, permitting, developing habitat conservation plans and associated environmental impact statements, recovery planning and appropriations.

Recommendations

Increase Appropriations - Appropriations to fund the Act should be dramatically increased, with minimum funding levels mandated. The percentage of funding allocated to Section 6 and Section 15 grants to the states should be expanded to conduct status inventories, research, planning, recovery, management, long-term monitoring and land-owner contact.

Recovery Plan Implementation Fund - Establish a fund dedicated to implementing approved recovery plans and conducting long-term monitoring of listed species.

Education Fund - Establish a fund dedicated to public education in regards to rare species protection in general and to meet the education needs outlined in recovery plans.

Landowner Incentive Fund - Establish a fund specifically to working cooperatively with landowners and providing incentives to enhance and protect rare species habitat.

New Funding Sources - Develop and implement new funding sources similar to the Pittman-Robertson or Dingle-Johnson fees. Potential sources include:

- For prelisting efforts, the proposed "Wildlife Diversity Initiative," a user fee put on the sale of outdoor recreational equipment not subject to Pittman-Robertson of Dingle-Johnson taxes for hunting and fishing equipment);
- Taxes on the importation and/or propagation of potentially invasive non-native species of plants and animals;

Section 7 Consultation

Current Status

Section 7 of the Act requires agency consultation with the FWS for all projects which are on federal lands, utilizing federal funds or requiring federal approval if there is any potential for impacting a listed species. The FWS works with project sponsors to develop alternative plans or methods which do not harm the species in question. According to the 1992 GAO report on the ESA, out of 16,161 informal consultations done nationwide between 1987 and 1991, 2050 (13%) were taken to the level

of formal consultations. Of these, the FWS provided 181 "Jeopardy Opinions" which state that the proposed action could jeopardize the species and ask for revisions to the project (1.1% of consultations). The majority of these projects (158) were resolved by developing alternatives to allow the project to continue. Therefore, only 1/7th of 1% (23) of all consultations on federal lands or federally approved or funded projects resulted in conflicts which did not allow the project to proceed. Section 7 allows federal agencies an alternative to the incidental take permit/habitat conservation plan process required for non-federal projects. Several Section 7 consultations in Wisconsin have been successfully resolved.

Recommendations

State Involvement - State conservation agencies should be involved in the development of biological opinions and the resolution of any projects requiring mitigation. In those states which have developed approved state level recovery plans, all federal agencies must consider these plans and coordinate actions with the appropriate state agencies.

Consultation with Non-federal Agencies - Section 7 consultation should be expanded to cover other non-federal cooperating agencies, such as states, tribes, counties, municipalities or other agencies subject to cooperative agreements. Such an agreement should release cooperating agencies from the need to obtain scientific and incidental take permits. Funding may need to be provided to the cooperating agencies to develop assessments to conduct consultations. Section 6 will need to be expanded to allow for additional public agencies to develop federal cooperative agreements. Such agreements should include state involvement.

Endangered Species Committee

Current Status

Section 7 of the ESA sets up the Endangered Species Committee to make final decisions on implementation of the Act in cases of extreme public dissention. The committee currently is composed of six agency heads plus one representative of the affected state.

Recommendations

Scientific Representation - A more balanced committee should be developed by adding a few members representing scientific organizations (e.g., National Academy of Science, Smithsonian Institute, National Science Foundation).

Plant Conservation

Current Status

The ESA affords far less protection to plants than for animals. Federally listed plants are protected only on lands under federal jurisdiction, when jeopardized by a federally funded project, or when taken in violation of a state law. They are not otherwise protected on state, county and other public

lands not under federal jurisdiction, nor are they protected on private lands. The endangered species laws in many states have limited or no protection for rare plants. Wisconsin's endangered species law, for example, does not allow protection of federally listed plants on non-federal public lands with respect to forestry, agriculture or utility projects.

On private lands, enforcement may only be done as part of the affected state's criminal trespass law. In Wisconsin and other states, trespass is enforced only by a civil trespass law and not a criminal law.

The portion of the Act covering endangered and threatened species held in captivity or controlled environments covers animals only. Permitting for plants held outside of their natural environment is not covered. This results in difficulties with enforcement and with preventing the illegal removal and planting of listed species.

Recommendations

Plant Protection on Public Lands - Revise the language in Section 9 of the Act to expand protection and conservation of federally listed plants on all public lands outside of federal jurisdiction, noting the need to protect species in a manner that does not cause undue economic or social disruption. This should be linked to cooperative agreements with any cooperating non-federal landowners. Inform property managers of known or suspected occurrences of listed species on their property as early as possible, and clarify their rights and responsibilities in regards to conserving these species and their habitats.

Voluntary Protection on Non-federal Lands - Land owners/managers of key populations of federally listed plants (as identified in the recovery plans) should be contacted and informed of the occurrences and encouraged to cooperate in their protection. Funds should be made available to the states to fulfill this responsibility. Financial and other incentives should be available to cooperating landowners (see Landowner Assistance section). This approach has been very successful in Wisconsin with a high level of voluntary participation.

Trespass Laws: Civil vs. Criminal - Expand landowners rights and the plant protection by revising the language in Section 9(a)(2)(B) to include plants taken from private lands in violation of both criminal and civil state trespass laws.

Plants in Captivity - Provide for coverage under the ESA for federally listed plants held in controlled environments (i.e., propagated or wild-dug plants).

Permits for the Possession of Endangered and Threatened Species

Current Status

Federal permits are required for the import, export and interstate transport of all endangered and threatened species. However, permits are not necessarily required for possession of these species. Enforcement is limited by these rules as conservation officers must intercept the specimens as they are crossing state or international boundaries. The grandfathering of the progeny of exempt specimens also makes enforcement extremely difficult.

Recommendations

Permits for mounted specimens -Require valid federal permits for the possession of all listed animals (United States and Foreign), including mounted specimens and other carcasses. All specimens in a persons' possession at the time of the 1973 passage of this Act should be grandfathered, with the owners being given written verification of their legal possession of the grandfathered specimens. Revise the Act such that permits are required for all offspring of any listed animals which are exempt from permitting due to their being in possession prior to their listing.

Scientific Take Permitting

Current Status

Activities resulting in an incidental take which are done primarily to manage for a listed species may be allowed with a scientific permit. The subpermit plan which must be submitted to obtain such a permit is required to be very detailed and extensive, and must be rewritten and submitted every year. In Wisconsin there are landowners who are ideal cooperators; conducting habitat restoration, research and extensive surveys. However, requiring that subpermits be rewritten each year is too much paperwork, and discourages application and subsequent conservation research. Also, monitoring requirements are often too stringent, deterring management due to the time and funding restraints.

Recommendations

Simplify the Process - Simplify the application process for obtaining scientific take permits. Allow renewals to be done quickly and easily with a minimum amount of paperwork. Allow for multi-year permits and give states and other cooperating agencies broader discretion. Where a conservation plan is in place, allow states to issue scientific take permits. Keep monitoring requirements to a level that is reasonable. When habitat conservation plans (HCP's) are in place, allow for scientific take to be covered in addition to incidental take for the duration of the HCP.

Incidental Take Permitting/Habitat Conservation Plans

Current Status

Section 10 of the Act allows for the "taking" of any individuals of an endangered or threatened species when that taking is incidental to an otherwise lawful activity. This is provided for by an incidental take permit, which is provided by the FWS only after the submission of an extensive Habitat Conservation Plan (HCP).

Incidental take is difficult to determine with small organisms that are hard to detect in all of their life stages, such as insects. This is further compounded with species like the Karner blue butterfly that are dependant upon fire, timber harvest, mowing or other disturbance to maintain their habitat. Listing of this species has forced the cessation of logging, mowing and brushing until a habitat conservation plan can be developed, a process that will take several years. Because of the large number of discrete occurrences of Karners, there is one HCP that is being developed for all sites in Wisconsin, involving dozens of businesses, agencies, organizations and individuals.

Recommendations

Conservation Efforts - Amend Section 10 to allow for the unavoidable incidental taking of endangered species if done as part of a conservation effort outlined in either a recovery plan or in a cooperative agreement with a state.

Revise and Simplify Permitting Requirements - The ESA or its administrative policies should be amended to treat local populations as the unit of protection rather than individuals for certain species (e.g., disturbance-dependent insects). An alternative recommendation would be to require an incidental take permit for individual organisms, but not require the development of an HCP unless there will be harm to the population. This is especially important when dealing with invertebrates given their life history characteristics. The ESA could also be revised to provide for a minimum level of unintentional take for animals, as is provided for plants under Section 9(a)(2)(B). The HCP and associated environmental assessment or environmental impact statement should be combined such that only one document need be written and submitted for public review.

Clarify Potential "Take" Activities -Identify activities that may result in "take" before listing so that the states and USFWS can be working with landowners to mitigate take by the time the species is listed. Consequently, landowners would know how they may be impacted by a listing and have the opportunity to express their concerns during the public comment period. The FWS should also clarify terms such as "reasonable," "limited," and "permissible" on a species-by-species basis.

Clarify "Takings" in Regards to Habitat Destruction - As of this writing the courts are examining the issue of habitat destruction and significant alteration as an aspect of takings, in the Sweet Home decision which is in appeal. Once it has been determined if take is to include habitat loss, this should be clarified in the Act.

Issuing Permits - Authorize states with approved HCPs issue scientific and incidental take permits.

Funding for Habitat Conservation Plans - Strengthen Congressional support and funding for developing HCP for situations involving incidental take, thereby supporting studies, management plans and recovery efforts to prevent land use conflicts. Through Section 7 consultations, any "Jeopardy Opinion" reached by the FWS or the National Marine Fisheries Service (NMFS) should automatically trigger funding and the development of an HCP. This plan should address the status of the species throughout its range and focus on activities in the area of concern.

Landowner Assistance and Incentives

Current Status

As the majority of occurrences of federally endangered and threatened species are found on non-federal lands, implementation of the ESA should put much greater emphasis on working cooperatively with landowners. This includes tribal lands, other public lands (states, counties, local jurisdictions), and private landowners (industries, organizations and individuals). Federal, state and local regulations relating to listed species vary depending on land ownership and the species involved (i.e., plants vs. animals). As the stewards of land held in the public trust, public land managers have a responsibility

to manage their property for the public good. In many cases this may involve the protection and management of rare species and habitats. Many private landowners are also quite willing to cooperate in the protection and management of t! : :are species on their property, especially if it can be done in a manner that does not cause them undue hardship. Landowner cooperation has been very successful in Wisconsin and other states which have conducted programs to alert landowners to the presence of the rare species, and jointly determine the management needs for the site. The following aspects have been critical to successful acceptance and stewardship of rare species by landowners:

- personal and repeated contact by a consistent person with biological knowledge,
- basic information about the species on their land and their management needs,
- accurate information about their legal rights and responsibilities (federal and state) specific to the species on their land,
- a positive approach, explaining the uniqueness of their land and congratulating landowners for their past stewardship.

Cooperating landowners in Wisconsin were polled regarding what they would want out of a cooperative effort on rare species conservation. They expressed a strong interest in cooperation providing that they were dealt with on a individual basis by agency staff, and provided technical assistance, both in terms of informational materials and on the ground management assistance. Some level of recognition for their efforts was desired, however, financial support was of lesser importance to this group of landowners.

Recommendations

Contacting Key Landowners - Land owners/managers of key populations of federally listed species should be contacted early and inform :d of the occurrence and informed of their rights and responsibilities in regards to conservation. All efforts should be made to encourage the landowners to cooperate in protection and management. Funds should be made available to the states to fulfill this responsibility. Financial and other incentives should be available to cooperating landowners.

Involvement in Policy Formation - Landowners and public property managers should take a much more active role in rare species and community protection if they have input into the development of the policies which affect their lands. There should be opportunities for early involvement at all stages; including listing, development of recovery plans and habitat conservation plans, designation of critical habitat, and, when appropriate, in Section 7 consultations.

Management Agreements/Memoranda of Understanding - Written agreements should outline the responsibilities of both the landowner and the agency to give the landowners a clear idea of what is expected of them. Voluntary agreements are especially applicable for protecting listed plants and candidate species which are otherwise unprotected on private lands. Legally binding agreements may be necessary for certain situations. The FWS should provide funding to the states to coordinate landowner contact for all candidate and listed species.

Conservation Easements - Easements to protect rare species could be a very cost effective and politically expedient means of protection.

Management Assistance - Written materials, hands-on training workshops, management assistance, and equipment and supplies to conduct the necessary protection, management and recovery activities should be provided to landowners willing to manage for rare species on their land. The FWS could supply this directly or provide funding to state or local agencies or non-profit groups. It is critical that the agency contact person(s) be consistent over the years and readily available.

Cost-sharing for Conservation Work - Similar to the Forest Stewardship Incentive Program, landowners who agree to a specific management plan would be eligible for federal cost-sharing for protection, habitat management and restoration, species recovery, and possibly inventory and monitoring work.

Tax Incentives - Federal income tax breaks for persons willing to sign agreements to protect rare species on their property provide an excellent balance between private land rights and species protection. These should be available to all landowners with federally listed and/or candidate species on their lands, not only those covered by a Habitat Conservation Plan or recovery plan. Such incentives are especially important for plants, since typically plants receive less attention and this would strengthen and reward voluntary protection. Minnesota has a well established and successful wetland and prairie tax credit program that could be used for a prototype.

Federal Assistance/Cost-sharing Programs - Management planning and habitat conservation practices that are cost-shared or provide tax relief through federal programs such as Conservation Reserve Program, Wetland Reserve Program and Forest Stewardship Incentive Program, should mandate consideration of the conservation needs for listed species.

Recognition System - Cooperating landowners should be recognized in ways that are appropriate for them. Wisconsin has had success with providing a matted print of the species on their land, along with a letter of recognition and follow-up mailings of our program newsletter. Other methods might include plaques, photos, and a Landowner Appreciation Gathering (picnic, reception, etc.). Publicity should be used cautiously as many landowners do not want their name and address listed in a local paper, identifying them as having rare species on their lands.

CORRESPONDENCE/MEMORANDUM — State of Wisconsin

DATE: June 22, 1994 FILE REF:

TO: Natural Resources Board Members

FROM: Jim Addis

SUBJECT: Karner Blue Butterfly - Habitat Conservation Plan

I want to inform you of a significant project we are undertaking to deal with the Karner Blue Butterfly as a federally listed endangered species.

The Department will be leading a highly integrated effort involving the forest products industry, utilities, public landowners, the U.S. Fish and Wildlife Service and others to develop a plan for the protection and management of this species and its habitat in the state.

The attached issue brief describes the project which, due to its complexity, will take 2 - 4 years to accomplish.

Through this project, we expect to prevent the many problems that can arise due to the Karner Blue's status as a federally endangered species.

I am also very hopeful that the processes we develop will serve as a model for future complex projects of this type.

If you have any questions please contact me or Chuck Pils, Director of the Bureau of Endangered Resources.

cc: George E. Meyer - AD/5
Chuck Pils - ER/4

Issue Briefing:	**Proposed Development of a Statewide Habitat Conservation Plan for the Karner Blue Butterfly**
Date:	June 3, 1994
Prepared by:	Cathy Bleser, Bureau of Endangered Resources
Contact Persons:	Cathy Bleser, Bureau of Endangered Resources, 608/266-8736 Randy Jurewicz, Bureau of Endangered Resources, 608/267-7507

Background

Since federal listing of the Karner blue, no incidental taking of this butterfly is permitted without a federal incidental take permit. For non-federal projects, a Habitat Conservation Plan (HCP) is required under the Endangered Species Act before any incidental take permit may be granted. The traditional HCP has promoted no net loss of listed species through development of measures to avoid, minimize, or mitigate incidental taking expected through development, forestry, etc.

Because the Karner blue and its lupine barrens habitat are quite widespread in Wisconsin, affecting so many interests and landowners, the Wisconsin DNR has proposed to the U.S. Fish & Wildlife Service that DNR lead the development of an HCP to cover the entire state. Representatives of Wisconsin's forest products industry have expressed to DNR their strong interest in this approach.

The DNR's draft Proposed Strategy to this statewide HCP has received preliminary approval by the U.S. Fish & Wildlife Service, and has been circulated to the Forest Products Industry and the County Forest Administration--two very key partners in this effort. On May 24, 1994, representatives of all these parties, together with a representative from Wisconsin Power & Light, met with DNR to begin formulating a common approach to the cooperative development of a statewide HCP. DNR's draft strategy identifies a large number of additional key partners and affected parties, who must next be invited to participate.

Summary of Proposed Approach

The goal of this statewide HCP would go beyond the traditional "no net loss" for given species approach. Given the imperatives (as described in the DNR's Biodiversity Report) and opportunities for protecting the threatened barrens ecosystem in our state, the goal of this HCP would be to actually begin recovery of this ecosystem, and the many rare or listed species it supports. The approach would emphasize protection of the dynamic *processes* that maintain shifting barrens areas and species populations across a landscape (such as appropriate fire, cutting, mowing, etc.), rather than relying solely on permanent protection of fixed parcels of land.

This approach has many benefits: By looking beyond just maximizing numbers of the Karner blue to recovering the imperiled habitat supporting an entire suite of rare organisms (some proposed for federal listing), we can begin taking the more proactive, coherent and cost-effective approach to endangered species protection. By forming a partnership of all affected landowners and interests to develop a conservation plan that is statewide in scope, we allow all parties to focus on the best opportunities in the state for barrens protection. This allows development to proceed via permitted take of Karner blue on other areas that are determined to be more suitable for timber production or other economic land use, as long as such taking does not jeopardize overall statewide recovery. Finally, by striving to coordinate patterns of disturbance and succession, and modifying some forestry practices, we can enhance the overall extent and quality of our barrens ecosystem while avoiding the burden to many private landowners resulting from traditional "lock-ups" of private lands in perpetuity.

Key Components in DNR's Proposal to U.S. Fish & Wildlife Service to Lead in Development of Statewide Habitat Conservation Plan for the Karner Blue Butterfly

Goal: To begin recovery of Wisconsin's oak and pine barrens ecosystem, habitat for the federally endangered Karner blue butterfly and a suite of associated rare organisms, through the establishment of a statewide Habitat Conservation Plan (HCP). An HCP is required for issuance of a federal incidental take permit.

Key Components

* Wisconsin DNR will serve as lead applicant in development and administration of the HCP.
* Wisconsin's statewide HCP would surpass the traditional "no net loss" approach and aim for net gain of Karner blue as well as the entire barrens ecosystem, which itself is imperiled globally.
* Key affected partners targeted as co-applicants include the County Forest Administration, the Forest Products Industry, several utility and railroad companies, Wisconsin Department of Transportation, Wisconsin Department of Agriculture, Trade and Consumer Protection, U.S. Forest Service, U.S. Environmental Protection Agency, and several other private landowners.
* Wisconsin DNR and the U.S. Fish & Wildlife Service would function as full partners in this process.
* Wisconsin DNR will ensure that sufficient staff time and resources are allocated to the development and permanent administraion of the HCP.
* Wisconsin DNR will work with other co-applicants to secure funding necessary to develop and implement the HCP.
* A broad coalition of affected parties and stakeholders will be involved, and then represented by a smaller steering committee that will draft the plan.
* The HCP process will include inventory and protection planning for key associated rare species, in addition to the Karner blue (e.g., the phlox moth, a federal category for listing and Endangered in Wisconsin; the prairie fameflower, fed. categ. for listing, and the frosted elfin butterfly, Threatened in Wisconsin, lupine-obligate like the Karner blue).
* The HCP will be dynamic enough to allow adaptations to new survey and research findings, new landowner contacts, or catastrophic events (e.g., wildfire).
* The HCP will be coordinated with Karner blue Federal Recovery Planning to ensure compatibility.
* This process will approach recovery through protection of ecological processes (e.g., disturbance regimes) necessary to maintain the barrens community; in many cases this approach is preferred to permanent protection of fixed parcels of land.
* Recovery efforts will focus on Wisconsin's excellent opportunities on public lands in Central Wisconsin and Northwestern Wisconsin.
* An Interim HCP will be developed to secure an incidental take permit for the Karner blue to allow needed flexibility to focus our resources on recovery of populations.
* WDNR will develop necessary statutory and administrative rule changes to establish an incidental take permit process for state-listed species. (At present, no incidental take is allowed for such state-listed species as the phlox moth and the frosted elfin butterfly, both of which occur on barrens habitat.)

6/14/95

KARNEF BLUE BUTTERFLY HCP PARTNERS and PARTICIPANTS

PARTNEF S ORGANIZATION	KEY CONTACT (alternate)
ANR PIPE INE	John Shafer (Jack Hamilton)
CONSOL TED PAPER	Miles Benson (Dan Hartman)
GEORGI CIFIC	Bill Gilbert
JOHNSC MBER CO.	Fred Souba, Jr.
NORTHS TATES POWER CO.	Pamela Rasmussen
NORTH ERN WISCONSIN ELECTRIC CO.	Mark Dahlberg (Connie Martinson)
THE NA E CONSERVANCY	Peter McKeever (Nancy Braker)
THILMA	Doug Barncard (Sharon Haines)
Wiscons ounty Forests:	
B ETT COUNTY	Mike Luedeke
K COUNTY	Mark Heil
CLAIRE COUNTY	John Staszcuk
SON COUNTY	Bob Hess
AU COUNTY	Dale Dorow
OE COUNTY	Norman Culpitt
TO COUNTY	Charles Fleischman
BURN COUNTY	James Varro
COUNTY	Dave Draves (Paul Westegaard)
WISCON DATCP	Ursula Petersen
WISCON NR	Chuck Pils (Jim Christenson)
WISCON APER COUNCIL	Earl Gustafson
WISCON OWER & LIGHT	(vacancy)
WISCON VER POWER CO.	Mark E. Anderson

OTHER EAM PARTICPANTS:
A numbe vate individuals, scientists, and academicians and representatives of:

MENOMI NDIAN TRIBE
MOSINE PER
NECEDA TIONAL WILDLIFE REFUGE
SIERRA
UW MAD
UW STEV POINT
WAUPAC OUNTY HIGHWAY COMMISSION
WISCON UDUBON COUNCIL
WISCON OUNTY FOREST ASSOCIATION
WISCON DEPARTMENT OF TRANSPORTATION
WISCON ELECTRIC POWER COMPANY
WISCONSIN ENVIRONMENTAL DECADE
WISCONSIN PUBLIC SERVICE
WISCONSIN STATE CRANBERRY GROWERS ASSOCIATION
WISCONSIN WOODLAND OWNERS ASSOCIATION

STATEMENT OF MURRAY LLOYD, BLACK BEAR CONSERVATION COMMITTEE (BBCC)

Chairman Kempthorne, Ranking Minority Member Reid, Members of the Subcommittee, thank you for this opportunity.

I am speaking today on behalf of the Black Bear Conservation Committee (BBCC), a coalition of landowners, State and Federal agencies, private conservation groups, forest industries, agricultural interests, and the academic community that have been working together for the past 5 years to protect and restore the Louisiana Black Bear and its habitat in Texas, Louisiana and Mississippi.

When the Louisiana Black Bear was proposed for listing as threatened on the Federal Endangered Species Act (Act) in June 1990, I was chairman of the Louisiana Forestry Association's Wildlife and Recreation Committee while at the same time serving as Conservation Chair of Louisiana Chapter of the Sierra Club. I noticed that national groups from the timber industry and the environmental community began to focus their attention on the bear and seemed intent on importing the conflict in the Pacific Northwest into our region.

We chose instead to form a group with representation from all stakeholders who agreed to leave their organizational biases at the door and work together to identify the most expansive common ground that was least intrusive on private landowners.

The primary threat to the bear was habitat loss and fragmentation. This was something that none disputed. Hardwood bottomlands in the bear's historic range had been reduced from 24 million acres in 1883 to only 5 million in 1989, an 80 percent reduction in habitat.

We discovered that the primary cause of this habitat loss was not, as many assumed, timber harvesting practices, but rather government programs that encouraged the wholesale conversion of the area to soybean fields.

Additionally, we found that 90 percent of the remaining black bears in the South are on private land, which makes sense because 90 percent of the land is in private ownership. This fact told us two things—one, that private landowners were not the problem, and two, that we were not going to be successful in restoring the bear and its habitat without the full cooperation of these landowners.

The U.S. Fish & Wildlife Service (Service) realized and acknowledged that timber harvesting, so long as it is done on a sustainable basis, is not a threat to the bear. Contemporaneously with the listing of the bear as threatened, the Service issued a special rule exempting normal forest management activities from the take provisions in Section 9 of the Act.

Utilizing the inherent flexibility of the Act, this rule functions essentially as a regional HCP and incidental take permit. An important part of the rule is a caveat in the last paragraph which states that the "rule is subject to modification or withdrawal if the Service determines that this provision fails to further the conservation of the Louisiana black bear." This served effectively as a cocked 2x4 to keep everyone at the table.

Our goal in habitat restoration has not been preservation. By encouraging reconversion, we have promoted turning land that has been a headache to the farmer and a continuing expense to taxpayers into income-producing forest land which has the added benefit of purifying our water, reducing siltation in our streams and enhancing wildlife.

The BBCC's successes have been many.

We have funded and coordinated over $900,000 of research projects in the region.

We have provided information and education to the general public, landowners and management professionals.

We have published the "Black Bear Habitat Management Guidelines".

We have developed a comprehensive restoration plan.

We have leveraged incentives by coordinating with existing programs such as the Wetlands Reserve Program.

The reasons for our success have also been many.

We were lucky enough to have the Endangered Species Act. It alerted us to the situation early enough for us to still have alternatives and management flexibility in addressing the problem. It also served as an "encouragement" for some to come to the table.

We used a regional approach that was based on science rather than emotions being driven by national agendas.

I think that it is worth noting that we began the Black Bear Conservation Committee with a Republican Administration and a Democratic Congress. We now have a Democratic Administration and a Republican Congress. To the bears and to us this has not made one bit of difference.

The Black Bear Conservation Committee is a model for natural resource conflict resolution. We will continue to strive in this effort because we know that we have

BLACK BEAR CONSERVATION COMMITTEE NEWSLETTER

RESTORE The BEAR

Volume 2 No. 1 1993

The **Black Bear Conservation Committee** (BBCC) is a broad-based coalition of concerned individuals and organizations working in a spirit of cooperation to manage and restore the Louisiana black bear to suitable habitats within its historic range. The information included in this newsletter is designed to keep those interested in this unique effort up to date with Committee progress and hopefully encourage participation from other interested parties.

For More Information, Contact ..... Paul Davidson, Coordinator
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Edited by Paul Davidson

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Chairman's Comments

by Jimmy Bullock, BBCC Chairman

In October of 1990, a group of professional resource managers representing state and federal agencies, forest industry, conservation organizations, the agricultural community, and academia met in Alexandria, Louisiana, to organize the Black Bear Conservation Committee (BBCC). Their purpose was to formulate a strategy for the management and restoration of black bear in the tri-state region of Louisiana, Mississippi, and east Texas. Working together, this innovative public and private sector alliance has made tremendous progress since that initial meeting.

Highlights of the progress achieved by the BBCC to date include:

- The BBCC has raised the public's awareness of the need to actively address management and restoration of black bear. There are now over 50 member organizations in the BBCC working together to develop a management strategy that considers the needs of the bear as well as those interests that will be affected by a larger bear population.
- A BBCC Coordinator position has been created and staffed. Mr. Paul Davidson, BBCC Coordinator, is ably serving in an administrative and extension capacity, working with agencies, landowners, and resource managers to include black bear management in land use decisions.
- Research objectives have been identified, and the BBCC serves to coordinate regional research efforts among federal, state, private and corporate stakeholders, thereby avoiding unnecessary duplication of effort. To date, over $600,000 has been committed to black bear research in the region.
- The BBCC has developed and published a "Black Bear Management Handbook" to assist landowners and resource managers who wish to incorporate practices that promote the black bear and its habitat into the overall management of their land.
- The BBCC has initiated development of a comprehensive restoration plan for black bear in the three state region. This plan, the initial draft of which has been completed, identifies actions that benefit the bear and its habitat, and promotes the philosophy that bear are an asset to the landowner rather than a liability.

I would like to take this opportunity to thank each of you who support, either actively or passively, the efforts of the BBCC. Though there remains much to be done, there are indications the past downward trend in bear numbers and bear habitat can be reversed.

Current U.S. Forest Service survey data for Louisiana and Mississippi indicate a leveling off and /or reversal of the decline in forested habitat within the bear's historic range. The decline of forested habitat in the South Delta Parishes of Louisiana (i.e. Atchafalaya Basin) slowed appreciably during the last survey period, and forested acreage actually increased in the North Delta Parishes (Tensas Basin). In Mississippi, total timberland acreage increased within the historic range of the bear. Other data from both states indicate the quality of potential bear habitat is improving as (1) hardwood forests are replacing pine forests on many upland sites, (2) sawtimber acreages are increasing and (3) hardwood growing stock is increasing.

Since 1986, over 350,000 acres in the range of the bear in Mississippi and Louisiana have been reforested through the Conservation Reserve Program (CRP). Additional acres have and will be reforested through other conservation initiatives such as the Wetlands Reserve Program.

Attitudes of landowners and the public in general are changing and there is growing acceptance of the black bear. The bear should be viewed as an asset, a unique and treasured wildlife heritage. People are learning that with responsible planning and management, the bear can coexist with many land uses, including forestry, agriculture and outdoor recreation. Mississippi and Louisiana Congressional delegations have strongly supported black bear management and restoration efforts.

The public has developed a lack of tolerance for the illegal poaching of black bear. In one instance in Mississippi, hunting clubs raised a reward of several thousand dollars for the arrest and conviction of the person(s) responsible for illegally killing a black bear. Defenders of Wildlife, in cooperation with the Louisiana Department of Wildlife and Fisheries through Operation Game Thief, has initiated a major reward program for information leading to the arrest and conviction of anyone who illegally kills a Louisiana black bear. The civil penalty for killing a bear in Louisiana has been raised to $10,000 and efforts are underway to do likewise in Mississippi. The black bear is now the official state mammal in Louisiana.

Perhaps the best hope for black bear restoration in Louisiana, Mississippi and east Texas rests with the continued efforts of the Black Bear Conservation Committee. As stated in a letter from the BBCC to the U.S. Fish and Wildlife Service: " If restoration of the black bear is to be successful, we believe it will be through this new alliance of public and private interests working together solely for the sake of the resource and nothing else. The Black Bear Conservation Committee pledges to continue its role to that end".

More important are the attitudes of those who read this publication. The BBCC asks that you support the goal of maintaining a healthy black bear resource, and restoring a truly unique and magnificent wildlife heritage. Working together, the BBCC will result in a positive situation for all stakeholders, and most importantly, for the black bear. ■

U.S. Fish and Wildlife Service Lists Louisiana Bear

Final Rule Exempts Normal Forestry Management Practices

As of February 6, 1992, the Louisiana black bear *(Ursus americanus luteolus)* has been listed as a threatened species under the authority of the Endangered Species Act of 1973. The Service also designated all free-living bears within Louisiana, southern Mississippi and eastern Texas as threatened due to similarity of appearance. The ruling includes a special rule allowing normal forestry management practices in occupied bear habitat with certain limitations.

The Service determined that the Louisiana black bear should be listed as a threatened species based on several factors, the most significant being habitat loss. The suitable habitat in the region had been reduced by 80 percent by 1980 and through the early 1980's another 165,000 acres were cleared annually. It was felt that the traumatic losses of bottomland hardwood forests and forested wetlands show that existing regulatory mechanisms for protection of such habitats are inadequate. If illegal killing is also proven to be a threat to the bear, the possibility of stiff penalties associated with the Act in addition to state laws and regulations may serve as a deterrent.

In its final rule, the Service stated that it had assessed the best scientific and commercial information available regarding the past, present and future threats faced by the Louisiana bear and believed that the animal meets the criteria for protection under the ESA. Endangered status was not chosen because the threats were not believed to be such that the bear was in imminent danger of extinction.

To avoid unnecessary permitting requirements the Service promulgated a special rule exempting normal forestry management activities. Based on recent studies in the Tensas River Basin in Louisiana, the Service takes the position that habitat needs of the Louisiana black bear are compatible with normal forestry management as practiced in this animal's range. Some restrictions pertaining to den trees are included in the special rule. Because of their importance, actual den trees or candidate den trees in occupied Louisiana black bear habitat are to be maintained.

More or fewer restrictions in the special rule may become appropriate as results of ongoing research and recovery planning are assessed.

For further information contact:
Mr. Wendell A. Neal
U.S. Fish and Wildlife Service
6578 Dogwood View Parkway,
Suite A
Jackson, MS 39213
(601) 965-4900

Defenders Announce Anti-Poaching Fund for Louisiana Bear

A $25,000 reward fund to combat poaching of the Louisiana black bear has been announced by the national group Defenders of Wildlife.

Defenders will provide up to a $5,000 reward to any individual or group of individuals providing information leading to the conviction or plea bargain resulting from the illegal take of a Louisiana black bear.

The reward fund is being sponsored in cooperation with the U.S. Fish and Wildlife Service, the Louisiana Department of Wildlife and Fisheries through Louisiana Operation Game Thief, and the Mississippi Department of Wildlife, Fisheries and Parks. The project has been endorsed by the BBCC.

"Defenders' reward program should help provide an insurance policy to discourage, and ultimately halt, the poaching of the Louisiana bear throughout its entire range" said Roger Schlickeisen, President of Defenders of Wildlife.

A press conference was held at the Audubon Zoo in New Orleans to announce the reward fund. With Defenders of Wildlife at the press conference were representatives from the Louisiana Department of Wildlife and Fisheries, Louisiana Operation Game Thief, U.S. Fish and Wildlife Service, the BBCC, and special guest Theodore Roosevelt IV.

Also present were staff from the offices of U.S. Senators J. Bennett Johnston and John Breaux. Both Senators have been enthusiastic supporters of efforts to restore the Louisiana bear. ■

BBCC Produces Poster to Educate Hunters

With a grant from the Louisiana Chapter of Safari Club International the BBCC produced, printed and is distributing posters to educate the hunting community about the status of the Louisiana black bear and the legal ramifications involved in harming one of these animals. Included in the information on the poster are the phone numbers of the state and federal wildlife agencies as well as Operation Game Thief and the BBCC Coordinator. The $5,000 reward for information leading to a conviction or plea bargain in bear poaching cases is also highlighted.

Just over half of the $3,000 grant was used in the production of the 2500 posters. The remainder will be used to produce an educational brochure that will include the same information with some additional general information about bears in our region. ■

BBCC Receives Conservation Awards

Chairman Jimmy Bullock receives LWF Conservation Organization of the Year Award from Secretary Joe Herring of the Louisiana Department of Wildlife and Fisheries.

The Black Bear Conservation Committee has received two very prestigious conservation awards. At the Louisiana Wildlife Federation's annual meeting in February of 1992, the BBCC received the award for Conservation Organization of the Year for 1991. The award, part of the Governor's Awards Program for Conservation Achievement, was presented to Jimmy Bullock, chairman of the BBCC. The group had been nominated by Anderson-Tully Co., the Louisiana Forestry Association, and The Nature Conservancy of Louisiana.

The BBCC was selected as Conservation Organization of the Year for 1992 by the Mississippi Wildlife Federation. Chairman Bullock received the award at MWF's 33rd Annual Conservation Achievement Awards Banquet in Jackson, Mississippi, on February 6,1993.

These awards represent the efforts of many individuals and organizations who have given their time and energies to make the Black Bear Conservation Committee a success. KEEP UP THE GOOD WORK!!!!■

Funding Approved For Land Acquisition at Tensas River NWR

A $1.98 million addition to the U.S. Department of Interior budget was approved by Congress in Fiscal Year 1993 for purchase of land for additions to the Tensas River NWR.

U.S.Senator J. Bennett Johnston (D-LA) initially requested $9 million to complete the aquisition of land at the Tensas Refuge. The U.S. Senate approved the entire request, but the amount was pared down in Conference Committee.

The U. S. Fish and Wildlife Service and The Nature Conservancy are negotiating with landowners on a cooperative purchase and hope to buy as much as 5,000 acres.■

Support for BBCC

Without the support of all of its members the BBCC would not have succeeded in accomplishing what it has. The commitment and cooperation exhibited by the BBCC is unprecedented in dealing with controversial resource management issues, especially those concerning a federally listed species. The day to day operations of the organization also require significant financial and manpower resources. The BBCC would like to thank the numerous organizations that have donated money and /or significant manpower to make our efforts fruitful.■

A very special thanks goes out to:

American Forest Council, American Forest Resource Alliance, Anderson-Tully Co., Champion International, Crawford and Bourland, Inc., Delta Council of Mississippi, Delta Wildlife Foundation, Georgia-Pacific Corp., International Paper Co., James River Corp., Louisiana Department of Wildlife and Fisheries, Louisiana Forestry Association, Louisiana Wildlife Federation, Mississippi Department of Wildlife, Fisheries and Parks, Mississippi Forestry Commission, Mississippi Forestry Association, Mississippi Museum of Natural Science, Mississippi Wildlife Federation, Safari Club International-Louisiana Chapter, Safari Club International-Central Louisiana Chapter, Sierra Club-Delta Chapter, Texas Forest Service, The Nature Conservancy, U.S. Fish and Wildlife Service, the U.S. Forest Service and Wildlife Technical Services, Inc.

BBCC Presents Awards

Jimmy Bullock presents "Chairman's Award" to Dr. Bill Wall.

Over the past year the BBCC has presented two awards for outstanding efforts and achievements toward the goal of restoring the Louisiana black bear.

Vice-Chairman Tom Bourland presented the "BBCC Stewardship Award" to Deltic Farm and Timber, Inc.. Bourland presented the award to the Board of Directors of Murphy Oil Company, the owner of Deltic Farm and Timber, Inc.. Deltic consists of about 8,000 acres of bottomland hardwood forest in Madison and East Carroll Parishes, Louisiana. Deltic properties contain one of the highest densities of black bears in the Southeast. Management of Deltic's lands through responsible timber harvest, rigid protection, and a tolerant attitude toward occasional depredation of agricultural crops has significantly enhanced the survival chances of the species. In addition, Deltic has cooperated extensively with research personnel from Tensas River NWR, the University of Tennessee, and others in telemetry and other habitat-related studies. Deltic is planting marginal farmland back to bottomland hardwoods and has in place a cooperative agreement to manage some of its wetlands for waterfowl. An agricultural leader, Deltic has been incorporating minimum tillage, grassed waterways, and other farm-related conservation practices. Deltic Farm and Timber, Inc. was presented a signed limited edition black bear print drawn by Louisiana artist Albino Hinojosa.

At the May 1992 meeting of the BBCC Chairman Jimmy Bullock presented the BBCC Chairman's Award to Dr. Bill Wall. Dr. Wall, (formerly Region Wildlife Manager with International Paper in Shreveport, LA, and now Wildlife Biologist with Potlach, Inc. in Lewiston, ID) served as Chair of the BBCC Habitat/Management Subcommittee and was instrumental in the initial development of both the "Black Bear Management Handbook" and the BBCC Restoration Plan. ■

The BBCC Needs Your Support

The continued success of the BBCC will be dependent on the continued support of those interested in restoring the Louisiana black bear. The BBCC has without doubt accomplished a lot, but a lot remains to be done. To implement the restoration plan will require continued support and cooperation, but will also require significant financial resources.

If you would like to play a role in the effort to restore the Louisiana black bear please consider making a contribution. Those making contributions of $25 or more will receive a limited edition black bear poster by Louisiana artist Albino Hinojosa.

Please send your contribution to:

Black Bear Conservation Committee
P.O. Box 52477
Shreveport, LA 71135

(or for tax-deductable contribution)

The Nature Conservancy (Black Bear Fund)
P.O. Box 4125
Baton Rouge, LA 70821

Ongoing Research on the Louisiana Black Bear

Researchers weigh a bear at Tensas River NWR.

Successful recovery of the Louisiana black bear will be dependent on adequate knowledge of these animals, their movement behavior, choices of foraging areas, denning sites, denning chronology, and the extent of their annual ranges. Recognizing the need for this knowledge, researchers have secured funding to study black bears in the region and approximately 24 scientists are involved in these projects. Over $600,000 of the estimated 1.3 million dollars needed to fully fund these projects have been secured.

Most existing data on the Louisiana black bear are from research done in the Tensas River Basin in Louisiana from 1988-90. The efforts to document the habits and characteristics of the bear in this area are continuing. Supervised by Dr. Michael Pelton of the University of Tennessee, graduate student Forrest Marchinton spent the summer of 1992 trapping, collaring, and monitoring bears on a fragmented forest tract in Madison Parish. The tract, known as the Blue Cat tract, is owned by Deltic Farm and Timber, Inc.

During June and July, eight different bears were captured. Of these, six had been previously collared. The captured bears were tranquilized, lip-tattooed, ear-tagged, and radio-collared. Weight and body measurements were taken, blood and tissue samples collected, and a premolar extracted from previously-uncaptured animals to determine age.

The Blue Cat tract, which has the highest apparent density of bears in the Tensas River Basin, has also been the most heavily trapped. Some bears seem to recognize conventional snare sets, and avoid or dig up the areas. Experiments with alternate types of trap-sets are ongoing.

Monitoring was done daily, and when practical, attempts were made twice daily. For a three week period, movements in 6 to 12 hour blocks were recorded on selected bears with the aim of obtaining a 24-hour movement-activity record. The animals are still being monitored by staff from the University of Tennessee.

One of the more interesting events of 1992 was the April capture of a large male bear on the Tensas River National Wildlife Refuge that wore eartags identifying it as a bear previously captured in the White River region of Arkansas in October of 1990. The bear had been relocated to the Seven Devils Wildlife Management Area near Monticello, Arkansas, over 100 miles north of the Tensas River NWR. The bear was radio-collared upon capture at Tensas River NWR and has been monitored since. He seems to like his new found home and has remained in the area.

Research in the Atchafalaya region in Louisiana is led by Dr. Richard Pace of the Louisiana Cooperative Fish and Wildlife Unit at Louisiana State University with the assistance of graduate students Philip Nyland and Robert Wagner.

Trapping activities in the Atchafalaya region, beginning in September of 1991 and continuing until mid-December, resulted in the capture and radio-collaring of eight bears. Trapping resumed in the summer of 1992 and resulted in the capture of an additional 26 bears of which 19 were radio-collared. An additional bear was captured in northern Point Coupee Parish in a three square mile forested fragment surrounded by agricultural fields. Through September 1992, 306 aerial homing locations were accumulated between the 28 collared bears. Among these, one was hit and killed by an automobile, two have been killed by gunshots, four have dropped their collars and another has disappeared either because of a faulty collar or some other cause.

Mississippi State University staff have initiated bear trapping operations and have collared three bears, two adult males and one adult female. The study, coordinated by Dr. Harry Jacobson, is taking place in western Coahoma County, Mississippi, near the Arkansas border. This is the beginning of a major study on bear use of forested habitats and the relationship between black bear ecology and forest management.

Cathy Shropshire, a PhD candidate at MSU, is conducting a series of sur-

Continued on page 8

Management Handbook Available to Landowners

The first edition of a "Black Bear Management Handbook" has been published by the BBCC and is available to landowners and land managers interested in black bear ecology and management of habitat for black bear.

The publication provides recommendations on management of different habitat types, from bottomland hardwood to upland pine. It discusses agricultural considerations, the positives and negatives associated with certain crops in bear habitat and the state and federal programs affecting habitat. It contains sections on resolution of human/bear conflicts and an introduction to the concept of landscape management, a coordinated approach in which various user groups work together to promote bear management over a large area. A long-range goal of the BBCC, the objectives of this approach in management for black bears include:

1) preventing further habitat destruction,
2) establishing corridors between existing fragmented habitat,
3) integrating management among tracts to effectively use fragmented resources, and
4) focusing efforts of a diverse user group toward common management objectives that benefit the bear.

With input from the membership of the BBCC the publication was edited by Everard Baker and Patti Henson of the Mississippi Forestry Commission. Funding was provided by the American Forest Resource Alliance and American Forest Council and printing was done at cost by Davis and Associates of Ruston, Louisiana.

Copies of the "Black Bear Management Handbook" are available for those interested in the future of the black bear in the region. Call or write the BBCC Chairman or Coordinator for more information. ■

BLACK BEAR RESEARCH

Continued from page 7

veys to assess public attitudes and tolerance for black bear in Mississippi. A landowner survey has been mailed to 1,200 Mississippi landowners, a timber company survey has been mailed to eight companies with holdings in Mississippi, and 172 surveys have been mailed to beekeepers in the state.

Scientists from Virginia Tech University have secured funding for a three year study of bear taxonomy that will take a comprehensive look at both genetics and morphometrics. Eighteen bear populations throughout the Southeast (including samples from the subspecies *luteolus*, *floridanus* and *americanus*) as well as populations outside the Southeast will be sampled.

A Geographic Information System (GIS) mapping of occupied and potential black bear habitat on public and private lands in the Southeast Coastal Plain is progressing. John Wooding and Jim Cox of the Florida Game and Freshwater Fish Commission have completed the first draft, now being reviewed by researchers from each state.

The ongoing research on the Louisiana bear would not be possible if not for the support of the

U.S. Fish and Wildlife Service, the Louisiana Department of Wildlife and Fisheries, the Mississippi Department of Wildlife, Fisheries and Parks, the U.S. Forest Service, the USFS Southern Forest Experiment Station, Louisiana State University Agriculture Center, the Louisiana Cooperative Fish and Wildlife Unit, the University of Tennessee, Mississippi State University, Virginia Tech University, Anderson-Tully Co., James River Corp., Gulf States Utilities Co., and the National Council of the Paper Industry for Air and Stream Improvement, Inc. Numerous other wildlife professionals as well as industrial and private landowners, hunting clubs and farmers have made this work possible by providing assistance and cooperation and by allowing access to lands occupied by bears. ■

Procedure Needed for Handling Displaced Bears

by Maggie Heyn and Dr. Cheri Jones

Last spring, a bear cub taken illegally from a den near the Alabama/Mississippi state line was confiscated by enforcement agents from the Mississippi Department of Wildlife, Fisheries, and Parks and the U.S. Fish and Wildlife Service. Because there was not a procedure in place for handling displaced bears, the cub was cared for by various "bear-sitters", and experienced close human contact for about three months before a permanent home was found. Named "Honeysuckle", the female cub went on to win over the hearts of everyone who met her. But with all the handling, Honeysuckle became too attached to humans which caused problems with reintroducing the cub back into the wild.

This experience brought to the attention of the BBCC and others involved in bear restoration efforts the need for a set of guidelines on how to deal with displaced bears. As efforts continue to restore bear populations in the region, the possibility of wayward bears increases. Placing them back in the wild as efficiently, economically, and with the least amount of trauma to the animal is a goal of the Committee.

Scientists and researchers from throughout the country have been observing how to best care for and reintroduce orphaned bear cubs. Much of this depends on the age of the cub. If a very small cub is found, it will need to be fed from a bottle to replace the milk it usually receives from its mother. A bear cub can easily become attached to the humans who feed it and while this warms the hearts of humans, it is not in the best interest of the bear. Once released back into the wild, a bear that is too accustomed to humans does not have a good chance of survival. It may encounter other humans and consider them as friendly as its earlier bear sitters. If they consider the bear a threat or a nuisance, they may try to kill it.

To help solve the problem of attachment to humans, some researchers have recommended "using a disguise" when feeding captive bears. With small cubs, it might be good to wear a puppet, so that the cub can not see or smell the human hand. If the bear is older and can be fed solid food, it should be placed in the enclosure without the animal seeing the person who delivers it.

After captive bears are healthy enough, researchers can locate the best possible places to reintroduce them. Black bears roam for miles, so a site that is far from human inhabitants and provides the appropriate habitat is what researchers look for. If a cub is small and needs a "foster" mother, researchers who monitor the bear populations in the region should know where to find the best candidate. A sow will not usually adopt a cub unless she is tricked into it. Sometimes a substance like Vick's VapoRub is placed over her nostrils so that she can not smell the new cub's different scent. Researchers can also give the mother bear a mild drug, remove all of her cubs and replace them, together with their new sibling, after a couple of hours. Black bears are usually self-sufficient enough to be released into the wild at about 6 months of age. If large enough, they should be radio-collared so that researchers can monitor how well they adapt after release.

As efforts continue to restore black bear populations in our area, the chances of bears finding their way into unnatural situations increase. These may be orphaned cubs like Honeysuckle or perhaps animals that have been hit by cars or injured in some other way. While not normally threatening to man, the bears will encounter problems if they are not handled properly. For this reason, the BBCC is working to determine the best ways to deal with these animals. Locations need to be identified to properly house and care for them. These will likely be zoos in the areas of occupied habitat. Each location would need to have adequate staff in place, including veterinarians, and have a good working relationship with state and federal law enforcement officers, biologists, and bear rehabilitation experts. These people will be able to provide food for the bear, medical attention if necessary, and handle placing them back into their natural habitat. Ideally, there should be regional rehabilitation centers. The Audubon Institutes's Species Survival Center near New Orleans may be the ideal place to try to accommodate the needs of this region. However, until the details are worked out, arrangements need to be made with other zoos or suitable facilities.

Black bears that stumble out of their habitat and into ours provide great hope for the future of the entire species. Researchers are allowed a closer look at them as they are cared for in captivity and returned to the wild. However, this must be handled in the best way possible for them to survive. That is why the BBCC is hard at work establishing specific protocol on displaced bears. Successful black bear reintroductions will merit nothing but good results for bear and human alike. ■

The Louisiana black bear (Ursus americanus luteolus)

Use of Managed Forests by Black Bears

by T. Bently Wigley

Forest management can affect black bears through impacts on their food supply, escape cover, bedding and denning sites, and human access. Forest management activities often require road building or the opening of roads previously closed. Many experts believe that access management is the single most important forest management activity affecting black bear. Access management does not mean a prohibition of road building, but their subsequent management, be it closure or regulated access. Open roads in bear habitat greatly increase human activities that may have a negative impact on bears. The relationship between road and human densities can be weakened by closing permanent roads or using gates to control access. Regulated, well managed roads and roadsides will improve bear habitat, minimizing the chances of bears being hit by vehicles or harrassed by people.

Forest management also can affect the capability of habitats to produce foods for bear. Although activities other than feeding are important to bears, food availability can greatly influence habitat use. A carefully implemented timber harvest regime should ensure a steady supply of bear food above that of an unmanaged forest. Bear foods are often more abundant in logged areas than in unlogged forests, due in part to increased sunlight at the shrub-level.

A variety of foods such as hard mast (acorns, pecans, etc.), soft mast (fruits and berries), and insects are used by bears. Hardwood forests often provide a large amount of hard mast, and bears use these areas heavily in the fall. Although hard mast is often an important food item, it is not a reliable food in some areas. Acorn production is often low, and even in high production years the mast is often gone from the ground by February. Since hard mast yields vary dramatically, foods other than hard mast, and a variety of habitats, are necessary to support healthy bear populations.

Soft mast is very important as bear food. Openings created by timber harvesting provide increased sunlight to ground and shrub-level vegetation, thus increasing soft mast production. In research done in the Tensas River Basin in Louisiana, bear were found to feed heavily on plants that grow in canopy openings created by timber harvest. Regenerating clearcuts, road margins and burns are good sources of soft mast and therefore are important to bears.

Forest management activities can affect the availability of escape and daybed cover and large trees for denning. Bears in the Tensas River Basin use thick cover, often logged in the past 1 to 5 years, for daybed sites and as escape cover. The logging slash and vegetative regrowth of briars, vines, and saplings, resulting from timber cutting in bottomland hardwood areas enhances the quality of escape cover. Escape cover is an important component of good bear habitat, particularly as forests become smaller and more fragmented, and as human encroachment and disturbance increases. In addition, rotting wood from logging slash harbors beetles, grubs, and other invertebrates that are protein-rich food sources for bears.

A critical component of bear habitat is availability of denning sites, including cavity trees. Present and potential cavity trees should be identified and maintained regardless of other stand management practices. Of 20 radio-collared bears in the Tensas River Basin in Louisiana, 38 percent used brushpile or groundnests for winter dens and 68 percent utilized den trees. While den trees may not be necessary for successful denning and reproduction in certain southeastern wetlands, in areas subject to seasonal flooding where dens located on the ground would become inundated, the availability of den trees enhances the quality of the habitat for bears. Where feasible, deadfall trees, logging slash and tops should be left for bedding and denning sites.

Prescribed fire is sometimes used in managed forests to control unwanted woody competitors to crop trees, reduce fuel loads, and to prepare sites for regeneration. Fire in the pine ecosystem is a natural occurance. To enhance the quality of habitat for bear, burning in pine stands should be conducted on a 3 to 5 year rotation, depending on conditions. Dry sites and those planted on poor soils should be burned less frequently. Streamside Management Zones, forested corridors along streams and drainages, should always be protected from fire.

Management of forests can definitely affect the quality of the habitat for bears. One of the objectives of forest management is to maintain a productive, highly vigorous forest. From a bear habitat standpoint, a productive forest stimulates yield from hard mast-producing trees and maintains a diversity of foods. Rotation length for crop trees and thinning should be designed to improve species composition, remove individual trees of poor quality or vigor, promote regeneration of desirable timber species, encourage food production and create escape and nesting cover for bear and a variety of other wildlife species.While bears may initially avoid cutover areas, their use of these areas increases as vegetation grows and as seed and fruit production increases. Timber harvest and prescribed burning are ways to increase diversity and quality of vegetation, leading to greater habitat diversity and more sources of food for bears. ■

Black Bear Conservation Committee Members

American Forest Resource Alliance
Anderson-Tully Co.
Arkansas Game and Fish Commission
Audubon Institute
Boise Cascade
Champion International
Crawford and Bourland, Inc.
Delta Environmental Land . . ast Association
Delta Wildlife Foundation
Deltic Farm and Timber, Inc.
Georgia Pacific Corporation
International Paper Company
James River Corporation
Louisiana Cooperative Fish and Wildlife Research Unit (LSU)
Louisiana Department of Wildlife and Fisheries
Louisiana Farm Bureau
Louisiana Forestry Association
Louisiana Landowner Association
Louisiana Office of Forestry
Louisiana Operation Game Thief
Louisiana State University; School Of Forestry, Wildlife and Fisheries
Louisiana Tech University; School of Forestry
Louisiana Wildlife Federation
Mississippi Beekeepers Association
Mississippi Delta Council
Mississippi Department of Wildlife, Fisheries and Parks
Mississippi Forestry Association
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Mississippi Museum of Natural Science
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United States Army Corps of Engineers, Lower Mississippi Valley Division
USDA/APHIS Animal Damage Control
United States Fish and Wildlife Service
United States Forest Service
United States Forest Service, Southern Hardwoods Laboratory
United States Soil Conservation Service
University of Tennessee; Department of Forestry, Wildlife and Fisheries
Virginia Tech University;Department of Fisheries and Wildlife Sciences
Virginia Cooperative Fish and Wildlife Research Unit
Wildlife Technical Services, Inc.
Willamette Industries

LOUISIANA BLACK BEAR FACTS

- The Louisiana black bear *(Ursus americanus luteolus)* was once common throughout all of Louisiana, eastern Texas, southern Arkansas, and southern Mississippi. Presently, it is estimated that there are 200-300 bears remaining in Louisiana, 25 to 50 in Mississippi, and none in eastern Texas.
- The decline in Louisiana bear populations is attributed primarily to habitat destruction. Bottomland hardwood forests, the bears favored habitat, once covered 24 million acres of the Lower Mississippi Valley. Today less than 5 million acres remain. Human disturbances, illegal killing, and fragmentation of the remaining woodlands have contributed to the bear's decline.
- Louisiana black bear are black, some with a distinct white "blaze" on their chest. Adult males generally weigh from 300 to over 400 pounds and adult females range from 120 to over 275 pounds. Body length, nose to tail, ranges from 3 to 6 feet.
- Female black bear become sexually mature at 3 to 5 years of age and have cubs (1 to 5) every other year. As with most wildlife, the young are very vulnerable and juvenile mortality can be significant. The young remain with their mother the first year, den with her the following winter, and find their own territory in their second summer.
- Bear tend to range over large areas in search of basic needs such as food, escape cover, den sites, and mates. Males have been known to range up to 40,000 acres and females about half that area.
- Classified as carnivores, black bear are not active predators. They are opportunistic feeders and will eat almost anything that is available. Berries in summer and acorns in fall are central staples. Bear also feed on agricultural crops such as corn, wheat, oats, and love sugarcane in the fall when its sugar content is high.
- Black bear are very intelligent, shy and secretive animals, and generally work hard at avoiding contact with humans. Dangerous situations may occur whenever close human activity is perceived as threatening to cubs or otherwise aggressive. The best advice is for humans to avoid close contact with bears.

BLACK BEAR CONSERVATION COMMITTEE

P.O. Box 4125
Baton Rouge, La 70821

Printed on recycled paper

STATEMENT OF BRIAN LOEW, EXECUTIVE DIRECTOR OF THE RIVERSIDE COUNTY HABITAT CONSERVATION AGENCY, BEFORE THE SENATE SUBCOMMITTEE ON DRINKING WATER, FISHERIES AND WILDLIFE

AUGUST 3, 1995

Mr. Chairman, thank you for the opportunity to address your Subcommittee today concerning financing mechanisms for the development and implementation of habitat conservation plans. I serve as Executive Director of the Riverside County Habitat Conservation Agency ("RCHCA"), a public entity formed by nine local governments in western Riverside County, California for the purpose of planning for, acquiring, and managing ecosystems for endangered, threatened, and candidate species. To my knowledge we are the only local governmental agency in the United States formed for the specific purpose of developing and implementing regional habitat conservation plans ("HCP").

The RCHCA is also perhaps the most experienced local agency in the nation in the actual implementation of HCP's. We presently administer two HCP's approved by the U S. Fish and Wildlife Service ("USFWS") and the California Department of Fish and Game, these include a highly controversial 565,000 acre single species HCP covering the endangered Stephens' kangaroo rat, and a 12,000 acre habitat based HCP covering 31 listed and sensitive species. Additionally, the RCHCA and Metropolitan Water District expect approval from the USFWS within the next few months for another habitat based HCP covering 65 species in a 13,000 acre area

The development and implementation of these HCP's has consumed an extraordinary amount of our local financial resources. In the last five years, over $123 million in local funds has been expended on habitat conservation in western Riverside County. This $123 million has not been matched with even a single dollar of federal funds. I believe Riverside has invested more local money than any county in the nation in the development and implementation of HCP's, and for that reason we offer your Subcommittee a unique perspective on the subject of HCP financing.

Your Subcommittee has asked me to address three broad issues today: 1) the role and adequacy of current funding mechanisms in achieving the goals of the Endangered Species Act ("ESA"); 2) methods by which those goals may be more equitably and cost-effectively achieved through the use of federal funding and other means, and; 3) the relative roles of federal, state, and local efforts to prevent species from becoming endangered or threatened.

Role and Adequacy of Current Funding Mechanisms in Achieving Goals of the ESA

Although no goals are enunciated in the legislation, the stated purposes of the ESA are "...to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, (and) to provide a program for the conservation of such endangered and threatened species..." If these are in fact the goals of the ESA, then from the perspective of western Riverside County we must conclude that existing funding mechanisms at the federal level are woefully inadequate to achieve them. I say this for two reasons: 1) the list of endangered and threatened species continues to grow, providing ample evidence that ESA goals are not being met, and, 2) since absolutely no federal funding has been provided to assist in the implementation of western Riverside County HCP activities, "existing funding mechanisms" have made no contribution whatsoever to ESA goal achievement in our region.

The RCHCA has pursued a variety of avenues to secure funding from existing federal funding sources. We first tried the Land and Water Conservation Fund ("LWCF"), only to be told that despite a paper fund balance in the billions, only a minuscule portion of those assets are appropriated in any year. For example, the FY 96 House Interior Appropriations Bill includes $51.5 million from LWCF, but all of that money is intended for distribution to four federal agencies. If the Senate passes a similar appropriations bill no LWCF monies would be made available to local governments for HCP implementation. Indeed that has been our experience every year in western Riverside County

Beyond LWCF it is difficult to identify any other existing federal funding mechanisms for HCP's. Although Section 5 of the ESA authorizes the Secretary of Interior to acquire land for conservation of fish and wildlife, no such acquisitions have ever been made in western Riverside County to support local HCP efforts. In the Administration's FY 96 Interior budget the Secretary sought to use Section 6 of the ESA to provide approximately $28 million to state and local governments for land acquisitions intended to support HCP's. However, those funds were not included in the House Appropriations bill, and unless reinstated by the Senate, no federal funding will be made available to local governments under the Section 6 program for HCP related land acquisition.

Thus, it is clear that although the few existing funding mechanisms may provide modest sums to specific federal agencies for land acquisition, they direct virtually no assistance to the programs most capable of achieving the conservation goals of the ESA, i.e., locally administered HCP's.

In the absence of federal funding the citizens of western Riverside County have been forced to bear the entire cost of conserving species protected under the ESA. Nine

local governments in our area have adopted ordinances which impose a habitat mitigation fee of $1,950 per acre on all new development within a 565,000 acre area This program, constituting the largest habitat mitigation fee in the nation, has raised more than $30 million in the five years of its existence. In addition to the fee, local governments in western Riverside County have issued $35 million in bond financing for habitat acquisition, and have also tentatively established landfill deposit surcharges for the same purpose. Finally, rate payers for the Metropolitan Water District have borne the $63 million expended by that agency for the implementation of HCP's in western Riverside County.

The conclusion to be drawn from this explanation is that existing federal funding mechanisms have provided no assistance to HCP activities in western Riverside County, and in their absence even our extraordinary local financial commitments are proving inadequate to ensure achievement of ESA goals.

Methods by Which ESA Goals May Be Equitably Achieved

At the beginning of the ESA Congress finds that species "...are of esthetic, ecological, educational, historical, recreational, and scientific value to the Nation and its people." To the citizens of western Riverside County that finding raises a fundamental issue of equity; if it is in the national interest to prevent species from becoming extinct, then it is a national obligation to pay a reasonable portion of the cost of achieving that goal.

Equity in the achievement of ESA goals may be achieved through actions taken in three areas: 1) provision of financial assistance to local agencies for HCP preparation and implementation; 2) management and exchange of federal lands in support of local HCP's, and; 3) establishment of incentives for conservation of private property used by listed and candidate species.

Of course, from the local perspective the most effective method of ensuring equity in the HCP process would be to provide direct federal financial assistance through matching grants to local agencies. This would involve federal grant programs for the preparation and implementation of HCP's. Another method of increasing the federal equity share could involve the leveraging of federal appropriations with private sector conservation sources. Such a situation exists today through the National Fish and Wildlife Foundation, and that program can and should be expanded to involve other large nonprofit conservation organizations as well.

As another component of federal support for achievement of ESA goals, the RCHCA believes that Congress should consider the establishment of a revolving loan program for implementation of local HCP's. Under such a program local entities could qualify for loans only upon demonstrating that sufficient local funds dedicated to habitat conservation are available for repayment. Through the establishment of a loan fund

the federal government could address the most critical need of most HCP's by providing up front cash to allow timely and cost-effective acquisition of necessary habitat.

Although direct financial assistance to local HCP's would be the most effective method of achieving ESA goals, the land resources of the federal government also constitute an extremely valuable tool. Such resources may be used to support local HCP's in three ways: 1) to the maximum extent practicable, Congress should direct that federal lands be managed as wildlife habitat in a fashion which supports the provisions of local HCP's or, in the absence of such plans, contributes to the preservation of listed, candidate, and and sensitive species; 2) Congress should direct federal land management agencies to designate appropriate surplus properties as available for exchange for the purpose of acquiring habitat for endangered, threatened, and candidate species, and; 3) through the base realignment and closure process a portion of surplus military land should be made available for sale or trade for the purpose of acquiring habitat in support of local HCP's.

Finally, the federal government can indirectly assume a more equitable portion of species preservation obligations by using its powers to establish incentives which encourage private property owners to conserve sensitive habitat. This could involve agreements between land owners and the USFWS wherein the owner voluntary agrees to undertake certain conservation activities on his/her property, and the USFWS provides assurances that appropriate incidental take authorization will be granted. The Department of Interior recently endorsed these types of "safe harbor" agreements, and our experience suggests that for private properties such voluntary arrangements may prove to be the best method of accommodating the needs of both wildlife species and their human hosts.

Other incentives for conservation of privately owned land also may be established by the federal government Special tax incentives may be granted for donations of property for habitat conservation purposes by individuals and corporations. Other incentives having no direct federal financial implications are possible as well. For example, a simple decriminalization of existing ESA incidental take penalties would go a long way toward reducing the wanton habitat destruction which now takes place prior to species listing decisions.

Relative Roles of Federal, State, and Local Efforts to Prevent Species from Becoming Endangered or Threatened

As previously noted, the federal government has both the responsibility and the resources to play a vital role in a combined effort to prevent species from requiring protection under the ESA. In light of its vast property holdings, among the most important functions this level of government could perform is to ensure that federal lands are managed in a manner which supports the conservation of sensitive species.

Such a policy would be particularly effective throughout the west, where the majority of land in several states is under federal control. It is important to note that this type of policy would not only assist in species conservation, but would also serve to reduce the burden of the ESA on private property owners.

The federal government also could play an influential role in encouraging conservation by local governments and individual land owners. Through the establishment of matching grant and revolving loan programs, federal assistance could stimulate local governments to develop HCP's which seek to conserve species before they reach the point of near extinction. The expanded use by USFWS of pre-listing agreements, safe harbor agreements, and other legal assurances also would provide powerful incentives to land owners to participate in conservation plans for non-listed species.

Since the State of California has adopted its own Endangered Species Act, local citizens in our area feel that level of government has a responsibility for species conservation equal to that of the federal government. Accordingly, the state should play a similar role in the combined effort to prevent species from requiring protection. The vast inventory of lands under state control can and should be managed with the intent of conserving resident species. The California ESA could provide significant incentives for conservation by local governments and property owners by greatly expanding the use of pre-listing agreements and other voluntary arrangements which provide certainty to such entities and individuals. Of course another powerful incentive for participation in conservation plans could be provided by states through financial assistance programs for HCP preparation and implementation.

The State of California already has taken an important step toward early species conservation through its adoption of the Natural Communities Conservation Planning ("NCCP") program. By focusing on conservation of entire ecosystems, this program facilitates approaches through which species may be preserved well before they near the point of extinction. Although Riverside County has experienced problems with administrative regulations developed for the NCCP, we feel the program's emphasis on early conservation of ecosystems is far superior to the ESA which provides protection only when species are in danger of becoming extinct.

Finally, Riverside County has amply demonstrated its belief that local government can and should play a strong role in the effort to prevent species from requiring ESA protection. The most visible approach we have taken consists of the implementation of ecosystem based multi-species HCP's. As part of that effort we have instituted the aforementioned habitat mitigation fee program to establish an ongoing revenue source for conservation activities.

In addition, local governments in California play an active role in species conservation through the California Environmental Quality Act ("CEQA"). Under CEQA, local projects resulting in impacts to sensitive species are subject to appropriate mitigation

measures. Local governments are responsible for evaluating project impacts to sensitive species and determining actions necessary to mitigate and ameliorate such effects. Mitigation identified through the CEQA process has made significant contributions to regional conservation plans in western Riverside County, and similar results can be expected in other states having environmental impact analysis requirements.

As a final measure, local governments can play an influential role in species conservation through land use planning. Through the use of tools such as density bonuses, transfer of development rights, and planned unit development standards, it is possible in many cases to successfully integrate development with conserved wildlife habitat. As the financial resources of local governments grow tighter in the coming years, this strategy will prove to be an increasingly popular approach for ensuring habitat conservation without the need for acquisition of private property.

Mr. Chairman, I thank you for the opportunity to appear before you today and I would be pleased to respond to any questions the Subcommittee may have.

LAND DEDICATIONS AND HABITAT MITIGATION COSTS
FOR COMPLIANCE WITH THE ENDANGERED SPECIES ACT
WESTERN RIVERSIDE COUNTY, CALIFORNIA
(as of January 1995)

I. Land Dedications

RCHCA Stephens' Kangaroo Rat Long-Term Habitat Conservation Plan

Lake Skinner-Domenigoni Valley Reserve[1]	13,303 acres	
Lake Mathews Reserve	12,094 acres	
San Jacinto-Lake Perris Reserve[2]	11,674 acres	
Sycamore Canyon-March AFB Reserve[3]	2,502 acres	
Steele Peak Reserve (BLM federal lands)	1,753 acres	
Potrero ACEC Reserve (BLM federal lands)	995 acres	
Motte Rimrock Reserve	618 acres	
Subtotal SKR HCP Reserve Lands		42,939 acres
Santa Rosa Plateau Ecological Reserve[4]		6,925 acres
County Park Lands Dedicated to Wildlife Habitat		900 acres
TOTAL LAND DEDICATIONS		**50,764 acres**

II. HABITAT MITIGATION COSTS

RCHCA Stephens' Kangaroo Rat Habitat Conservation Plan

A.	Amount Expended to Date Under Short-Term HCP	$28,737,549	
B	Projected Expenses Under Long-Term HCP	16,100,000	
	Subtotal SKR HCP Expenses		$44,837,549

Metropolitan Water District SW Riverside County Multi-Species HCP

Habitat Acquisition	$28,500,000	
Habitat Management Fund	$13,886,000	$42,386,000

Santa Rosa Plateau Ecological Reserve

County of Riverside	$15,000,000	
Metropolitan Water District	15,400,000	
State of California	5,000,000	
Subtotal Santa Rosa Plateau Expenses		$35,400,000

Pacific Gateway Homes SKR Mitigation Payment[5] $ 256,025

Cresta Verde Ridge SKR Mitigation Payment[6]	$ 42,120
John Laing Homes SKR Mitigation Payment[7]	$ 100,100
MWD Inland Feeder Pipeline SKR Mitigation Payment	$ 196,500
The Gas Company Pipeline 6900 SKR Mitigation Payment	$ 100,000
TOTAL HABITAT ACQUISITION AND MITIGATION COSTS	**$123,268,294**

NOTES

[1]The Lake Skinner-Domenigoni Valley reserve defined in the RCHCA's Stephens' Kangaroo Rat Long-Term Habitat Conservation Plan includes a 9,000 acre multi-species wildlife reserve established under the approved MWD/RCHCA Southwestern Riverside County Multi-Species Habitat Conservation Plan.

[2]The San Jacinto-Lake Perris Reserve includes most of the 8,200 acre Lake Perris State Recreation Area (owned by the California Department of Parks and Recreation) and the entire 5,000 acre San Jacinto Wildlife Area (managed by the California Department of Fish and Game).

[3]The Sycamore Canyon-March Air Force Base Reserve includes the 1,500 acre Sycamore Canyon Park (owned and operated by the City of Riverside) and the 1,000 acre SKR Management Area on March Air Force Base.

[4]The Santa Rosa Plateau Ecological Reserve was acquired in two stages The Nature Conservancy originally purchased 3,100 acres for wildlife conservation purposes; this was not in any way a product of endangered species mitigation requirements. An additional 3,825 acres was jointly purchased in 1991 by the County of Riverside, Metropolitan Water District, and the State of California. Both the County and MWD were motivated to participate by mitigation considerations

[5]This payment was required by the U.S. Fish and Wildlife Service as a condition of their issuance of an Incidental Take Permit for a residential development project in a portion of the City of Corona not covered by the RCHCA's SKR Habitat Conservation Plan.

[6] This payment was required by the U.S. Fish and Wildlife Service as a condition of their issuance of an Incidental Take Permit for a residential development project in a portion of the City of Corona not covered by the RCHCA's SKR Habitat Conservation Plan.

[7]This payment was required by the U.S. Fish and Wildlife Service as a condition of their issuance of an Incidental Take Permit for a residential development project in a portion of the City of Corona not covered by the RCHCA's SKR Habitat Conservation Plan.

Riverside County Habitat Conservation Agency

City of Corona ♦ City of Hemet ♦ City of Lake Elsinore ♦ City of Moreno Valley ♦ City of Perris
City of Riverside ♦ City of Temecula ♦ County of Riverside

STATUS OF HABITAT CONSERVATION ACTIVITIES IN WESTERN RIVERSIDE COUNTY, CALIFORNIA

JULY 1995

I. STEPHENS' KANGAROO RAT HABITAT CONSERVATION PLAN

A. Background

In October 1988 the Stephens' kangaroo rat ("SKR") was listed as an endangered species by the U.S. Fish and Wildlife Service ("USFWS"). Under the Endangered Species Act ("ESA"), both the SKR and its habitat were protected from any type of disturbance resulting in "take" of the species. The net effect was to freeze new development on more than 22,000 acres throughout western Riverside County. At the time of listing very little was known about the animal, its geographic distribution, or its habitat needs.

The Riverside County Habitat Conservation Agency ("RCHCA") was formed in 1990 for the purpose of planning, acquiring, and managing habitat for the SKR and other endangered, threatened, and candidate species. The RCHCA is a Joint Powers Agreement agency presently comprised of the Cities of Corona, Hemet, Lake Elsinore, Moreno Valley, Perris, Riverside, Temecula, and the County of Riverside; the City of Murrieta has petitioned for membership and will become a member upon the execution of agreements by the Riverside County Board of Supervisors and all affected city councils. The RCHCA has an Advisory Committee including representatives of the Building Industry Association, Audubon Society, Sierra Club, Riverside County Farm Bureau, Riverside County Property Owners Association, Endangered Habitats League, Metropolitan Water District, Southern California Edison, University of California at Riverside, USFWS, California Department of Fish and Game ("CDFG"), and others.

In order to address severe economic impacts of the SKR listing, the RCHCA prepared a Short-Term Habitat Conservation Plan ("HCP"). This HCP evolved into a four year document designed to afford interim protection to the SKR while developing a plan to establish permanent preserves. Key elements of the Short-Term HCP include:

- Nine "Study Areas" encompassing 78,000 acres were designated throughout western Riverside County. Within these areas "take" of the SKR is prohibited, and development approvals must be based upon a formal finding by local governments that the project will have no adverse effects on the functioning of a Study Area as an eventual preserve

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* Land owners may petition to have their property removed from a Study Area. Such requests are evaluated by the RCHCA Board of Directors, and if approved are forwarded to the USFWS and CDFG for action. The USFWS and CDFG have sole authority to approve land owner petitions.

* RCHCA members established and maintain a SKR mitigation fee of no less than $1,950 per acre. The mitigation fee is assessed on all new development within an area covering over 565,000 acres. Fee revenues are expended by the RCHCA for land acquisition, biological research, and other activities necessary to implement the HCP. To date approximately $30 million has been collected by RCHCA members, making this the largest local mitigation fee program in the nation dedicated to habitat conservation.

* RCHCA members are permitted to "incidentally take" (e.g., develop) up to 4,400 acres of SKR habitat outside of Study Areas. For each acre taken, the RCHCA must acquire a replacement acre of SKR habitat within a Study Area. This is designed to assemble land for dedication as permanent wildlife preserves. To date, the RCHCA has acquired over 8,800 acres of land which has been permanently dedicated to the preservation of SKR and other wildlife. As of July 1995 approximately $30 million has been expended by the RCHCA to implement the Short-Term HCP; no federal funds have been made available to supplement this effort.

* The RCHCA has financed extensive SKR biological studies to fill the vacuum of scientific knowledge existing at the time of listing. Such studies are intended to produce sufficient information to develop a plan which will ensure long-term survival of the species within the HCP area.

B. Current Status

Following an extensive series of public meetings the RCHCA submitted a Long-Term HCP to USFWS and CDFG in February 1995. This document prescribes SKR habitat conservation activities to be conducted by the RCHCA over a 30 year period. Salient features of the SKR Long-Term HCP include the following:

* Seven core preserves permanently dedicated to conservation of SKR and other species will be established throughout western Riverside County. In total these preserves encompass over 43,000 acres, including over 12,500 acres of SKR occupied habitat

* The core reserves will be expanded through land trades performed by the U.S. Bureau of Land Management ("BLM") involving over 10,000 acres of federal property. These land trades will seek to secure an additional 2,500 acres of SKR occupied habitat for inclusion in the core reserve system.

- The RCHCA will provide for ongoing management of the core reserves. In this effort the RCHCA will be assisted by a Reserve Managers Coordinating Committee consisting of the RCHCA, USFWS, CDFG, BLM, U.C. Riverside, Riverside County Regional Open Space and Parks District, The Nature Conservancy, Metropolitan Water District, and others.

- Within the HCP area incidental take of SKR may occur anywhere outside of core reserves upon payment of the applicable SKR mitigation fee. Incidental take in core reserves may occur for purposes related to public health, safety, and welfare, e.g., fire prevention, emergency response, and operation and maintenance of public facilities.

- Bona fide agricultural activities will not be subject to SKR biological surveys or payment of SKR mitigation fees.

- Implementation of the Long-Term HCP is expected to cost approximately $30 million, including $15 million from the RCHCA and $15 million in BLM land trades. Combined with the $30 million already expended on the Short-Term HCP, a total of approximately $60 million will be spent on the SKR habitat conservation effort. Of that amount approximately $45 million will be expended by the RCHCA

II. MULTI-SPECIES HABITAT CONSERVATION EFFORTS

A. Background

In 1989 the County of Riverside sponsored the preparation of a Multi-Species Habitat Conservation Strategy ("MSHCS"). The MSHCS contains an inventory of sensitive species and habitat types existing throughout the County. The location of such species and habitats is evaluated in terms of existing areas of resource protection, e.g., National Forests, parks, etc. A "gap analysis" was conducted to identify sensitive areas not currently under local, state, or federal resource protection. Such areas then become possible candidates for eventual protection.

The MSHCS departs from the usual habitat conservation planning approach in two ways: 1) it focuses on multiple species rather than a single variety of animal or plant, and; 2) it emphasizes conservation of sensitive habitat types as a method of preserving the species residing therein. The MSHCS promotes a pro-active and cost-effective solution to the endangered species issue by preserving habitat before its resident species become threatened. In so doing the dire consequences of endangered species listings can be avoided.

The MSHCS also acknowledges that sufficient funding to purchase all sensitive habitats will never exist. Accordingly, it emphasizes methods whereby habitat may be protected without acquisition. This includes land use controls (e.g., zoning) site design (e.g., cluster development), development density transfers, and such mechanisms as life estates and conservation easements.

In July 1991 the County Parks Department (now the Riverside County Regional Park and Open Space District) issued a draft of the MSHCS. Although the MSHCS has not been formally adopted by the Board of Supervisors, it is viewed as a basis for development of an actual multi-species HCP.

B. Current Status

In 1994 a Memorandum of Understanding was executed among the RCHCA, USFWS, CDFG, and the U.S. Bureau of Land Management (BLM) concerning the development of an ecosystem based conservation plan for western Riverside County. The MOU provides that following approval of the SKR Long-Term HCP, the RCHCA will expand the document into a comprehensive ecosystem based HCP which meets the requirements of the federal and California Endangered Species Acts as well as the State of California Natural Communities Conservation Planning Act. The BLM has committed 25,000 acres under federal ownership in western Riverside County to support this habitat based multi-species HCP. This will occur through management of BLM lands consistent with HCP provisions, and potential trading of excess BLM lands to secure habitat necessary for the regional HCP preserve system.

Negotiations are now underway among representatives of the RCHCA, USFWS, CDFG and BLM to draft a more detailed agreement concerning the salient features of a comprehensive habitat conservation plan for RCHCA member agencies. Participation will be solicited from the U.S. Forest Service as well to ensure that affected portions of the Cleveland and San Bernardino National Forests can be included in the conservation plan. The proposed agreement will: 1) identify terms and conditions of the HCP, and; 2) define respective roles and responsibilities of all parties, including the financial commitments to be made by RCHCA member agencies.

III. CALIFORNIA GNATCATCHER/COASTAL SAGE SCRUB

A. Background

On March 25, 1993, the USFWS declared the California gnatcatcher a Threatened Species under the ESA. Under Section 4(d) of the ESA the USFWS may establish "such regulations deemed necessary and advisable" to provide for the conservation of a threatened species. The Section 4(d) Special Rule allows for incidental take of the species or its habitat only in areas enrolled in the State Natural Communities Conservation Planning program ("NCCP").

Approximately 166,400 acres within western Riverside County are covered by the sage scrub habitat favored by the California gnatcatcher; thus, its listing as a Threatened Species may have extensive local impacts

B. Current Status

Under the joint sponsorship of the RCHCA, Western Riverside Council of Governments, and Riverside County Regional Park and Open Space District ("RCRPOSD"), updated vegetation mapping for western Riverside County was recently completed. Also included in that effort was a limited biological field survey program for sage scrub habitat. These

products will be incorporated into the larger ecosystem based conservation plan to be prepared by the RCHCA.

The aforementioned MOU among the RCHCA, USFWS, CDFG, and BLM provides that the RCHCA ecosystem based HCP will be consistent with the NCCP Act.

IV. ADDITIONAL HABITAT CONSERVATION ACTIVITIES IN WESTERN RIVERSIDE COUNTY

Metropolitan Water District/RCHCA Southwestern Riverside County Multiple Species Conservation Plan

In 1991 the Metropolitan Water District ("MWD"), in association with the RCHCA and RCRPOSD, established the Roy E. Shipley Reserve on land around and northeast of the MWD Lake Skinner reservoir. This 3,674 acre preserve was dedicated to the preservation and enhancement of multiple sensitive habitats and animal and plant species. The Preserve is managed jointly by the RPOSD, MWD, RCHCA, CDFG, and USFWS.

In 1992 MWD and RCHCA received approval from the USFWS and CDFG for their joint Southwestern Riverside County Multiple Species Habitat Conservation Plan. This document formed the basis of one of the nation's first Pre-Listing Agreements with USFWS and CDFG covering numerous habitat types and 31 sensitive species, including the Stephens' kangaroo rat, Bald eagle and California gnatcatcher. This 20,000 acre multiple species preserve encompasses two reservoirs and 9,000 acres of contiguous conserved wildlife habitat.

As a partner in this effort the RCHCA has acquired over 3,000 acres for expansion of the multi-species reserve Additional RCHCA land purchases are anticipated in the future

Santa Rosa Plateau Preserve

The Nature Conservancy currently manages a 6,900 acre multiple habitat preserve in southwestern Riverside County. This area recently experienced a major expansion as a result of a $35.4 million land purchase jointly financed by the MWD, County of Riverside, and the State of California. The Plateau management plan is intended to conserve several sensitive habitat types, including vernal pools, oak woodlands, sycamore/oak riparian woodlands, native grasslands, and coastal sage scrub.

As part of the expansion of the Plateau reserve a multi-species mitigation bank was established for use by MWD.

MWD/RCHCA Lake Mathews Multi-Species Habitat Conservation Plan

The MWD and RCHCA are now completing a multiple species habitat conservation plan covering 35 sensitive species on over 12,000 acres owned by the RCHCA and MWD in the Lake Mathews/Estelle Mountain areas of western Riverside County. Modeled after the Southwestern Riverside County MSHCP, the HCP will support Pre-Listing Agreements and the establishment of a mitigation bank. The RCHCA will provide a $5 million endowment to finance ongoing management, monitoring and biological research expenses.

Approval of the Lake Mathews MSHCP by the USFWS and CDFG is expected by August 1995.

San Jacinto River Corridor Plan

That portion of the San Jacinto River between the Ramona Expressway and Canyon Lake is the subject of a conservation plan currently under development. Through a MOU between the County of Riverside, Riverside County Flood Control District, City of Perris, CDFG, and USFWS, actions will be undertaken to preserve a riparian corridor and habitat for the San Jacinto Valley saltbush. This plan is being developed in response to planned flood control improvements which will allow limited development in a flood plain area. The San Jacinto River Corridor Plan has been completed and is presently under review by USFWS.

Santa Margarita River Corridor

The Counties of Riverside and San Diego have adopted a Joint Resolution through which The two entities mutually conduct planning activities for parks and open space along their common border. Under this arrangement The San Diego County Parks Department and RCRPOSD intend to prepare a comprehensive management study for The Santa Margarita River watershed. These parties are now developing a scope of work and identifying potential funding sources for The study.

Additionally, The U.S. Environmental Protection Agency is sponsoring an Advanced Identification Study of The Santa Margarita River. This effort, intended to identify wetland areas within The watershed meriting protection, is expected to be completed in the fall of 1995.

STATEMENT OF CHARLES E. GILLILAND, PH.D., REAL ESTATE CENTER AT TEXAS A&M UNIVERSITY

Mr. Chairman, members of the Committee, thank you for the opportunity to place the information and insights gained during our inquiry into the effect of the Endangered Species Act on land values in Texas before the committee. My name is Charles Gilliland and I am an Associate Research Economist with the Texas Real Estate Research Center at Texas A&M University specializing in research in rural land values and property tax issues.

The Real Estate Center was created by the Texas Legislature and charged with the duty to "conduct studies in all areas that relate directly or indirectly to real estate and/or urban economics * * * and to assist the teaching program in real estate offered by colleges and universities." With that broad mandate, the Center provides information that benefits all facets of the real estate industry, including: real estate agents, attorneys, lenders, legislators and the general public. The Center has undertaken a wide variety of investigations that have provided information designed to enhance the efficient functioning of real estate markets in Texas.

In my capacity as a specialist in rural land values, I have charted the progress of Texas rural land markets since 1983. To monitor land market developments, I analyze a data base of approximately 3,500 to 4,000 reported transactions each year and maintain contacts with more than 250 observers of land markets in four States. The latter project began as a short-term cooperative agreement with USDA/ERS and the Center has continued the project.

My years of land market research have provided a unique perspective on land market developments. Perhaps as many as 12 years ago, environmental regulations emerged as major influences on land market participants. Buyers and sellers gradually became aware of restrictions on human activity where endangered species were concerned. At the same time, lenders began to question the security of their collateral base in the face of possible restrictions on land uses where endangered species habitat occurred. Some legislators, lenders and other real estate professionals expressed concerns as the question a possible diminution of value arose. Responding to numerous inquiries, the Center undertook a study attempting to gauge the value influencing effects of ESA in Texas. This study was entirely funded by the Real Estate Center at Texas A&M University with no external funds.

That study produced the following conclusions:

Uncertainty concerning current and prospective land uses affected by the Endangered Species Act (ESA) remains an important concern in land markets.

- Owners and potential buyers may not know whether particular properties play host to endangered species. Observers report that bureaucratic judgments appear to be inconsistent from one property to another.
- Potential buyers foresee possible bans on current land uses and the likelihood of lengthy delays in obtaining permits plus the possibility of incurring consulting fees and mitigation expenses.
- Exacting mitigation fees in return for issuing permits adds the specter of an unanticipated and uncertain cost to management plans.
- The combination of mitigation fees and regulatory delay may cause large areas of land to become unattractive to buyers.
- In typical markets, these factors often translate into reduced offers and ultimately value losses for owners of affected properties.

Surveyed brokers reflect this uncertainty.

- The consensus among Texas real estate brokers expressing an opinion on value impact on vacant lots, urban fringe land and transitional rural land (40 to 45 percent) points to value declines resulting from ESA.
- Brokers estimated a 40 percent median value decline for urban fringe land in the Texas Hill Country and a 30 percent decline in transitional land values resulting from ESA.
- Median estimated declines for farmland and rangeland values varied from 10 to 20 percent depending on location.

Travis County property tax authorities have registered estimated value losses on affected properties on their county tax rolls.

- A total of 897 properties were affected by ESA and other environmental programs in the county in 1994.
- Property value was reduced by 43 percent for all land categories.
- Agricultural land values were reduced by 22 percent.
- Transitional land values were reduced by 51 percent.
- Vacant platted lots were reduced by 45 percent.

Aggregated sales data indications were inconclusive, although regional medians increased in affected areas. Market dynamics in these areas underscore the difficulty of directly documenting market-wide value declines stemming from ESA.

- Travis County and Williamson County area (Austin/Georgetown region) values increased 15 percent from 1992 to 1994, but sales volume declined by 21 percent, possibly indicating that buyers were avoiding potential habitat properties.
- The Edwards Plateau—South area (west of San Antonio) saw prices climb by 41 percent from 1992 to 1994. This remarkable increase appears to indicate the presence of numbers of speculative buyers anticipating that current problems will be resolved and values will increase. This kind of price support could evaporate as rapidly as it appeared.
- In the heavily timbered North—East area of Texas, (south of Texarkana) land values declined 9 percent from 1992 to 1994 despite strong timber prices. Sales volume dropped 17 percent during that period. These statistics are consistent with the potential ESA impact associated with the red-cockaded woodpecker, however other influences may have affected the market.

The Balcones Canyonlands Conservation Plan (BCCP), often touted as a model for the future, proposes to accommodate development in affected areas by easing permit availability in return for fees imposed on landowners.

- The April 19, 1995, version of this proposed plan includes a $5,500-per-acre fee to mitigate incidental taking of acreage when developing land with golden-cheeked warbler or black-capped vireo habitat.
- Additionally, vacant platted lots would incur a fee of $1,500 before a home could be built.
- Although routine farming and ranching practices would be exempted, those farm and ranch management activities requiring clearing would incur a $1,500 mitigation fee for each acre cleared.
- Furthermore, the fees approximate an assumed average land cost of $5,500 per acre. If land prices rise, the fees could also increase.
- Because of regulatory lag and time-related capital costs, owners of undeveloped acreage would likely see the market value of their property fall by more than the amount of the fee, when the time value of money is considered.

Considering all of these aspects of the ESA controversy being played out in market prices suggests that evidence is sketchy and uncertainty is rampant. Nevertheless, the information gleaned from examining Texas markets does indicate a cause for lenders' concerns. For example, market observers in the Travis County area indicate a likelihood that a substantial acreage has already been adversely affected by ESA. Therefore, lenders appear to have a justified concern about the impact of this act on their collateral base.

Analysis of Travis County assessments indicate that the most heavily affected properties, in dollar terms, are likely to be urban fringe properties and vacant lots. The degree of risk associated with investment in those properties has unquestionably increased, and lending policies may need to reflect that fact. However, the reduction registered on purely agricultural properties indicates a sizable decline as well, especially if the effect were to persist over a broad expanse of territory.

QUESTIONS FOR DR. CHARLES GILLILAND BY SENATOR LIEBERMAN

Question. When was your survey conducted? When did Secretary Babbitt make a final decision on critical habitat designation for the golden-cheeked warbler? Were any corrections made to address policy announcements or changes occurring after the survey was conducted?

Answer. The survey Senator Lieberman refers to was actually conducted by Dr. Ted C. Jones, Chief Economist at the Real Estate Center in 1994, 3 years after the golden-cheeked warbler was listed as an endangered species by U.S. Fish and Wildlife Service. To my knowledge, critical habitat designation was indefinitely placed on hold after the public reaction in central Texas. No adjustments were made to reflect the policy changes occurring after the survey was conducted. Given the nature of the survey, no adjustments were deemed to be appropriate nor were they judged to be necessary since ESA restrictions apply even in the absence of critical habitat designation.

Question. Is your analysis based on actual results of transactions data, or is it an opinion survey? If it is based on transactions data, can you provide this data and explain how was is it analyzed, with an analysis of sources of error and variation?

Answer. My analysis was based on the aforementioned survey plus a broad sample of transactions, approximately 4,000 sales per year throughout Texas for several

years. In addition, the actions of the Travis County Appraisal District with respect to appraisal of affected land was also analyzed. The summary data are readily available from the analysis of sales on an annual basis from 1966 through 1995. Variation is indicated; however, the individual sales profiles necessary for a hedonic modeling of the sources of variation are not available in the data. Attempts were made to assemble that kind of detailed data. However, because owners are not required to disclose the terms of real estate transactions in Texas, no source of such detailed and comprehensive information exists in here. The analysis is based on distribution free statistical testing that identifies marketwide trends.

Question. How much turnover has occurred in developed and undeveloped residential and commercial property in the last 5 years in the affected area? What do your records show regarding the factors that affected the sale value of this real estate? Have you kept comprehensive records that include all relevant factors? Have they been peer reviewed?

Answer. No records of transactions in Texas are reported or cataloged in Texas. Determining changes in total turnover in a specific region would require some extensive search of courthouse records in various counties. Such an undertaking would require dedication of time and other resources not available to the Center. All of the analyses and reports prepared by the Center have been extensively reviewed by both peers and an Advisory Committee appointed' by the Governor of Texas.

Question. Do you have records of *gains* to land values associated with ESA regulations as well as losses? If so, what do they show, particularly at the county level? If you did not, why not?

Answer. We have no records of gains or losses associated with ESA as my report explains. Data on sales of affected properties simply do not exist for a variety of reasons. The only analysis involving transactions that is available is at a market level and only reveals overall movement of prices. Upward movements could result from a variety of causes, including a restriction in the supply of developable land as EPA restrictions remove acreage from that category of property. The first consequence of ESA listing appears to be a reluctance among buyers to even consider purchase of affected properties. Until identifiable transactions have occurred on these affected acreages, analysis of market reactions in a quantifiable dimension will remain impossible. Such micro-focused studies ordinarily are outside the scope of Center investigations.

Question. What factors affect Central Texas real estate transactions both volume and prices? Can you provide a list of all of these factors? Would they include: interest rate changes; actions by the Resolution Trust Corporation on buying and disposing of distressed properties; effects of changes in Federal tax policy (such as the 1986 Tax Act) on depreciation and other items; regional employment rates; regional economic performance; local zoning actions; other Federal regulations; personal circumstances that require rapid sale of property (such as divorce or bankruptcy); and other factors relating to demand and supply? What effect would each of these factors have on real estate values? Did you survey real estate brokers or tax assessors on these other factors—and, if so, what were the results?

Answer. My specialization in Texas real estate is rural land. Therefore, response will reflect those influences that are most important for that type of asset. From a macroeconomic perspective, the most important influence on rural land prices in Texas has been nonfarm income. That variable explains approximately 85 percent of the variation in median land values in Texas over the past 30 years. Because Texas land is desired by nonfarmers with recreation in mind and investors hoping to reap capital gains, the fortunes of farming and ranching exert less influence on values than conventional wisdom would assume. Thus, farmers and ranchers must compete with urban-based buyers for land and nonfarm income greatly influences the price of land in Texas.

Economic changes that affect nonfarm income also affect demand for Texas land. Thus, as you have observed, the 1986 tax act and the acquired property bubble impacted the market for Texas land. However, the overriding concern following 1986 was the oil price decline and associated recession that gripped the Texas economy. Texas nonfarm incomes faltered and acquired properties flowed to FDIC, RTC and the Farm Credit Bank. This increase in supply devastated the land market in 1986 and 1987. However, most of the decline following the sobering events of 1986 had been registered in the market by 1988 and the following several years reflected a "mopping up" of the expanded supply held by lenders. Much of the remaining inventory of unwanted property appears to have moved through the market in 1993 with both 1994 and 1995 reflecting rising prices as supplies of good quality land on the market have become tight Much of the span between 1987 and 1993 reflected an unnatural market as "would be" sellers withheld land from the market while lend-

ers cleared their shelves. By 1993 lenders were left with lesser quality properties which sold at relatively low prices. Markets in 1994 involved more good quality properties, however, many brokers found their inventories of listings well below normal. That situation has persisted to the present. The drought may affect that situation as summer fades into fall.

The micro-level influences on real estate value are legion and your list barely begins to scratch the surface. Analysis of these influences requires appraisal analyses of the individual properties involved. Ordinarily that level of detail would be beyond the scope of a broad market analysis, however, the information provided by the Travis County Appraisal District did include an analysis of all of the localized influences on market values of individual parcels of real estate. The decline reflected on their records represents their trained appraisers? best estimate of the specific effect of ESA on those values. Other appraisers surveyed informally indicated that they had never before kept track of ESA habitat and, further, could not identity which tracts had habitat and which did not. Therefore, they have been unable to assess the effect of ESA from their files of sales data.

Question. What effect did the S&L bailout have on Central Texas real estate? Are these effects still in progress?

Answer. The S&L bailout probably limited the devastation that the real estate bust of 1986 visited on property owners in Texas. The S&L problems, the 1986 Tax Reform Act and the oil price decline hit Texas income all at the same time. Reactions were quick and decisively downward. The median price of an acre of Texas rural land, climbing until 1985, dropped almost 40 percent from 1985 to 1988. After that time, land prices seemed to bump along a bottom with the median moving very little until 1994. Similar patterns appear in average and median housing prices in the Austin area. The big decline was over by 1989–90 and a recovery has ensued since that time with the current market booming in response to the active Austin economy. $or virtually all sectors of the Texas real estate industry, the steep decline of the mid-1980s remains-a disturbing memory. Specific data on these phenomena can be viewed on the Internet at *http:/recenter.tamu.edu* in the "Data" pages.

If you would like copies of specific information, we will gladly provide them.

Question. The Wall Street Journal reported the results of your survey, including a response by MIT professor Dr. Stephen Meyer criticizing the methods of your survey. His criticisms include the contention that fluctuations in Central Texas real estate are not unique for fringe real estate areas, and that they are potentially attributable to many factors that you did not analyze. What is your response?

Answer. I assume the "survey" mentioned in this question was the study conducted by Dr. Jones and have not seen the Wall Street Journal article. Fringe area real estate prices do indeed fluctuate because of many factors. For that reason, Dr. Jones asked the real estate brokers to focus specifically on the effect of ESA regulation. Responses should reflect the isolated effect of ESA as front-line market participants encountered it Respondents were not "guided" to a desired answer but were provided with a full range of possibilities including "ESA increased value." All of these factors are explained in the report of the investigation. As I mentioned before, the information required to estimate a hedonic model of real estate prices did not exist at the time of the study, nor does it now exist. We would gladly have explored the issues mentioned in your Question. The information needed for a comprehensive study does not exist.

Our efforts here were aimed at identifying the best information available to ascertain if a potential threat to the integrity of the collateral base of lending institutions did exist. We concluded that the existing market participants and observers did judge ESA to be a negative influence on the market.

Question. Please describe the appropriate economic methodology that should be used for analyzing the effects of several factors on real estate values? Does your analysis do this? If not, how can you make any inferences regarding the effect of any one factor (such as ESA regulations) on land values?

Answer. The survey conducted by Dr. Jones is a time-honored method of analyzing market actions. The process consists of designing an unbiased instrument, testing that instrument and drawing a random sample from the target population. The population should be contacted and invited to complete the instrument with two follow-up contacts made to encourage response.

An analysis of the factors affecting real estate value should ideally result from a statistical analysis of prices paid in arm's-length transactions regressed on data representing the important price determining factors. We made various attempts to obtain these kinds of data to no avail. The analysis provided by the Travis County Appraisal District is the closest approximation of this technique available.

Neither of these studies can purport to prove anything conclusive about prices paid for affected lands. Because they reveal the thinking of current market participants, these studies do permit inferences about the effects of ESA. Real estate prices are the summary of thinking about land and land uses in a market Therefore, the thought processes leading to those prices do provide insight into the effects on prices.

Question. Have you submitted your analysis for peer review and, if so, what were the results?

Answer. Yes. We have a published report.

Question. Your study indicates that 84 percent of all real estate brokers surveyed did not provide a response. Have you evaluated the effect of non response bias on your results?

Answer. My study did not involve a survey of brokers. Dr. Jones conducted the survey to which you make reference. He is not available to discuss methodology at present.

Question. Does any systematic, comprehensive and peer reviewed study of the effects of ESA on real estate in Central Texas or anywhere else exist? Do you think this is important research to conduct and provide as part of the ESA policy debates?

Answer. The only systematic peer-reviewed study of the effects of ESA that do exist are summarized in my report. It is an important topic to research and report. The basic axioms of economics would indicate that ESA regulation will reduce desirability of affected land. However, verification of that deduction and measurement of its impact would be most beneficial for decision makers. However, the expense required to compile the data needed would likely make this kind of study a costly undertaking. Perhaps the best solution would be to identify typical properties and commission several appraisals by competent real estate appraisers on a before and after basis. This is the crux of the traditional biggest and best use analysis in any well done appraisal.

NATIONAL CATTLEMEN'S ASSOCIATION,
Washington, DC, August 2, 1995.

Hon. DIRK KEMPTHORNE,
U.S. Senate, Washington, DC.

DEAR SENATOR KEMPTHORNE: The National Cattlemen's Association (NCA) recently participated in an Endangered Species Act dialogue initiated and facilitated by the Keystone Center, a non-profit organization. The purpose of the dialogue was to bring together individuals from diverse interests to discuss recommendations for providing incentives to private landowners to protect endangered species. The NCA has long recognized the need to reform the Endangered Species Act to provide incentives for private landowners. We therefore welcomed the opportunity to meet with other interest groups to discuss ways that might be accomplished. While we supported the exercise and felt that many good recommendations were made, we did not "sign on" to the final report.

In order to sign-on to the report, entitled "Keystone Dialogue on Incentives to Protect Endangered Species on Private Lands," it was stipulated that the group agree to all proposals by consensus. Because the NCA is a grassroots, policy-driven organization, there were several proposals that the NCA could not support. We therefore could not sign off on the document.

The NCA recognizes that the final report contains a wide range of options for private landowners which will work in some situations. However, we do not feel that incentives alone will solve the current problems with the Endangered Species Act. The Act must be amended to address other fundamental problems, such as the listing and recovery processes, the scientific requirements, and a balancing of social and economic impacts. These issues will continue to minimize the effectiveness of endangered species protection efforts until the ESA is reformed to address them. We urge you to consider these fundamental changes, as well as landowners incentives, when drafting legislation to reauthorize the ESA. Please contact Myra Hyde or Greg Ruehle with any questions.

Sincerely,

JIM LITTLE,
Chairman, Private Lands and Environmental Committee.

A TEXAS PUBLIC POLICY FOUNDATION ISSUE STUDY

A Market Approach To Protecting Habitat for Endangered Species

by

JOHN MERRIFIELD
Associate Professor of Economics
University of Texas at San Antonio

and

DUGGAN FLANAKIN
Director of Environmental Policy
Texas Public Policy Foundation

This is an update of a paper released in March, 1995; further updates may be issued as the debate in Congress on Endangered Species Act reauthorization continues to unfold. Comments on this report should be addressed to the authors at Texas Public Policy Foundation or by calling Mr. Flanakin at (713) 469-3406.

The Texas Public Policy Foundation

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TEXAS PUBLIC POLICY FOUNDATION

Here's what others are saying about this important TPPF report:

The Hon. Barry Williamson, Chairman, Texas Railroad Commission:

"The authors provide compelling data to support their idea of a market-based implementation of the Endangered Species Act. Finally we see a truly creative way to encourage economic development in this country and protect its natural resources too!"

The Hon. Rick Perry, Commissioner, Texas Department of Agriculture:

"As written, the Endangered Species Act is inherently flawed because it provides economic disincentives for people to maintain habitat. Texans have had their hands tied by the ESA because, as implemented, the presence of rare wildlife takes away landowners' management options and devalues their land. The market-based plan offered up by Texas Public Policy Foundation cuts the ropes off the landowners' wrists by balancing the environment and the economy and giving lawmakers another option."

U.S. Rep. Lamar Smith, San Antonio, Texas:

"The Texas Public Policy Foundation has done good work. You've identified precisely the kind of innovative approach that balances environmental protection with the rights of landowners. A system of private property rights and environmental protection are not incompatible; in fact, they're mutually reinforcing. This report describes how."

U.S. Rep. Henry Bonilla, San Antonio, Texas:

"The Texas Public Policy Foundation has come up with a market-based solution that will allow development and protect endangered species. This is the type of constructive approach we need to take if we want to bring an end to the ongoing battle between environmentalists and private property owners."

U.S. Rep. Mac Thornberry, Clarendon, Texas:

"As Congress looks for ways to put common sense back into environmental regulation, we must give special attention to market-based approaches. Our nation's economic system is one of the world's marvels because it has created strong incentives for individuals to protect the things they value, such as property and patents. The market-based approach outlined by the Texas Public Policy Foundation builds on the premise that people will preserve our natural habitat when it is economically advantageous for them to do so.

As a member of the House Resource Committee's Task Force on Endangered Species, I believe we must move away from the failed policies of the past, which have needlessly antagonized hardworking Americans and set groups of people against each other. We all want to preserve our natural habitat, but the current system doesn't do that. I commend the TPPF for its forward-thinking proposal."

Executive Summary

The Endangered Species Act (ESA) is widely perceived as one of the worst examples of governing against the people, even though most Americans truly want a positive role in protecting our nation's wildlife heritage. Despite its stated goal of maintaining biological diversity, the ESA has two major flaws that have discouraged landowners from cooperating in species preservation efforts. First, the law gives government officials near-arbitrary power to list species and limit the use of private property they designate as habitat; second, the law has no provisions for reimbursing affected landowners for direct or indirect costs they incur as a result of species listings and habitat designations.

Correcting these flaws requires a shift from the current law's command-and-control strategy to a philosophy based on negotiated rulemaking, voluntarism, and markets. The authors propose to require government officials to involve the public in the listing process and to give citizens expanded due process rights to challenge the soundness of the science supporting listings and habitat designations. They also propose an innovative, market-based system that encourages landowners to voluntarily provide habitat while simultaneously freeing up land for development much more quickly and at far less cost than under both the current law and all other proposals for revising the ESA.

For the past two years, Congress has been sifting through a series of reform proposals; in March, 1995, President Clinton came forward with his own ESA reforms. Sadly, none of these efforts has simultaneously addressed the two major problems with the law (arbitrary listing and no compensation). Sadly, the 1994 proposals for revising the ESA, which remain on the table in 1995, are almost as bad as the current law itself. Some of them would further encumber the U.S. Fish and Wildlife Service's (FWS) decision-making process, keeping landowners in limbo even longer. Proposals to beef up the FWS budget and enforcement authority would likely increase landowner incentives to conceal or destroy habitat. Most proposals to compensate landowners would result in either high costs or a further weakening of species protection. The recently announced initiative from the Clinton Administration also fails to solve the problems inherent in the current scheme.

Fatal Flaws in the Current ESA

The first fatal flaw in the ESA is that it makes adversaries, rather than partners, out of landowners. By giving sweeping, arbitrary power to the FWS (and to a lesser degree, the National Marine Fisheries Service) over species listings and habitat designation, the ESA places landowners constantly on the defensive to protect themselves from incurring significant, even devastating, costs implicit in existing species protection schemes. The powerlessness of landowners is magnified by the lack of objective, scientific standards for listing species and designating habitat and by the lack of appropriate procedures for protesting listings and habitat designations.

The FWS is nominally required to justify its listings based on a "best available data" standard, but all too often "best available data" means little if any data. The standards are often peer reviewed, but the FWS chooses its own peer reviewers and may disallow evidence presented by protestants that contradicts its claims. Because of the weak public notice

requirements in the current FWS procedures, landowners sometimes find out very late in the game that their enjoyment of their own property is being threatened, often too late to request a public meeting, which might not be nearby even if held.

The weak "science" requirements for listings omit the science of economics; as a result, FWS listing decisions commonly fail to produce the results they intend. This is not surprising, given that listings declare certain species "scarce" but make mere proximity to those scarce resources costly, rather than profitable, to landowners who might otherwise be (and are best situated to be) their protectors. The controversy inherent in the failure to consider economic (and social) costs of listings very likely has a role in the fact that many species are not being protected at all.

The second major flaw in the current ESA is that it fails to provide economically feasible means by which land may be set aside voluntarily rather than taken by fiat. Some would argue that the FWS should have unlimited power to seize property or restrict land use to preserve threatened or endangered species, so long as affected landowners are compensated for the loss of their property or its use - that is, powers akin to eminent domain as used in compensated takings for highway or dam construction.

The flaw in this reasoning is that it offers little if any protection from the outright indiscriminate seizure of individual property. The current law is written such that threatened and endangered plants and animals are effectively "entitled" to land for habitat. This suggests that supporters of these species could go to court to force the government to purchase property or at least rights in property with no cap on costs, though Congress might assert some cost controls. While stricter guidelines on listing of species would surely lower the potential cost of habitat acquisition, the individual landowner would still be subject to unilateral forfeiture (even with compensation) of rights in property. The end result would still be increased federal ownership of land at a very significant cost to taxpayers.

How To Fix the Fatal Flaws

Two major steps are needed to encourage landowners to participate in species protection. First, the FWS must be required to establish objectively based scientific standards for species listing and habitat designation, to delineate the projected economic costs to affected communities (which the government may be required to reimburse), and to provide appropriate opportunities for protestants to contest agency decisions on scientific and other grounds (perhaps through administrative hearings, and certainly through civil procedures). To ward off lawsuits, the FWS should also involve the affected public in the listing process early on (under schemes similar to negotiated rulemaking) and keep affected communities aware of ongoing changes in available information about the species of concern.

The second major step is to create a scheme that compensates landowners for their role in creating and preserving habitat and that does not penalize other landowners who seek to exercise development rights. Such a scheme should not merely provide just compensation for eminent domain-style regulatory takings, because landowners ought to have the final say as to whether they should give up rights in their own property for controversial purposes. Allowing the FWS to take any property it wants, so long as it pays a fair price, opens the door to political dickering and deal-making over whose land is to be seized for habitat.

Nor should such a scheme involve the intensive negotiations needed for the creation of regional habitat conservation plans (such as the Balcones Canyonlands Conservation Plan for central Texas), in which the future allowable uses of all the land within a designated area are determined simultaneously by committee. This type of scheme both freezes landowner options based on current knowledge (though revisions could presumably be renegotiated) and delays the exercising of any remaining property rights for as long as the negotiation process requires, which could be several years.

It is far preferable to allow individual landowners to decide, within a framework that assures that enough land within an ecosystem is set aside for habitat, whether or not to develop their property for purposes incompatible with habitat. This can be done by first determining how many acres within an ecosystem must be set aside as habitat to assure species preservation per acre that can be developed, then letting the market take over.

As part of the listing process, the FWS would be charged to determine the total acreage within the ecosystem that is or could be managed as habitat as well as the minimum acreage needed as habitat to assure species preservation. All land within the ecosystem would be restricted for development, but those desiring to develop property could rent or purchase a Habitat Preservation Credit (HPC) for each acre. These HPCs would be generated by landowners who enter into FWS-approved agreements, probably administered by state officials under delegated authority, to set aside land for habitat. These agreements might involve deed restrictions or management practices to be conducted by the landowner or the state agency.

Generators could sell or lease HPCs, probably through brokers, to other landowners or apply them to other land they owned. While the amount of land needed to create one HPC would vary according to the ecosystem's total habitat acreage need, one HPC would free up one acre of land to development. The value of the HPC to the seller would largely depend on his cost to comply with the management agreement (both maintenance costs and lost use costs weighed against lowered future property taxes); normally, this amount would be less than the full value of the affected acreage. Usually, those with the lowest costs for HPC generation would be the first to offer HPCs on the market. Since the seller's action would be voluntary in all cases, there would be no taking of the seller's property. Because buyers would be paying for the use of property not previously encumbered, the purchase (or lease) price of the HPC could be equated with a "regulatory taking" if Congress (or the state government) acts to provide for compensation in such cases.

A simple example shows how the HPC process would work: Suppose a landowner in Bexar County wanted to purchase HPCs to develop 10 acres of land currently valued at $5,000 per acre. Under a law like HR 925, his maximum out-of-pocket cost for HPCs for the 10 acres would be 20% of the property value (or $1,000 per acre); the government would be obligated to expend compensation funds to the extent that the market price for those HPCs exceeded that amount. After calling his broker, the Bexar County landowner learns that a landowner in nearby Medina County, but within the same ecosystem, is selling HPCs for $1,200. To close the deal, the broker calls up the local Texas Parks and Wildlife Department office and asks for a check for $2,000 ($200 each for the 10 acres) to match the $10,000 from the Bexar County landowner. Although the Bexar County landowner is out $10,000, he is now free to subdivide his property into five 2-acre lots that will sell for $8,000 per acre. The

Medina County landowner has had to set aside 15 acres which was lying fallow for species habitat, but he has $12,000 in cash with which to buy the new pickup truck he needs.

While the market price of HPCs would depend on development pressures in the ecosystem and the costs to landowners of creating HPCs, local governments could stimulate development in a number of ways, including setting a lower takings threshold and paying any amount over the federal threshold from local funds. Alternatively, governments could selectively lower the takings threshold for highly desired land uses needing HPCs, or provide additional habitat maintenance services to lower the selling price of HPCs.

Summary

Some might criticize the HPC scheme on grounds that landowners would have to pay for the right to use their own property. Under the present scheme, however, their property right has already been abridged without compensation, while under current proposals, they would be compensated but still lose the right to develop their property. Landowners already pay fees for exercising various development rights that generate income. In any case, the costs of HPCs would likely be far lower than the costs they are paying for Section 7 and 10 consultations under the current ESA.

The HPC scheme allows the market, and personal interests of landowners, to determine the cost to the public of species preservation and the direction that future development will take in areas in which threatened and endangered species compete with human interests for land uses. Among the advantages of the HPC market process:

* individual landowners will retain their property rights or be compensated for setting aside their property as habitat;

* the cost for development rights in habitat areas will be lower in the first place and possibly mitigated through compensation payments;

* the time frame for securing development rights in habitat areas will be greatly reduced;

* species can be assured of enough land before any further diminishment of their numbers;

* the total cost to the public of species protection will be far lower than it is now or would be under other ESA reform proposals;

* the public will have greater certainty that species protection plans are based on sound science and economic realities.

Contents

Illustration

Key Concepts and Acronyms

APH = Already protected habitat, including park and wildlife refuge acreage.

ASH = Safe minimum additional secure habitat in units of land area.

ESA = The Endangered Species Act of 1973 as amended.

FWS = U.S. Fish and Wildlife Service.

HPC = Habitat Preservation Credit. Each HPC allows its buyer to eliminate one acre's worth of habitat.

MA = Management Agreement. An MA would combine some mix of deed restrictions, mandated owner activities, and permission for other people to perform certain activities on affected land.

NH = Land area that is not habitat, and could not be made suitable habitat at a reasonable cost.

PH = Potential habitat in units of land area.

PP = Physical price, expressed as newly protected units of habitat per eliminated unit of habitat.

PP_B = PP for species on the brink of extinction.

UH = Unprotected habitat in units of land area.

A MARKET-BASED APPROACH TO PROTECTING HABITAT FOR ENDANGERED SPECIES

By John Merrifield and Duggan Flanakin

"Thousands of small businesses, landowners, and threatened species are endangered by faulty regulation."

Mark Suwyn, *Wall Street Journal*

Introduction

During the past two years Texas has been the center of a national firestorm over the Endangered Species Act (ESA) and other federal environmental laws. The controversy over a 1994 Richards Administration proposal to classify five Texas water bodies as "outstanding national resource waters" and the uproar over the proposed listing by the U.S. Fish and Wildlife Service (FWS) of 33 central Texas counties as critical habitat for the golden-cheeked warbler played major roles in last November's statewide elections, which ended in the resounding defeat of an otherwise popular Governor.

The problem for Governor Richards was not so much that Texans opposed species protection but that they resented federal encroachments on their Constitutional liberties. The most recent Texas Environmental Survey,[1] conducted by Rice University sociology professor Stephen L. Klineberg, found that 56 percent of Texans favored spending more tax dollars to set aside and protect wilderness areas for endangered species in Texas, and that 64 percent agreed that some restrictions on property rights are justified to protect endangered species and wetlands. But a whopping 73 percent believed that the federal government interferes too much in our daily lives.

The ESA was enacted in response to public demands that the federal government protect threatened and endangered species and their habitat. The 1973 law has been credited with saving the American bald eagle - our very national symbol - though many suggest the ban on DDT played a greater role in the bird's recovery. Despite the hoopla, only a handful of endangered and threatened species have been helped by the ESA. This sad result is largely due to the cumbersome, even counter-productive procedures that the FWS has promulgated to implement the law. (The National Marine Fisheries Service has a smaller role, limited more to over-harvest prevention than habitat protection.) The ESA's record on maintaining the widely shared goal of biological diversity (or biodiversity) is not nearly good enough.

The debate over ESA reauthorization was placed on hold during 1994 while Congress went to war over health care but has returned with a vengeance to center stage in Washington - and in Austin as well. Widespread disillusionment with the ESA, both in Texas and around

[1]Rice University, Department of Sociology, "The Texas Environmental Survey (1990, 1992, 1994)" (Rice University, Houston), March 1995.

the nation, has led to the filing of a host of bills in Congress, along with a brand-new White House initiative, each of which would change the way the federal government administers the 22-year-old law. A task force empowered by the U.S. House Committee on Resources has conducted nationwide hearings, including one on March 20, 1995, in Boerne, Texas, to obtain public testimony about how to rewrite the law to the nation's profit.

The chief reason for the continued debate is that current habitat protection policies are a disaster for everyone. Not only do they do a poor job of protecting and preserving threatened and endangered species, they also have the potential to do great economic harm to landowners and developers. The imbalances in the current law have fomented a backlash that could lead to a weakening, or even abandonment, of species protection efforts if hard-liners win the day.

Many environmentalists have been frustrated with the slow pace of species protection, while others have used the ESA as a political tool to stop or force changes in some controversial projects. The snail darter, the spotted owl, the Kangaroo rat, the Barton Springs salamander, and the golden-cheeked warbler have become symbols of the seeming war between environmentalists and the American people, especially rural property owners.

Rural landowners have been especially angered by the inherently clumsy, costly, and uncertain procedures that underlie the ESA's dismal environmental record. Faced with the prospect of an expensive, time-consuming permitting process that could tie up their land for years (if not permanently), landowners are tempted to destroy potential endangered species habitat. If they can prevent discovery, they will avoid regulation and the property devaluation, even forfeiture, that goes with it.

For example, Marj Krueger told a Texas legislative panel[2] in 1994 (and a federal panel[3] in 1995) how she and her husband were denied the right to build a house on a lot in a Travis County subdivision for which they had paid $40,000 (and spent thousands more in expenses) after golden-cheeked warblers were found nearby; they still have to pay taxes on the lot, which FWS says retains "recreational value." Fellow Texan Margaret Rector, who also testified before both panels, told how she had bought a 15-acre tract of land in 1973 that was appraised at $900,000 in 1984; by 1992, after FWS had declared the property to be warbler habitat, the property value had collapsed to just $30,000. Urban areas have been hit, too, as evidenced by a report that the listing of the Delhi sands flower-loving fly cost the San Bernadino County (California) medical center more than $3.3 million to mitigate for the presence of eight of the flies as part of a construction project.[4]

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[2]State of Texas, House Committee on Natural Resources, "Interim Report to the 74th Texas Legislature," (November 1994), pp. 6-27.

[3]Marj Krueger, Testimony before the Task Force on Endangered Species, U.S House Resources Committee, Boerne, Texas, March 20, 1995.

[4]California Chamber of Commerce, "Congressional Task Force Seeks Suggestions on How To Reform Endangered Species Act," *The Small Business Advocate*, April 1995, p. 2.

Indeed, on the basis of the counter-productive incentives, increasingly common "shoot, shovel, and shut-up" tales,[5] and the ESA's impact on the public's attitude toward environmental protection, a case could be made that the ESA has done more environmental harm than good. As noted by Douglas Chadwick,[6] "America's biological heritage is at risk, and one of the chief culprits is the ESA."[7] Sadly, the ESA may also be contributing to social disarray, as evidenced by a recent article in the *Wall Street Journal*. Staff reporter Timothy Noah writes that outgoing Texas state FWS administrator Sam Hamilton had for some time been accompanied by at least one armed plainclothes law enforcement official when he traveled through the state to meet with community groups. The state office has also removed the FWS emblem from all the agency's vehicles, and employees all have unlisted telephone numbers and rarely wear the traditional khaki uniform. Hamilton and at least one aide have received death threats which he attributes to public anger over the ESA.[8] Less than two decades ago, when Mr. Hamilton was in college, "It seemed at the time that everybody liked Fish and Wildlife," Hamilton muses.[9]

As currently administered, the ESA greatly exaggerates the trade-offs between free enterprise, individual liberties, and biodiversity. Rather than the administrative tinkering promised by most current ESA reform proposals, this increasingly controversial law is in need of a major overhaul before it can truly protect species, habitat, and landowners on a broad scale. This revamping of the law requires major changes in the listing process and in the way in which habitat is secured.

The shortcomings of the existing ESA, as administered by the FWS, and of other current ESA reform proposals - including the brand-new Clinton Administration initiative - are discussed in Chapter 1. Chapter 2 summarizes our views on how to revise the listing process to assure that sufficient land is set aside for habitat for species deemed worthy of

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[5]Wendy E. Hudson, editor, Building Economic Incentives into the Endangered Species Act (Defenders of Wildlife, Portland, Oregon), 2nd. ed., 1993. The authors of two chapters report that many landowners are inclined to "shoot, shovel, and shut-up" to avoid problems with the FWS.

[6]Charles C. Mann and Mark L. Plummer, "Showdown on Endangered Species," *New York Times*, May 11, 1992, p. A15.

[7]Tom Arrandale, "Endangered Species," *CQ Researcher* (June 21, 1991), pp. 395-415; Michael Bean, "Economic Incentives for Endangered Species Recovery," Environmental Defense Fund Memo, October 14, 1992; Timothy Egan, "Courts' Role as Land Manager Grows," *New York Times*, May 1, 1991; Peter M. Emerson, "Spotted Owl: Bellwether or Climax to the Endangered Species Debate?", presented at the TAPPI Environmental Conference, San Antonio, Texas, April 8, 1991; Reed F. Noss, "From Endangered Species to Biodiversity," chapter in *Balancing on the Brink of Extinction*, Kathryn A. Kohn, editor (Island Press, Washington, DC), 1991; Michael J. Scott, Blair Csuti, Kent Smith, J. E. Estes, and Steve Caicco, "Gap Analysis of Species Richness and Vegetative Cover: An Integrated Biodiversity Conservation Strategy," chapter in Kohn, op. cit.; Scott Thurm and Bert Robinson, "Species Act Endangering Life in the West," *San Antonio Light*, May 1, 1992, pp. A1, A13.

[8]Timothy Noah, "Angry Threats Targeting Federal Employees Aren't Limited to the Gun-Toting Law Enforcers," *Wall Street Journal*, May 3, 1995, p. A16.

[9]Op. cit.

protection. Chapter 3 outlines our proposal for voluntary, market-driven decisions by landowners to provide habitat for threatened and endangered species. Chapter 4 discusses several issues related to implementing a habitat preservation credits program. The technical aspects of the HPC concept are outlined in more detail in an appendix.

Chapter 1. Today's ESA and Current Reform Proposals

There is a growing consensus that the key to more effective species protection is to change the incentives underlying land use. Nowhere was the breadth of agreement on this point made more evident than during testimony provided during 1994 before the Committee on Natural Resources, Texas House of Representatives,[10] as that body sought input on how to mitigate conflicts between landowners' property rights and land use with federal and state policies for species protection. Among those supporting an incentives approach were Judy Carter and Ken Kramer of the Sierra Club's Lone Star Chapter; Sandra Skrei and Susan K. Hughes from the National Audubon Society; Larry McKinney, Director of Resource Protection for the Texas Parks and Wildlife Department; Bill Tullos representing the Texas Farm Bureau; and Mike Bradford of the Natural Resources Foundation of Texas.

The Endangered Species Act was enacted in 1973 because the public saw species habitat as a valuable land use, but the command-and-control process that Congress chose for its implementation has ignored the fundamental economic problem, the problem of scarcity.[11] Instead of encouraging the use of markets and private property incentives, command-and-control measures implemented by the U.S. Fish and Wildlife Service (FWS) have tended to oppose and erode them. As economist Richard Stroup says, government agents implementing the ESA have often acted as though there are no limits to the amount of land they can set aside as species habitat, as though they are exempt from the problem of scarcity of land resources for saving species. Their actions, he notes, have had perverse results.[12]

As stated earlier, the chief reason for the ESA's ineffectiveness is that the FWS' implementation procedures fail to incorporate any effort to make habitat a valuable land use for individual landowners. Instead, the FWS procedures have turned the presence of such habitat on private lands into a major liability. In addition, under today's FWS procedures, species stabilization and recovery often begin too late, because habitat has usually become scarce long before species are endangered, or even threatened. Detractors have even suggested that the ESA has been used as a clandestine zoning tool to prevent development.

Current FWS procedures are also based on a species-by-species approach to protection, although federal agencies have been trying to gradually shift to an ecosystem approach. As Sara Vickerman and other experts have pointed out, "they'll never have enough people, or

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[10]Op. cit.

[11]Richard L. Stroup, "The Endangered Species Act: Making Innocent Species the Enemy," (PERC, Bozeman, Montana) PERC Policy Series, No. PS-3, April 1995, p. 3.

[12]Op. cit.

enough money to deal with species one at a time."[13] Land use changes usually affect several species, and an ecosystem approach would render the ESA's lengthy, cumbersome listing process obsolete. [For a discussion of why a legislative fix is better than merely revising the FWS regulations, see Chapter 4.]

The Existing ESA Implementation Scheme

Despite the ESA's well-documented defects, many environmentalists have wondered what all the fuss is about. For example, Hamilton reported that only one project cancellation had resulted from the current FWS administrative procedures.[14] A year later, Reid claimed that the FWS procedures had killed only 19 projects out of 2,000 formal and 71,560 informal consultations.[15]

Unfortunately, project cancellation data mask many significant negative effects, including what the FWS procedures fail to do. Projects have had to be modified and delayed, or taken off the drawing board altogether, with the first hint that an ESA consultation would be required. Also, the statistics do not include impacts on private land, such as the effects of uncertainty on property values and eligibility for equity loans. Currently, over 50 percent of endangered species occur only on private lands.[16] The consultation and conservation planning process is especially burdensome to small landowners.[17]

Perhaps the most serious flaw in today's species protection scheme is that, by cooperating with the FWS, landowners only subject themselves to potentially serious liabilities. Another concern is due to the fact that, while only those landowners who must consult with the FWS will be directly affected by the procedural prohibitions, all landowners in an area proposed for listing have to wait indefinitely to find out whether their land will be demanded as habitat. Interior Secretary Bruce Babbitt admits that, "when a species is listed, there is a freeze across all of its habitat for 2 or 3 years."[18] Moreover, by the time a species is listed as threatened or endangered, species recovery costs may be dramatically increased, or

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[13]Arrandale, op. cit.

[14]Joan Hamilton, "The Species Axe: A Prized Conservation Law Lies on Congress' Chopping Block." *Sierra* (January/February 1992), pp. 29-31.

[15]Hudson, op. cit., pp. 68-74.

[16]National Heritage Data Center Network, *Perspectives on Species Imperilment* (The Nature Conservancy, Arlington, Virginia), 1993.

[17]Mark Suwyn, "We Saved the Salamander - But It Wasn't Easy," *Wall Street Journal*, November 29, 1993, p. A12.

[18]Bruce Babbitt, "The Triumph of the Blind Texas Salamander and Other Tales from the Endangered Species Act," *E Magazine*, 54 (March/April 1994); quoted in "Defining Harm to Wildlife," by Ike C. Sugg, *The National Law Journal*, June 20, 1994, p. C3.

it may even be too late to save the species. There are also no incentives for landowners not forced to consult with the FWS to upgrade or create habitat.

The costs, in time and money, of the required incidental take permit are large and uncertain. For example, in 1992 the cost for a permit in spotted owl habitat was about $250,000,[19] while the average cost for a permit in the Hill Country of central Texas was about $9,000 per acre.[20] Despite the high procedural expenses, there is no guarantee that a sought-after permit will ultimately be granted. Even the proposed listing of a species can cause major delays and lower land values by creating uncertainty about allowable land uses.[21] Langford[22] and Klintberg[23] have asserted that environmental organizations have used the costly nature of FWS permitting system to acquire land at fire sale prices.

Other, more subtle, but still significant, flaws come into play in regions where landowners are well aware of the FWS procedures. The uncertainties regarding future land use and the costs of complying with FWS procedures create incentives to hide the habitat of threatened species. A personal experience of the senior author's provides a good example of some of the resulting bizarre and regrettable behavior.

While he was on an outing that required permission to go on private land, the landowner, before giving permission, reviewed a list of the outing participants' names and occupations. The outing leader said that if Mr. Merrifield had listed himself as an environmental economist, the landowner would have been very likely to deny him permission to enter. The landowner, explained the outing leader, did not want his property rights limited by someone discovering an endangered species on his land, and "environmental economist" might sound too close to "biologist" - someone certain to be denied access.

The ESA says that every species is priceless, but the FWS procedures give landowners a strong incentive to prevent the discovery of endangered species or their habitat. The high stakes described by Langford,[24] Mann and Plummer,[25] and Suwyn[26] make it likely that many do more than conceal them; Mann and Plummer state that landowners may destroy species or allow natural forces to do the job. For such reasons, at least one state wildlife

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[19]Mann and Plummer, "Showdown on Endangered Species."

[20]George W. Gau and James E. Jarrett, "Economic Impact Study: Balcones Canyonlands Conservation Plan," Bureau of Business Research, University of Texas at Austin, 1992.

[21]Suwyn, op. cit.; David K. Langford, "Along the Back Sendero," *Texas Wildlife* (August 1991), p. 19.

[22]Op. cit.

[23]Patricia P. Klintberg, "Dances with Land Part 2: How Land Trusts Acquire Property," *Beef Today* (November/December 1991), pp. 10-12.

[24]Op. cit.

[25]Charles C. Mann and Mark L. Plummer, "The Butterfly Problem," *The Atlantic Monthly* (January 1992), pp. 47-70.

[26]Op. cit.

agency will not readily disclose where rare and endangered species are located.[27] With the perverse incentives created by the current FWS procedures, it is no wonder, as reported by Michael Bean,[28] a leading expert on the FWS procedures, that "increasingly, recovery strategies are effectively writing off private lands."

According to many environmentalists, including Bean, the FWS's poor performance can be mostly attributed to Congress' refusal to provide sufficient funds.[29] This claim is common even though, as the *Wall Street Journal* reported,[30] the number of FWS regulators has doubled since 1985 and the agency's annual appropriation has increased from $426 million in 1988 to $764 million in 1992. No amount of additional money, though, would change the disincentives created by the FWS procedures - disincentives which make landowners try to keep anything that sounds close to a biologist off their land or which cause landowners to eliminate habitat before it is discovered.

Other problems stem from the fact that the FWS procedures can be manipulated such that regulators and their political bosses can work behind the scenes to frustrate species protection efforts while publicly avowing their importance. One tool has been to delay the listing of species until a project that threatened the species was completed.[31] Through such selective enforcement practices, bureaucrats can appease key lawmakers who could be hurt if projects in their districts were canceled or delayed.

Budgetary decisions and the leveraging of administrative options are the routes by which politics distorts what should be strictly scientific determinations.[32] According to Mann and Plummer,[33] FWS decision making has become highly politicized: "The agency, formerly a haven for guys who liked to work outdoors, is now a hot spot of sophisticated partisan arm-twisting."

It may be that the law and its implementing regulations were deliberately written to foster an environment conducive to influence-peddling. Alternatively, the extent of influence-peddling over ESA decisions may provide evidence that implementation is the weakest link in

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[27]Klintberg, op. cit.

[28]Op. cit.

[29]Tom Horton, "The Endangered Species Act: Too Tough, Too Weak, or Too Late?", *Audubon* (March/April 1992), pp. 68-74; Nancy K. Kubasek and M. Neil Browne, "The Endangered Species Act: An Evaluation of Alternative Approaches," *Dickinson Environmental Law Journal* (forthcoming).

[30]*Wall Street Journal*, "Go Fish," November 8, 1993, p. A22.

[31]Michael Bean, "Looking Back over the First Fifteen Years," chapter in Kohn, op. cit.

[32]Peter Montgomery, "Science Friction: Playing Politics with Scientific Research" *Common Cause Magazine* (November/December 1990), pp. 24-29.

[33]Mann and Plummer, "The Butterfly Problem."

public policy making and its analysis.[34] Influence-peddling pressures may also explain why the FWS persistently ignores its own priority system and changes it so often.

Current ESA Reform Proposals

As Kubasek and Browne[35] report, the 1994 congressional ESA reauthorization debate (and its counterpart in 1995) has not offered a basis for much optimism about the likely nature of ESA reauthorization legislation. None of the published proposals would maintain biodiversity with minimum costs to landowners (either monetarily or in loss of freedoms). Instead, each would further reduce the ESA's effectiveness, or increase landowners' burdens, or both. Unless, as some hope, the high costs of these proposals would terminate the public effort to maintain biodiversity, their implementation would also significantly increase the scope of government.

One set of proposals would further encumber the FWS with extra due process and decision-making criteria. These schemes would reduce the ESA's environmental effectiveness without assuring landowners any relief. By lengthening the decision-making process, these proposals could actually leave landowners in limbo even longer.

Another set of proposals, put forth by ESA supporters, would increase the FWS' enforcement powers and increase funding levels for listing and recovery efforts. This might shorten permitting timetables, but it would also strengthen the hand of the FWS, adding to landowners' burdens. The end result would likely magnify perverse incentives to conceal and destroy habitat.

A third set of proposals sought to require compensation for any landowner losses incurred as a result of the prohibition of activities that reduce biodiversity. Such proposals raise several issues: one is cost. Land acquisition, tax incentive, and fee approaches would create significant, permanent budgetary obligations and possibly lead to a major increase in federal land holdings. Administrative and philosophical issues might be even more troublesome. Should people be paid to refrain from socially harmful actions? We do not, for example, pay people not to emit pollutants on their property. It would be difficult to ascertain appropriate compensation, which would require a determination of what someone would otherwise have done, and a measure of what benefit their decisions would have netted them.

The Clinton ESA Initiative

On March 7, 1995, Clinton Administration officials announced a plan to make the ESA more palatable to landowners.[36] Interior Secretary Bruce Babbitt and Dr. D. James

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[34]Charles Wolf, Jr., *Markets or Governments: Choosing Between Imperfect Alternatives* (MIT Press, London), 1993.

[35]Op. cit.

[36]U.S. Fish and Wildlife Service, "Administration Proposes Endangered Species Act Exemptions for Small Landowners: 'Guideposts for Reform' Would Give More Authority to States," March 7, 1995, 21 pp.

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Baker, Undersecretary of Commerce for Oceans and Atmosphere, explained that the Clinton plan would exempt small residential tracts of property (under 5 acres) from ESA restrictions for threatened species, increase participation by state regulatory bodies in ESA decision making, and mandate greater scrutiny of the scientific analysis supporting endangered species decisions.

According to Babbitt,[37] the Clinton plan demonstrates that the Administration is "serious in its efforts to balance the rights of individual landowners with the community's right to a healthy environment." The 10-point package includes promises to provide quick, responsive answers and certainty to landowners; create incentives for landowners to conserve species; focus on groups of species dependent upon the same habitat; and prevent species from becoming endangered or threatened.

The Clinton plan does address most of the major complaints that citizens have lodged against the ESA. Unfortunately, the incentives package, as outlined, would apply only to those situations in which it is possible to measure a conservation benefit to a species from habitat improvements; the "carrot" is that landowners would not be penalized for making such improvements. Moreover, the proposal relies on regional habitat conservation plans, which lack a statutory foundation and are thus on shaky legal ground, as its primary tool in preventing species from becoming threatened or endangered. Since RHCPs also require long lead times and the cooperation of large numbers of landowners, the Clinton plan may be irrelevant in many places.

Summary

In summary, neither the existing ESA, nor the proposals put forth in 1994 as ESA reauthorization options (which are still on the table), nor the Clinton Administration's just-released 10-point plan provide adequate solutions to the problem of protecting threatened and endangered species and their habitat without endangering rural landowners and fueling the growing backlash against all federal species protection programs.

R. J. Smith, senior economist for the Competitive Enterprise Institute, has argued that the only appropriate fix for the problems with the ESA is a solution that provides incentives for landowners to house rare species.[38] Like many others, Smith says that the current ESA "harms people and private property as well as harming wildlife and wildlife habitat. It penalizes them for being good stewards and makes wildlife and wildlife habitat a liability instead of an asset." Much more testimony on the negative impacts of the current law is provided by the Texas House Committee on Natural Resources.[39]

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[37]Op. cit.

[38]Valerie Richardson, "Add Species Act to Endangered List," *The Washington Times, National Weekly Edition*, February 13-19, 1995, p. 11.

[39]Op. cit.

Chapter 2. Reforming the ESA Listing Process

As noted in Chapter 1, the Endangered Species Act as now constituted is bad law for several reasons. First off, species can be proposed for listing, and even listed, based only on the "best available data"; there are no concrete standards which proposed listings must meet to justify the stoppage of commerce in real property in the supposed habitat areas of the species. Second, the law does not provide for compensating those whose property values are negatively impacted from the listing of a species. Third, those most impacted by the listing process are virtually powerless to protest on either scientific or economic grounds. As a result, the law allows the FWS near-dictatorial powers to wreak havoc with landowners and destabilize long-range economic planning for entire ecosystems.

Basing Listings on Sound Science

Almost every critic of the ESA agrees that the quality of the science undergirding the listing of species and the allocation of habitat needs considerable improvement, especially in the area of consistency. Yet in a world in which so many scientists and their institutions depend on government grants, and in which questioning the "official wisdom" may have severe consequences, it would not be too difficult to expand the official scrutiny of proposed listings without providing affected landowners any more real protection from abuses of the listing process than they have today. After all, it takes a brave person to suggest that the emperor has no clothes.

In the words of West Texas water district manager A. Wayne Wyatt, the FWS' listing procedures constitute a "carefully crafted process, which avoids any serious opposition to the listing of a species as endangered until they have woven their net so carefully and tightly that those who will be affected have in essence been ambushed. It certainly is not a process of fair and equitable treatment to those who will be affected by the process."[40] Basing his comments on three case studies of FWS actions in Texas, environmental consultant Steven D. Paulson argues that, when species are listed on opinions based on little or no data, the FWS will not respond to data that run contrary to those opinions, and that, when FWS contractors provide information that is contrary to its own opinions, that information will not be released to the public.[41]

According to Wyatt, in drafting the rule to generate a listing, the FWS is required by law only to assess the best available scientific and commercial information on a species and the threats faced by the species. This evidence could be hearsay or from a one-day survey. Moreover, Wyatt says, the same FWS employee who drafts a proposed listing rule commonly

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[40]A. Wayne Wyatt, manager, High Plains Underground Water Conservation District No. 1, Testimony before the Task Force on Endangered Species, U.S. House Resources Committee, Boerne, Texas, March 20, 1995.

[41]Steven D. Paulson, SWCA Inc. Environmental Consultants, Testimony before the Task Force on Endangered Species, U.S. House Resources Committee, Boerne, Texas, March 20, 1995.

serves as the principal reviewer of public comments.[42] Bob Stallman, President of Texas Farm Bureau, expressed concern that anyone can petition the Secretary of the Interior for the listing of a species without presenting any evidence to substantiate their demands. In a recent study, Stallman noted, the Natural Resources Foundation of Texas found this to be true of a large group of petitions submitted by student groups.[43]

One proposal to improve the listing process is to require "peer review" of the science supporting the listing. But Langford warns that, since the FWS can choose its own peer reviewers from among recipients of its own or other federal research grants, the peer review process is not likely to be objective.[44] Wyatt suggests that the review process be conducted by a non-biased peer review group comprised of trained scientists with expertise in all areas addressed in the proposed listing rule, including zoologists, biologists, geologists, hydrologists, and engineers, and selected from a list of willing scientists at random by computer.[45]

What most supporters and critics of the ESA's listing process commonly ignore is that the soundness of the science used to justify a species listing needs to be subjected to greater **public** scrutiny. Paulson cites one example of how the FWS skews the playing field in the listing process. After five environmental organizations petitioned the FWS for the listing of nine invertebrates in Bexar County, Texas, in 1992, the FWS admitted that there was insufficient data to warrant the listings, but then awarded a research grant to the same individuals who had done the consulting work for the environmental groups to conduct research to develop data to support their claims. Not only would this grant appear to create a conflict of interest, added Paulson, the money was doled out without any competitive bidding and without informing the affected landowners, who found out when the researchers began to seek access to their property.[46]

Wallace Klussmann, a fish and wildlife specialist who recently retired as Professor Emeritus from Texas A & M University, suggests that peer review be done by the National Academy of Science outside the realm of the regulating agency; that persons petitioning for a listing not be eligible for research funds relative to that listing; and that there be a minimum standard for the scientific information base supporting any listing. He also recommends that economic and social impact analyses be conducted along with the biological research during the listing process.[47] Whether it is the National Academy of Science or other outside peer reviewers chosen randomly from lists of qualified individuals with no stake in the listing

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[42]Wyatt, op. cit.

[43]Bob Stallman, President, Texas Farm Bureau, Testimony before the Task Force on Endangered Species. U.S. House Resources Committee, Boerne, Texas, March 20, 1995.

[44]Langford, op. cit.

[45]Wyatt, op. cit.

[46]Paulson, op. cit.

[47]Wallace G. Klussmann, Testimony before the Task Force on Endangered Species. U.S. House Resources Committee, Boerne, Texas, March 20, 1995.

outcome, it should be clear that the process of scientific review conducted by FWS employees or their direct contractors must be scotched in favor of a truly open review process.

Local Participation and Due Process

Regardless of the level of scrutiny to which the scientific evidence for species listings is subjected, there will always be lingering doubts by affected citizens as to the honesty of the analysis or the need for the specific proposed species restoration plan. Wyatt notes that under the current scheme, the FWS is only required to publish any proposed rule to list a species in the *Federal Register*, which is not widely read by rural landowners. Because no local publication notice is required, the average citizen is unlikely to know of a proposed listing. Nor are local hearings required unless a request is made under specific guidelines. Even if a hearing is granted in the area to be affected by the listing, no local notice of when or where the hearing is to be conducted is required, nor is the FWS obligated to notify the person or party who requested the local hearing, or even the state or federal elected representatives who serve the affected area.[48]

All of this avoidance of the affected public seems strange to Texans, who for the past several years have watched their environmental regulatory agencies greatly expand the public's role in rulemaking that may affect their lives and livelihoods. At the Texas Natural Resource Conservation Commission (TNRCC), for example, task forces comprised equally of citizen and industry representatives work together with agency staffers in the drafting of new regulations, providing comments and seeking consensus on as many points of discussion as can be achieved. Once staffers determine the language they are comfortable with, the proposed rule is published in the *Texas Register* for public comment; for most controversial rules (and all air quality rules), the agency also conducts a public hearing. Even after a final rule is published, TNRCC accepts petitions for rulemaking to alter rule language.

Similarly, environmental permits that may affect citizens can be challenged through a contested case hearing process overseen by administrative law judges, or hearing examiners. As evidence of the concern the agency has for informing the public of actions that may impact their lives, written notice of these hearings is commonly required to be published in multiple languages in newspapers serving the populations to be impacted. Final actions on regulations and permits are made by the agency's Commissioners in yet another public meeting. If protestants are not satisfied, they can file legal challenges in state district court.

While there are provisions for lawsuits challenging species listings and the FWS' compliance with its own habitat preservation requirements, the vagueness of the scientific requirements for listing a species and the difficulties of presenting contrary evidence during the rulemaking for the listing mitigate against successful challenges by landowners or even local governments. Given the fact that an expansive listing process strengthens the power of the FWS and the overall federal role in land management, it is not surprising that many legal challenges to FWS species protection activities are initiated by friendly parties.

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[48]Wyatt, op. cit.

Wyatt contends that the current listing process invites lawsuits to force enforcement by providing "a wonderful opportunity to earn large legal and technical witness fees by filing against a party (FWS) who wants to be given the power to enforce rules to control the habitat of a listed species.[49] According to David K. Langford of Texas Wildlife Association, the "citizen suit" provisions in the ESA afford the FWS the opportunity to be a defendant in a "friendly" lawsuit brought by environmental organizations. As evidence, Langford cites a lawsuit brought by Fund For Animals which the FWS settled out of court, giving the plaintiff "virtually everything" they had asked for, that is, the accelerated listing of the species.[50]

If the Texas critics are right, Congress needs to amend the ESA to provide better public notice of proposed listings as much as it needs to change the law to assure that the peer review of listing proposals is done by independent, unbiased parties. Both proponents and opponents of any listing should have ample time and opportunity to prepare briefs, incorporating the testimony of other qualified reviewers, that can be presented at a hearing on the listing conducted by an administrative or civil law judge who is not an employee of the FWS or its parent agency.

In cases where the findings of the peer review panel, as presented to affected citizens at a public meeting in the areas affected by the proposed listing, are acceptable to all parties, there would be no need for such a legal contest. As in Texas, the best way to minimize such conflicts is to broaden the listing effort to include at the table those who will be affected by the proposed listing (or their representatives) and those who support the restriction of human activity to protect wildlife.

Chapter 3. Using the Market To Set Aside Habitat

Once the listing of a species as threatened or endangered and in need of safe habitat within one or more given ecosystems has been established under the scheme outlined in Chapter 2, the next step in species preservation is habitat allocation through the Habitat Preservation Credit (HPC) process. The philosophy behind the HPC system is that it transforms habitat for threatened and endangered species from a liability to property owners (under the present law and regulations) into a valuable commodity that landowners "produce" or "consume." The goal of the listing process is to set a maximum amount of habitat that can be eliminated through the use of HPCs while still providing sufficient habitat, or in cases where there is an insufficient amount of existing habitat, to win agreements to create new habitat from land that is "potential habitat" until the amount of habitat reaches or exceeds a biologically relevant safe minimum.

Under an appropriate scheme, as in any market, habitat consumers would pay habitat producers (usually through a broker) a price per unit determined by the scarcity of habitat (as

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[49]Wyatt, op. cit.

[50]David K. Langford, Texas Wildlife Association, Testimony before the Task Force on Endangered Species, U.S. House Resources Committee, Boerne, Texas, March 20, 1995.

determined by the forces of supply and demand). The proper scheme would also maximize the opportunity for economic activity to coexist with flora and fauna. As noted in Chapter 1, the best way to enhance the likelihood of species protection is through an ecosystem approach that begins long before species are proposed for listing as threatened or endangered and that facilitates coexistence with economic activity to the maximum extent possible.

The Habitat Preservation Credit

Many federal laws enacted in the past work through a command-and-control strategy that has proven to be inflexible, has ignored scarcity, and has opposed and eroded the use of markets and private property incentives. More recently, lawmakers and regulators (including Texas Natural Resource Conservation Commission Chairman John L. Hall) have begun touting a new paradigm for environmental regulation that involves schemes that set compliance thresholds and allow flexibility toward achievement of those thresholds. The 1977 and 1990 amendments to the federal Clean Air Act incorporated a variety of incentives, in particular "emission reduction credits" (ERCs), which enable public or private entities to buy or sell credits earned for reducing air pollution in return for the right to open up new facilities or expand existing activities.

Our proposal for establishing habitat as a valuable commodity, and thereby ensuring landowner cooperation in species protection, operates through a device that can be called a "habitat preservation credit" (HPC). One HPC would allow its buyer to adopt land use practices on one acre that would be inconsistent with preserving that acre as habitat. The physical price of each HPC would be set on an ecosystem basis by the FWS or a state agency with delegated authority to operate the HPC program as acres permanently maintained as habitat per habitat acre eliminated. The physical price would be set such that the amount of suitable habitat (existing habitat plus newly created habitat) could not fall below a level that is sufficient from the standpoint of one or more species' biological requirements. The monetary price of a HPC would be set by market forces.

The HPC strategy would operate through management agreements (see below) that are similar to tradable development rights and marketable air emission reduction credits (ERCs). Under both schemes, an environmentally positive activity in one location (reducing emissions, creating or preserving habitat) generates rights that can be applied to an environmentally negative activity (new or continued emissions, habitat destruction) elsewhere.

The HPC market process also has similarities to the conservation plans that are a required element in the FWS procedures. Those plans include mitigation measures such as land acquisition and rehabilitation.[51] HPC management agreements would also involve property right transfers and habitat restoration.

Despite these similarities, the HPC market process differs significantly from ERCs as well as from current FWS procedures. First, within a given ecosystem, the ratio of habitat acres preserved as (or restored to) habitat per HPC is a known factor that is the same for everyone at any given time. Second, the purchase of a HPC would confer a right that could

[51]Carter, op. cit.

only be exercised once. Unlike ERCs, HPCs could not be resold after the right conferred was exercised (because development is permanent, whereas emissions are recurring). While ERCs have a shelf life of several years, there is no expectation of future value (or price) of a HPC.

Advantages of the HPC Approach

Even where HPC markets are not active enough to be competitive, the HPC market approach would still have at least six advantages over the current FWS procedures and most published reform proposals.[52] First, because all HPC transactions will be voluntary and will only happen when the price is right, the scheme fosters the common interest in biodiversity with a much smaller infringement on personal liberties. In areas where additional acreage must be converted from potential to actual habitat, conservation groups could purchase HPCs without following through with any development activity.

Second, as explained in detail in the appendix, the HPC approach fosters species preservation by preventing the violation of agreed-upon safe biological minimum levels of habitat. The number of acres within an ecosystem that must be set aside as habitat, as well as the number of acres that must be protected in return for each acre available for HPC purchases, would be roughly determined in advance. As each of n HPCs is purchased, an equivalent portion ($1/n$th) of the desired habitat maintenance outcome is assured. This feature may help the HPC approach satisfy the U.S. Supreme Court's new "rough proportionality" test, outlined in the *Tigard* decision of June 24, 1994.[53] The Court, by a 5-4 vote, ruled that restrictions on developers amount to unconstitutional takings unless the government can show a "rough proportionality" between the restriction and the impact of the development.

Third, the HPC approach minimizes arguments over listings and habitat designations by compelling the FWS, for each species or ecosystem, to make public and support with scientific documentation its definition of habitat and its determination of how many acres meeting that definition would constitute a safe biological minimum habitat level (through the processes outlined in Chapter 2). That would make it easier for Congress and the public to monitor the FWS' performance and much more difficult for anyone to selectively enforce the law for political gain. Politics would be confined to the broad issues where it belongs, and where the political process can work reasonably well, and kept out of the details, where it can only generate mischief and undercut public trust.

Fourth, while the current scheme lowers **all** affected property values, the HPC process will raise land prices where the non-habitat use values are lowest. This will spread the economic benefits of development pressures such that a large fraction of landowners should cheer an imminent listing and eagerly reveal the presence of endangered species and the habitat or potential habitat on their land.

Fifth, though the value of property with high non-habitat use values could still be reduced in value by a listing, the decline would be smaller than under the current scheme, largely due to reduced delays (less uncertainty) and reduced procedural requirements (plans,

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[52]Hudson, op. cit., Kubasek and Browne, op. cit.

[53]*Wall Street Journal*, op. cit.

surveys, etc.). Payment of the HPC's readily observable price would assure the right to proceed expeditiously with non-habitat uses. Moreover, HPC purchases could be subsidized (perhaps through tax credits or deductions) to the extent that the public is willing to share the cost of habitat protection and restoration (more on this later).

Sixth, most landowners who enter into management agreements that generate HPCs would retain title to the affected acreage, but the assessable value of that property (hence the landowner's property tax load) could fall significantly in some areas. The sale of development rights would be especially beneficial to landowners who desire to remain on their homesteads despite development pressures (including ever-increasing property taxes).

Cost estimates in proposed regional habitat conservation plans (RHCPs), such as the Balcones Canyonlands Conservation Plan[54] (BCCP) for central Texas, support the assertion that the HPC approach would be much less costly to developers. Under the BCCP, habitat eliminators would help pay for refuge land (through development fees) in lieu of compliance with the ESA's Section 10(a) permitting process. Gau and Jarrett[55] found that the proposed per-acre development fee could be set at a fraction of the per-acre cost to each landowner of complying with Section 10 (even without the big government and environmental group subsidies), and still generate enough funds for outright purchase of the targeted amount of refuge lands (habitat). In areas where the FWS procedures are being aggressively implemented, a switch to the HPC market would increase all property values, even where landowners were seeking permission to eliminate habitat. The HPC process has the added benefit of being quicker; for example, the BCCP is still not an operative plan after several years of negotiation.

HPC Management Agreements

To create a HPC market within an ecosystem (or for a single species), the FWS or a state agency would devise regionally standardized management agreements (similar to easements) aimed at protecting the habitat values of existing or newly created habitat on an ecosystem basis. Landowners would produce HPCs by accepting these agreements, which would enable HPC purchasers to remove one acre per HPC from consideration as habitat.

An appropriate management agreement would include a mixture of required and banned activities, ranging from minimal land use constraints to active management, or even to outright purchase by the government for some extra-sensitive species. Through such agreements, many developers would be able to avoid out-of-pocket expenditures by producing the required HPCs on some of their own acreage, thereby allowing them to eliminate habitat (consume HPCs) elsewhere on their own property. In this case, they would still be entitled to compensation if there was a net loss in their property value of more than a governmentally determined threshold (20% under HR 925).

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[54] J. B. Ruhl, "Regional Habitat Conservation Planning under the ESA: Pushing the Legal and Practical Limits of Species Protection," *Southwestern Law Journal*, 44-4, 1991, pp. 1393-1425. See also Gau and Jarrett, op. cit.

[55] Op. cit.

There might be a few isolated cases in which a species could be saved only through a total restriction of activity on a given property, but in most cases deed restrictions would be sufficient to provide habitat for listed species. As already demonstrated under the current law, confiscation (even with compensation) is usually undesirable from both an economic and an efficiency perspective. Mandating outright purchase would actually be counter-productive, largely because the ability to maintain pristine ecosystems that way is minimal.[56] The challenge, then, is to define the terms under which humans and natural systems can coexist.

The determination of physical price for HPCs within an ecosystem would be largely, but not entirely, a scientific judgment. Biological requirements, while paramount, are not all-or-nothing. While it is true that the more stringent the requirements, the higher the probability of species survival, survival probabilities will always be less than 100 percent. Many extinctions occur without any human culpability, and attaining the last few percentage points toward greater certainty of species survival (through adding or upgrading habitat) could be prohibitively costly. The process of determining how much suitable habitat is enough requires a prior decision as to what constitutes acceptable probability for given species.

Like the determination of how much habitat is enough, both the selection of a definition for "habitat" and the determination of exactly which acres meet that definition are partly political questions. The correct definition of the property rights and the right physical price of HPCs would depend on how habitat is defined and on three parameters, each expressed in units of land area: (1) Unprotected habitat (UH); (2) Safe minimum additional secure habitat (ASH); and (3) Potential habitat (PH). For details of how to calculate the minimum additional secure habitat (ASH) required for species preservation, see the appendix.

Management agreements can be updated to incorporate new information, such as biological discoveries or technical innovations. For example, say the standardized agreement for an ecosystem is finalized in 1996, then a relevant discovery is made in 1998. The management agreement necessary to create a HPC for sale after the discovery date could be revised to incorporate that new information. The new information could also be used to change the terms of management agreements that were part of a pre-1998 HPC transaction, but only if there is a willing buyer (the government) and a willing seller (a landowner bound to comply with the pre-1998 terms).

The use of property rights and markets to retain biodiversity need not be limited to terrestrial plants and animals. Where air or water pollution threatens vulnerable species, effluent fees or tradable discharge permits could be used to fund mitigation measures or provide a safe level of minimum habitat. Where surface water or groundwater withdrawals during low flow periods threaten species habitat, water users could be required to share the expense of sustaining sufficient flows in the habitat areas, and or preserving the species in an artificial habitat until normal flows resume.

Such a problem now exists in South Central Texas. Spring flows from the Edwards Aquifer sustain several endangered species. During a severe drought, pumpage could eliminate several species by temporarily destroying their habitat. Depending upon relative cost effectiveness, the right response is for aquifer users to pay for some combination of

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[56]Jan Ziegler, "Congress Seeks Action To Save Species," *New Scientist* (November 26, 1988), p. 21.

pumpage reduction through tradable firm and interruptible pumpage rights,[57] spring flow augmentation, and artificial habitat creation and maintenance.

How HPC Markets Would Work

Market forces would determine the dollar price of a HPC (see Figure 1), with P = the price of a HPC. For the buyer, P is the amount paid for permission to eliminate habitat on one acre. For the seller, P is the amount received for accepting a management agreement on the amount of acreage specified by the physical price. Q = the number of HPCs produced and sold per time period (probably a year). The downward-sloping demand (D) line reflects the relative profitability of land use changes that eliminate habitat. In other words, as HPCs become scarcer and more expensive, fewer habitat-eliminated land uses will be profitable, so fewer HPCs would be purchased. Point A indicates each time period's highest return to habitat-eliminating land uses. Point B indicates how many acres of habitat would be eliminated per time period if HPCs were free (if there were no endangered species policy). The upward-sloping supply curve (S) reflects the physical price, expected losses from forgoing land uses prohibited by the HPC management agreement, and the costs of management practices imposed by HPC agreements. The smaller the number of HPCs sold per year (smaller Q*), the longer it will take to increase the amount of protected habitat to the safe minimum level.

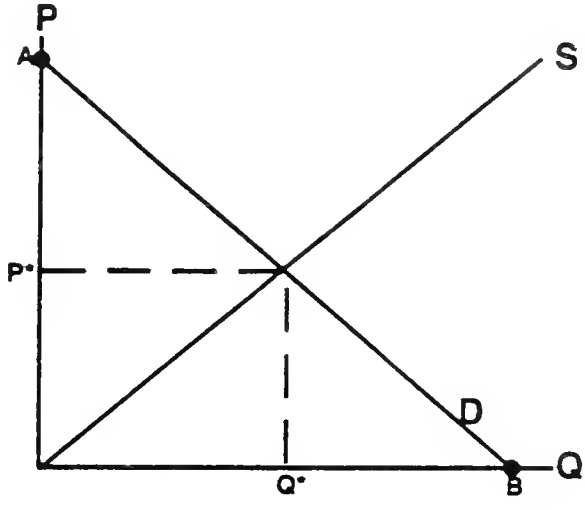

Figure 1. Determining the Dollar Price of HPCs.

[57]John Merrifield, "Groundwater Resources: The Transition from Capture to Allocation," working paper.

For a better understanding of the HPC market, and the kinds of factors underlying supply and demand, see the appendix or consider the following scenarios:

(1) If a region's population begins to rise more rapidly, urban land uses would increase in value, increasing the demand for HPCs (D shifts to the right). The opportunity cost of agreeing to forgo habitat-eliminating land uses would also increase for some landowners, slightly reducing the supply of HPCs (leftward shift of S). The combined effect of the S and D shifts would be an increase in P*, and a smaller increase in Q*.

(2) If the "takings" threshold (assuming there was one to begin with) was significantly lowered, HPC purchases would have to be subsidized to a greater extent. As in scenario 1, that would also increase demand, P*, and Q*.

(3) If the physical price (acres protected per acre of habitat eliminated) were raised, the supply of HPCs would decline. That would increase P* and reduce Q*.

(4) Making management agreements more demanding would have the same effect as scenario 3.

A simple example shows how the HPC process would work: Suppose a landowner in Bexar County wanted to purchase HPCs to develop 10 acres of land currently valued at $5,000 per acre. Under a law like HR 925, his maximum out-of-pocket cost for HPCs for the 10 acres would be 20% of the property value (or $1,000 per acre); the government would be obligated to expend compensation funds to the extent that the market price for those HPCs exceeded that amount. After calling his broker, the Bexar County landowner learns that a landowner in nearby Medina County, but within the same ecosystem, is selling HPCs for $1,200. To close the deal, the broker calls up the local Texas Parks and Wildlife Department office and asks for a check for $2,000 ($200 each for the 10 acres) to match the $10,000 from the Bexar County landowner. Although the Bexar County landowner is out $10,000, he is now free to subdivide his property into five 2-acre lots that will sell for $8,000 per acre. The Medina County landowner has had to set aside 15 acres which was lying fallow for species habitat, but he has $12,000 in cash with which to buy the new pickup truck he needs.

By allowing a rental market for HPCs, permanent habitat providers would not be the only landowners with an incentive to reveal and protect habitat. Landowners who expected to someday eliminate some of the habitat on their property could gain in the meantime. That would reduce their incentive to conceal or destroy species or their habitat, and it would also lower the probability that they would ultimately follow through with their habitat destruction plans. Once a rented HPC is taken from the market (by habitat elimination), the renter would have to replace it with another rental, or a purchase.

The HPC market process might also be more appropriate for government land than the current FWS procedures. Officials might frequently prefer the HPC process to the ESA Section 7 process that is available to virtually all government projects. Isolated examples - such as the Army buying red-cockaded woodpecker habitat to minimize the restrictions on

their use of Fort Bragg[58] - hint that implementation of the HPC process could help government officials perform their tasks more efficiently. Though agency directors might not react to market pressures in the same way as landowners, habitat-elimination practices, through HPC purchase requirements, would still drive the acquisition of enough additional suitable habitat to protect a species.

Since no two tracts of land are identical, the eliminated acre may be **better or worse** habitat than the acreage that will be protected to supply the HPC. Factors other than an area's physical features, including proximity to other habitat, are often important. Although instances in which the HPC process might result in harm to a species, the scheme should include an opportunity for agency review of HPC purchases challenged by a third party (government agency or citizen's group) on biological grounds. If it were necessary to interfere with the market by modifying or halting the HPC transaction, compensation might (if another HPC is not available at the same price) be required (under current statutory proposals) for affected landowners. Such a government role is like a watermaster's power to modify or stop proposed water rights transfers challenged by another water user.

Since administrative procedures can be slow, costly, and vulnerable to being biased by special interest lobbying, review and modification powers should be statutorily limited to cases with clear, compelling scientific merit. The possible harm caused by not reviewing marginal cases could be expected to be offset by HPC transactions that have an above average species protection benefit. Such especially beneficial transactions are likely, because many activities that would require a HPC would not always render the impacted area entirely unsuitable for species use.

Chapter 4. Bringing the HPC to Reality

Given the premise that habitat preservation credits would provide appropriate incentives for landowners to cooperate with federal and state regulatory officials in protecting and creating habitat for threatened and endangered species, there are still several questions to be answered regarding the best way to implement the concept of HPC markets.

Why a Legislative Change Is Needed

One question involves whether it is necessary to change the law at all (to institute HPCs; revamping the listing process, as outlined in Chapter 2, will surely require a statutory change). The ESA as currently written does not prohibit the use of market mechanisms and incentives to reduce the elimination and increase the production of habitat. Regional habitat conservation plans, like that proposed for the Balcones Canyonlands in Texas, have not required any statutory changes, and the FWS could promulgate procedures to establish HPC markets without any statutory changes, either.

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[58]Bean, Environmental Defense Fund Memo, 1992.

On the other hand, Ruhl[59] has pointed out that these regional habitat conservation plans stand on shaky legal ground, and by the same logic administratively created HPC markets would likely be a bad economic risk. The reason is that regulations not backed up by the force of law can be amended or even rescinded with changing political tides. Property rights granted administratively are therefore far less certain than rights undergirded by legislation. Moreover, Brandes has provided evidence that the Balcones Canyonlands Conservation Plan has "from day one been a special interest plan"[60] in which saving endangered species "has become a debatable byproduct."[61]

Of equal importance, the current ESA comes into play only after a species has been proposed for listing as threatened or endangered. By amending the ESA so as to specifically authorize the creation of HPC markets, species could be protected within ecosystems prior to any proposed listing.

The HPC structure, which would vary widely depending on the extent and distribution of habitat, land ownership patterns, and development pressures, might not be fully competitive in some ecosystems. While (see Chapter 3) even an imperfectly competitive HPC market would be preferable to the existing FWS procedures, the Section 7 and Section 10 permitting procedures in the current law could be retained as options in case a government agency or landowner preferred them.

Implementation Steps for the FWS

While the HPC process would reduce the paperwork needed for habitat protection (largely be eliminating case-by-case review), there would still be plenty of work for federal or state officials. To implement HPC markets, The FWS and perhaps various state governmental agencies would have the job of defining appropriate management agreement (MA) terms; estimating the amount of unprotected habitat (UH) and safe minimum additional secure habitat (ASH); ruling on contested HPC purchases; and enforcing HPC purchase requirements and the management agreements.

The FWS already does, or at least is required to do, the equivalent of defining and enforcing management agreements through its review of species recovery plans. With the recently begun National Biological Survey,[62] the FWS should soon be able to determine the values of UH and ASH for affected ecosystems. (Such a specific use of data obtained from the National Biological Survey in the HPC process should minimize fears that exist in some circles that the survey will be used as a land confiscation tool.) As noted in Chapter 3, the

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[59]Op. cit.

[60]Brandes, op. cit.

[61]Robert Brandes, "Voters Can't Afford To Gamble on BCCP," *Austin American-Statesman*, October 16, 1993, p. A23.

[62]*Wall Street Journal*, op. cit.

FWS could get by with a rough estimate of potential habitat (PH), which would require physical data and a restoration cost judgment.

The preferred ecosystem approach for HPC markets would eliminate the costly, lengthy, and politically sensitive listing process for thousands of potentially threatened or endangered species. Since the HPC process would relieve the FWS and landowners of the cost and uncertainty of case-by-case rulemaking, its implementation would not place greater demands on taxpayers. Indeed, the reverse is more likely.

Should Habitat Consumers Pay?

Two issues stand out in the debate over whether habitat preservation should be a burden on landowners. The first is the cost to the government of administering species protection programs; the second is the cost to the landowner of forfeiture of property rights in order to provide habitat.

A strong case can be made that the current FWS procedures are overly costly. After all, FWS appropriations increased nearly 80 percent from 1988 to 1992,[53] a time during which both landowners and environmentalists were becoming increasingly dissatisfied with the agency's performance. As explained in Chapter 3, the HPC market approach would be much less expensive to implement, especially if it is based on ecosystem management. In addition, the government's role in all but the most severely habitat-deficient areas would be limited to defining habitat, determining the amount of land within each ecosystem needed as habitat, defining appropriate management agreements for landowners considering producing HPCs, and occasionally adjudicating disputes.

The HPC approach would also be far less expensive than forcing the government to reimburse landowners for taking their land for habitat through the current FWS procedures. That would greatly increase federal land holdings and associated land management costs while only aiding landowners who suffer a minimum 20% value loss, should HR 925, a bill approved in February 1995 by the U.S. House of Representatives, become law. The issue of "just compensation" for landowners whose property rights are compromised or forfeited under the current FWS procedures remains the chief focus of today's Congressional debate over ESA reauthorization.

On one side are landowners, who consider the habitat values of private land as a costless byproduct of land use practices that have left the values intact (or even created the habitat values), not as an unused right in the public domain.[54] They believe the public should pay for the benefits once there is an opportunity cost.

On the other side are those who believe general natural environmental attributes like clean air, clean, water, and biodiversity belong to the public. They argue that, if landowners are responsible for their share of impact on shared air and water, they should be responsible

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[53] *Wall Street Journal*, op. cit.

[54] Yoram Barzel, *Economic Analysis of Property Rights* (Cambridge University Press, New York), 1989; Mark L. Pollot, *Grand Theft and Petit Larceny: Property Rights in America* (Pacific Research Institute for Public Policy, San Francisco), 1993.

for their share of impact on biological diversity. According to that view, any restrictions on land to provide habitat do not entitle affected parties to compensation because they only represent a public claim of rights that landowners have left in the public domain.

Public ownership of biodiversity is rejected by some people because habitat elimination does not produce observable physical impairment of third-party property rights like pollution does. The existence of public rights to protect species was asserted in the ESA, yet the law's failure to propose equitable means for allocating public costs for the assertion of those rights remains a chief obstacle to ending the range war between regulators and rural landowners.

The HPC approach actually provides a mechanism for resolving this dilemma. First, landowners will be able to capture the economic value in already-fallow land they agree to set aside as habitat without in most cases ceding all their rights to the land. Second, HPC consumers would in most cases see the value of their own property rise as well, especially in areas where development pressures are highest.

The cost to the public for asserting its claimed public rights in these properties can be measured as the combined net loss (if any) in property value to HPC producers and HPC consumers. The government could compensate counties and other political subdivisions for the loss in tax revenues due to the lowered property values of land set aside as habitat. Another way to pay for this assertion of public rights would be to provide tax concessions to HPC purchasers who suffered a net loss (which should, of course, be automatic under the current tax code).

Summary and Conclusions

The current FWS procedures for implementing the ESA do too little to protect species; they also threaten an unnecessarily high toll on some regional economies. The HPC market approach would create incentives to maintain and restore habitat and to avoid habitat elimination, and it would do so in a way that safe biological minimums could not be violated. It would also serve to minimize the fiscal impact of takings legislation by limiting regulatory takings to a percentage of the value of the HPC purchaser's property (which in most cases would not be exceeded in HPC transactions).

For landowners, the HPC approach would also represent an enormous improvement over the current system. Landowners with low-value non-habitat uses would be able to increase their incomes by supplying HPCs. Landowners with valuable non-habitat uses would benefit by avoiding the costly, time-consuming, uncertain ESA Section 10(a) permitting process.

The HPC approach asserts public ownership of biodiversity, in that habitat eliminators (HPC consumers) would (when they do not produce HPCs themselves) have to pay for certain uses of their own property, while HPC providers would be rewarded for protecting habitat on their property. While some property rights advocates may not be wholly appeased by this approach, it is far better than the current scheme in which all property rights in an area being considered for listing are in jeopardy and in limbo indefinitely. Moreover, by setting economic values on the rights being forfeited (the price of each HPC), the HPC approach also

sets definable criteria for compensation of negatively affected HPC purchasers should Congress opt to provide for such reimbursement.

As noted earlier, the HPC approach has at least six advantages over the FWS' current procedures and most existing proposals (including the Clinton initiative). In addition, the proposed ESA revision could help avoid another unpleasant potential outcome of species protection efforts. Many natural scientists, including Reed F. Noss,[65] have concluded that "land use and human settlement patterns must be regulated, much more so than today." Measured in dollars or freedoms lost, what Noss suggests would be a much more costly approach than just specifying general outcomes, such as reducing the need for additional secure habitat to zero over time, and achieving them through economic incentives.

The greatest enemy of any reform proposal is inertia. Transition issues are always thorny, and people have proven willing to pay a high price to avoid the uncertainty that comes with change. They stick with the devil they know. A successful defense of the current FWS procedures against the proposed market-based reform, or replacement of the ESA with another command-and-control approach, would be a great tragedy.

[65]Op. cit.

Appendix: Technical Details

The correct definition of property rights and the right physical price of an HPC depends on how habitat is defined and on three parameters:

(1) Unprotected habitat (UH);
(2) Safe minimum additional secure habitat (ASH); and
(3) Potential habitat (PH).

Each of these parameters is expressed in units of land area. Note that for any region:

$$\text{Total Area} = PH + APH + UH + NH \qquad \text{(A-1)}$$

$$\text{Minimum Suitable Habitat} = APH + ASH \qquad \text{(A-2)}$$

where APH = already protected habitat, including park and wildlife refuge acreage,
and NH = land area that is not habitat, and that could not be made suitable habitat at a reasonable cost.

PH is the land area that cannot support the species now, but that could be made (at a reasonable cost) into habitat. PH > 0 in most areas with a significant human population; for cost reasons, existing habitat (UH + APH) plus potential habitat (PH) is likely to be less than the amount of habitat that existed prior to human settlement.

A land use inventory would be needed to determine the values of UH and PH; a conservative estimate of PH would be sufficient. ASH depends on a species' behavioral characteristics and how much of its habitat is already protected, such as in parks or refuges. The objective of any species protection strategy should be to assure that enough land will remain as suitable habitat, or to make ASH = 0.

Species Not Yet on the Brink of Extinction

By definition, a species is not on the brink of extinction (threatened or endangered) whenever UH > ASH. For expositional purposes, if UH = 1,200 acres, ASH = 800 acres, and PH = 200 acres, another 800 acres must be assured of remaining suitable habitat to provide enough for the species to have a satisfactory chance to survive (or to protect a specified ecosystem). Those 800 acres would have to come through management agreements (MAs) for some combination of the 1,200 acres of existing, but unprotected habitat (UH) and restoration of some of the 200 acres of potential habitat (PH). To link habitat elimination and protection in a market, the 400 acres [(UH - ASH) = 1,200 - 800] that can still be eliminated without threatening the species must be used to bring about the protection of ASH of 800 more acres (equation A-3):

$$ASH = PP \times (UH - ASH) \qquad \text{(A-3)}$$

where PP = physical price, expressed as newly protected units of habitat per eliminated unit of habitat.

In this case, the physical price (PP) equates to 2 acres that must be protected per acre eliminated (Option A):

$$PP = ASH/(UH - ASH) \qquad (A\text{-}4)$$

Alternatively, one non-habitat acre must be restored with an MA per acre eliminated (Option B).

There are two versions of pre-endangerment Option A. With the first version, appropriate MAs would be set up for 2.0 acres per acre of habitat eliminated. With the second, a total of 400 transferable HPCs would be issued to landowners (public and private) in proportion to their share of unprotected habitat (UH), and an MA would be imposed on the remaining ASH acres. HPC sales would concentrate the habitat on the property where non-habitat land uses were the least valuable. The two versions of Option A would differ to the extent that MAs required active management.

With pre-endangerment Option B, landowners would obtain one HPC by purchasing a MA for one restored acre. Restoration would be more attractive as UH approaches ASH; that is, as the physical price increases [since PP = ASH/(UH - ASH)]. If Option B were exercised, the physical price (PP) of Option A would decline because the conversion of an acre of potential habitat (PH) to habitat protected with a MA reduces ASH, but not UH.

To see how the physical price (PP) could change, use the numbers to examine the effect of purchasing 200 HPCs, 100 each through Options A and B. The HPC purchases with Option A would shrink ASH by 200 acres and UH by 300 acres (100 eliminated, plus 200 protected), which by itself would leave ASH/(UH - ASH) unchanged at 2. But the use of Option B would further reduce ASH to 500, thereby changing PP to 1.25. Restoration of the other 100 acres of PH would lower the PP to 0.8. For administrative purposes, an annual update of the PP is sufficient. In cases where ASH and UH reach zero together, Option B would be the only remaining way to acquire a HPC.

Species on the Brink of Extinction

The best time for government intervention to create and define property rights is before a species is endangered or threatened, or when UH > ASH (although a species could still be classed as "threatened" while UH > ASH based on the rate of decline of UH). Unfortunately, for many species, ASH already exceeds UH (though UH + PH may still be greater than ASH).

If ASH is roughly equal to (UH + PH), there is nothing for market forces to allocate. The best approach in those instances, especially as PH's share of (UH + PH) increases, would be for the government to restore all of the PH acres, then to purchase a MA for all of the habitat. Short of that level of pro-active involvement, the current scheme is reasonably well-suited to such situations, which would be most likely to occur on small islands, isolated mountain summits, peninsulas, or other small, isolated habitats.

So long as (PH + UH) > ASH, it is possible to allocate up to [(PH + UH) - ASH] acres, and markets do that better than bureaus. To illustrate, let UH = 800, ASH = 1,000, and PH = 400 acres. Then the 200 acres [(PH + UH) - ASH] which can still be eliminated

without threatening the species must be used to bring about the protection of 1,000 acres (ASH). (Timing is important; the restoration of new habitat must be completed before existing habitat is eliminated.) In other words, PP_B (the physical price when a species is on the brink of extinction) acres must be protected with a management agreement per acre eliminated.

$$(PH + UH - ASH) \times PP_B = ASH \qquad \text{(A-5)}$$

or $$PP_B = ASH/(PH + UH - ASH) \qquad \text{(A-6)}$$

In this case,

$$PP_B = 5\ [ASH/(PH + UH - ASH) = 1{,}000/(400 + 800 - 1{,}000) = 1{,}000/200].$$

Since it may be difficult to get a precise measure of PH, a conservative estimate of PH should be used in equations A-5 and A-6. The ratio

$$PH/(PH + UH), \text{ or } [200/(200 + 400) = (1/3)]$$

defines the share of PP_B that must be restored habitat. The remainder,

$$UH/(PH + UH), \text{ or } [400/(200 + 400) = 2/3],$$

of the acres to be covered by MAs could be existing habitat. If PH were large enough so that

$$PP_B \times [PH/(PH + UH)] < 1,$$

HPC transactions would produce a net habitat loss. To avoid that, the ratio of restored habitat to eliminated habitat should be no less than ASH/UH (or 1.25). In other words, when the amount of actual habitat is already too small, habitat elimination must be more than offset by restoration. Again, the eventual outcome of HPC purchases would be ASH = 0. Since habitat elimination would be more than offset by restoration, the policy would be analogous to the U.S. Environmental Protection Agency's (EPA) policy for areas with substandard air quality. EPA requires new polluters to more than offset their impact on air quality.

Using the numbers introduced already, suppose a developer wants to build homes on a 10-acre property. To acquire 10 HPCs, he must pay the market value of a MA for at least 16.67 acres, or

$$10 \times PP_B \times PH/(UH + PH) = (10 \times 5 \times 1/3 = 50/3 \text{ acres},$$

of restored habitat, and MAs for up to the other 33.33 acres, or

$$10 \times PP_B \times [UH/(UH + PH)] = 10 \times 5 \times 2/3 = 100/3 \text{ acres},$$

for existing habitat. The net effect is a 43.33-acre decrease in UH (33.33 protected + 10 eliminated), and a 50-acre decrease in ASH, including 6.67 net new acres of habitat.

What if PH had been equal to 4,000, rather than 400? Then ASH/UH (1.25) is larger than

$$PP_B \times PH/(UH + PH) = 0.263 \times 0.833 = 0.219.$$

The 10-acre development would require a MA for 12.5 restored acres, and a MA for 0.44 acre, or

$$10 \times PP_B \times UH/(UH + PH) = 10 \times 0.263 \times 0.167,$$

of existing habitat. The net effect is a 10.44-acre decrease in UH, and a 12.94-acre decrease in ASH, including 2.5 net new acres of habitat.

Since the species was already endangered, a gradual decrease in the difference between the amount of secure habitat and the safe minimum amount could be an unaffordable luxury. There would be at least three ways to speed up the process. One way would be for the government to pay to quickly restore enough habitat to make up the initial difference between UH and ASH. Then, with UH = ASH, the subsequent demands for habitat elimination could be accommodated with Option B described previously, that is, by paying for an MA for one restored acre per acre eliminated.

A second way for the government to speed up the restoration and deed restriction process (MA sale) would be by offering habitat producers an incentive bonus. This method would be analogous to Bean's (1992) proposal to "jumpstart" a proposed incentive program to protect and restore red-cockaded woodpecker habitat. The bonus would be set high enough to restore the additional desired habitat faster than habitat eliminators' HPC purchases would have done the job. This method should cost less than directly funding restoration, because on top of their incentive bonuses, the habitat producers would receive a partial HPC (missing the MA for the existing habitat share of PP_B) which they could sell per ASH/UH or [PP_B x PH/(PH + UH)] acres restored. Subsequent habitat eliminators could acquire a full HPC by purchasing a partial HPC, plus a MA for PP_B x [UH/(UH + PH)] acres from UH.

A third possibility would be to set the restoration component of PP_B above ASH/UH or [PP_B x PH/(PH + UH)]. That would decrease ASH more quickly if habitat eliminators' demand is strong and price inelastic. That is likely to be the case when PH is very large. If their demand is very price-sensitive (elastic), such a price increase would slow the decrease in ASH.

Brokers' Viewpoint

Impact of Habitat Protection on Property Values

By Ted C. Jones, Brittany A. Burnam, Clinton H. Harrington and Roger J. Pelton

Mature Texas cedar trees are the battleground as both sides debate the value of the golden-cheeked warbler's habitat.

Since its inception, the Endangered Species Act (ESA) has been fiercely and emotionally debated by landowners and environmentalists, with each side emphasizing extreme positions. The full state-wide impact on Texas is not yet known because many species are still under consideration for the endangered designation. For example, battle lines are now forming over the potential listing of the Arkansas River shiner in the Texas Panhandle.

The most direct method to measure ESA impact on Texas real estate markets would be a paired sales comparison approach used in the appraisal process. Such data, however, are limited and only give insight into historical transactions that may or may not contain the most current information.

The Real Estate Center surveyed 6,000 Texas real estate brokers in the fall of 1994 in an attempt to gauge the impact, if any, of the ESA on Texas real estate in the previous decade and in the next five years. Brokers were randomly selected who, at their last license renewal, indicated spending at least 50 percent of their time in some real estate activity.

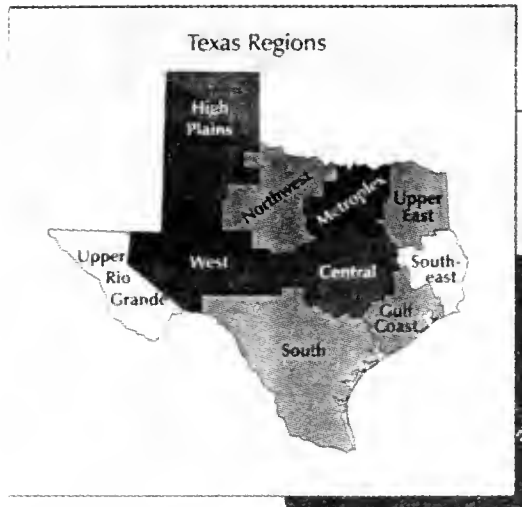
Even in markets with designated habitat, not all property uses would be affected, nor would the impact on properties necessarily be equal. Six property types were analyzed: built-up urban real estate, developed but not-yet-built-on urban land, urban/suburban fringe land, transitional rural land, farmland and rangeland. Because habitat is not uniformly distributed across the state, any impact from the ESA was anticipated not to be equally distributed. The survey included a map on which respondents shaded or colored the market area(s) on which their responses were based (Figure 1).

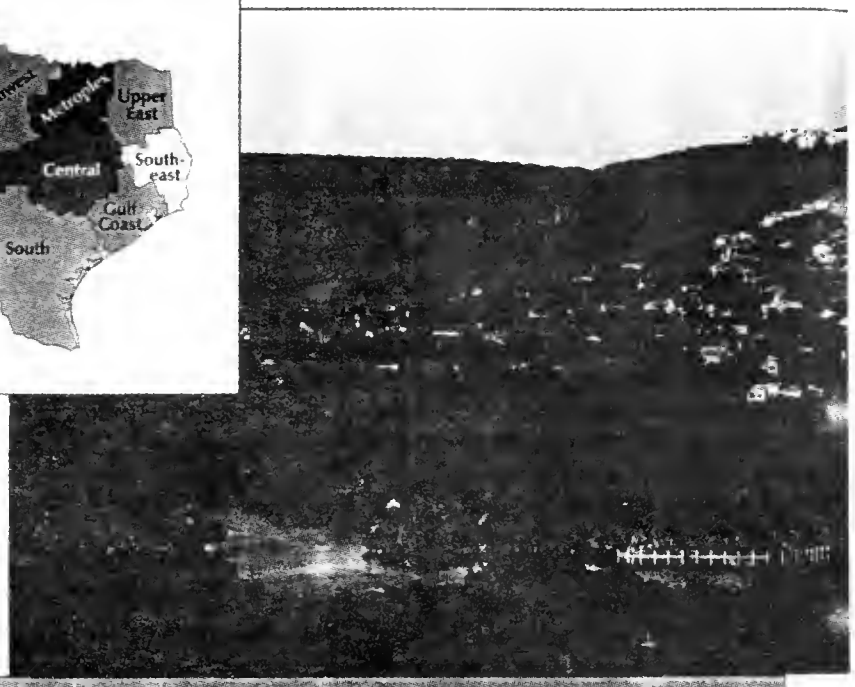
Impact on Total Sales

Risk is defined as uncertainty. To ascertain whether Texas real estate markets had an increased level of risk, respondents were asked if the ESA had changed the number of property sales across the entire market. Almost one-half of the respondents indicated that the impact of the ESA on the number of sales was unknown (Table 1). When these unknown responses are excluded, more than 70 percent of remaining respondents indicated a negative value impact on urban/suburban fringe land, transitional rural land, farmland and rangeland.

The two property types with greatest risk (buying and then not being able to develop) are urban/suburban fringe land and transitional rural land. For these higher-risk properties, most respondents indicated that the number of sales had declined as a result of the ESA. The level of uncertainty within the brokers, however, can not be overstated.

In the framework of modern finance, **the conclusion is that significant risk has been added to Texas real estate markets by the ESA.** In a





risk-return decision framework, the added risk can be compensated by an associated return that should be measurable in declining land values, or (as in the two higher-risk properties) reduced liquidity, or both.

Aggregate responses to changes in value, if any, in the past decade caused by the ESA in property having or suspected of having habitat for endangered species are listed in Table 2. If respondents indicated either positive or negative change in the first response, they were asked how much the property value had changed, on average, as a result of the ESA. Again, the majority of respondents indicated that values declined for urban-suburban fringe land and transitional rural land, with median declines of 20 and 25 percent and average declines in value of 29 and 28.6 percent, respectively. Following closely were drops in value for farmland (23.2 percent) and rangeland (24.3 percent). Average and median property value change estimates are listed at the bottom of Table 2, as is a 95 percent confidence interval of median property value declines.

Table 1. Effect of the Endangered Species Act on the Number of Texas Real Estate Sales

	Increase Sales	No Change	Decrease Sales	Impact Unknown
	Response Percentage			
Built-up urban real estate	2.9	39.1	12.9	45.1
Developed but not-yet-built-on urban land	3.0	24.2	30.9	41.9
Urban/suburban fringe land	1.0	14.7	43.1	41.2
Transitional rural land	0.9	11.4	44.8	43.0
Farmland	0.6	15.0	33.2	51.2
Rangeland	0.9	12.3	35.5	51.4

Source: Real Estate Center at Texas A&M University

In the opinion of Texas brokers, the ESA has resulted in value declines ranging from one-fifth to one-fourth in all types of property other than built-up urban real estate. Given the large number of relatively consistent responses, the confidence intervals are moderately narrow and negative in all but the upper limit on built-up urban real estate.

The serenity of this scene on Lake Austin belies the tension created by the land-use debate.

Table 2. Effect of the Endangered Species Act on Texas Real Estate in the Past Decade

	Positive Value Impact	No Impact	Negative Value Impact	Impact Unknown
	Response Percentage			
Built-up urban real estate	5.7	44.5	17.9	31.8
Developed but not-yet-built-on urban land	4.7	25.5	38.8	30.9
Urban/suburban fringe land	2.8	13.5	54.1	29.6
Transitional rural land	3.4	9.5	56.7	30.5
Farmland	2.9	13.8	45.7	37.6
Rangeland	3.2	11.5	46.8	38.4

Response Percentage on Value Change resulting from the ESA

	Increase	Decrease	No Change
	Response Percentage		
Built-up urban real estate	20.1	51.8	28.1
Developed but not-yet-built-on urban land	9.6	79.7	10.6
Urban/suburban fringe land	5.0	90.6	4.4
Transitional rural land	4.5	92.9	2.6
Farmland	4.1	90.4	5.5
Rangeland	3.7	91.6	4.7

Estimated Value Change (Percent)

		95 Percent Confidence Interval		
	Average	Lower Limit	Median	Upper Limit
Built-up urban real estate	-9.6	-7.0	-3.0	0
Developed but not-yet-built-on urban land	-23.1	-20.0	-20.0	-20.0
Urban/suburban fringe land	-29.0	-25.0	-20.0	-20.0
Transitional rural land	-28.6	-25.0	-25.0	-20.0
Farmland	-23.2	-20.0	-20.0	-15.0
Rangeland	-24.3	-20.0	-20.0	-17.0

Source: Real Estate Center at Texas A&M University

Travis County Data Support Survey

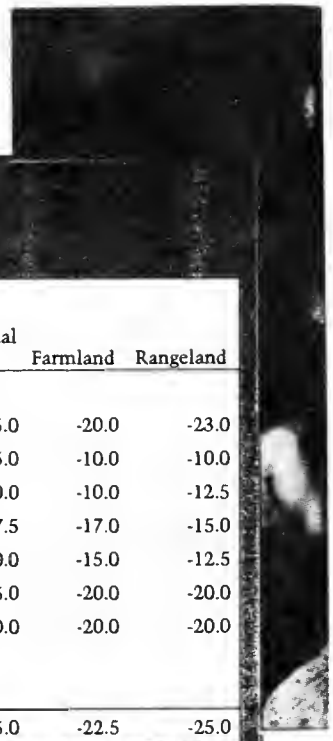
Regional analysis of the brokers' opinions indicated that the greatest value decline of transitional/suburban fringe land occurred in Central Texas with an estimated 40 percent drop in value (top half, Table 3). Separate from this survey are data collected and analyzed by Charles E. Gilliland, associate research economist at the Center.

Gilliland's results coincide with the brokers' opinions. Gilliland's results are based on adjustments made by the Travis County Central Appraisal District to the assessed values of 727 properties. The landowners furnished evidence of endangered or threatened species' habitat to the Central Appraisal District.

The adjusted properties were predominantly urban/suburban fringe land, for which the Central Appraisal District reduced assessed values by 40 percent. The total reduced assessed value was $50 million, or an average of $68,775 per property. This separate approach, which used Travis County data and yielded identical results, supports the credibility of broker opinions.

Future Declines Anticipated

When the Texas brokers were queried about the impact of the ESA in the next five years, they



Texas has designated some 69 species as endangered or threatened (as of November 1994). A jaguarundi, protected under the ESA, peers warily at the world.

Table 3: Property Value Change
Estimated Median (percent)
Past Decade

	Built-up Urban	Developed but Not-Yet-Built-on Urban	Urban/ Suburban Fringe	Transitional Rural	Farmland	Rangeland
High Plains						
Northwest		-25.0	-35.0	-25.0	-20.0	-23.0
Metroplex	-3.0	-11.0	-18.5	-15.0	-10.0	-10.0
Upper East	-1.5	-20.0	-17.5	-20.0	-10.0	-12.5
Southeast	-12.5	-20.0	-20.0	-17.5	-17.0	-15.0
Gulf Coast	0.0	-12.5	-20.0	-20.0	-15.0	-12.5
South	-5.0	-20.0	-25.0	-25.0	-20.0	-20.0
Central	0.0	-25.0	-40.0	-30.0	-20.0	-20.0
Upper Rio Grande						
West						
Texas	-20.0	-25.0	-25.0	-25.0	-22.5	-25.0

Next Five Years

	Built-up Urban	Developed but Not-Yet-Built-on Urban	Urban/ Suburban Fringe	Transitional Rural	Farmland	Rangeland
High Plains						
Northwest		-17.5	-30.0	-30.0	-17.5	-27.5
Metroplex	-1.5	-12.0	-15.0	-20.0	-15.0	-20.0
Upper East	-5.0	-15.0	-17.5	-15.0	-15.0	-10.0
Southeast	-5.0	-13.5	-20.0	-17.5	-15.0	-12.5
Gulf Coast	0.0	-10.0	-20.0	-20.0	-17.5	-15.0
South	-10.0	-20.0	-20.0	-20.0	-15.0	-20.0
Central	0.0	-15.0	-25.0	-25.0	-20.0	-20.0
Upper Rio Grande						
West						
Texas	-12.5	-20.0	-25.0	-25.0	-20.0	-25.0

Note: Missing data had too few observations for [illegible]
Source: Real Estate Center at Texas A&M University

estimated a further 20 percent decline in all but urban properties. In every instance, the confidence intervals imply declining values for all property types (Table 4). Regionalized breakdowns as projected for the next five years are in Table 3.

Uncertainties and restrictions established by the ESA are creating greater risk in Texas real estate markets, particularly for parcels that, while poised for a change in highest and best use, may be unchangeable. Opinion summaries of Texas real estate brokers indicate that this higher level of risk is being compensated by reduced property values and reduced liquidity in an already relatively illiquid commodity.

Estimated median value declines in the past decade resulting from property being or suspected of being endangered species habitat ranged from -20 to -25 percent for all types of property other than built-up urban real estate. Confidence intervals of estimated median value declines based on a 95 percent level ranged from -15 to -25 percent. Corresponding estimated average price declines for those same nonurban parcels ranged from -23.2 to -29 percent.

Safety Net

Endangered Species Act

The federal Endangered Species Act (ESA) was originally enacted in 1973 and has been reauthorized five times. Among other things, it provides a mechanism to protect the habitat of plants and animals that are classified as endangered or threatened with extinction.

Individual violators of the ESA are subject to a $100,000 fine and one year in a federal prison. Organizations caught in violation may be fined $200,000. A violation occurs when an individual or organization means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect an endangered species. It is a violation even to attempt such conduct. Property used in violations is subject to forfeiture. Individuals who provide information that leads to a civil penalty or criminal conviction may be eligible for cash awards.

Nationwide, the number of plants and animals designated as endangered or threatened has grown from 109 in 1973 to more than 1,400 today. An additional 3,700 are being considered. Two federal agencies, the U.S. Fish and Wildlife Service and the National Marine Fisheries Service, are responsible for assigning either the endangered or threatened status.

An endangered species is defined as "any species which is in danger of extinction throughout all or a significant portion of its range." Threatened species are those likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." Such designations are to be assigned exclusively on a scientific basis, ignoring both politics and economics. Once such an assignment is made, no development of any parcel that is considered to be habitat of designated plants or animals is allowed without the consent of these federal agencies.

Texas had 69 species designated as either endangered or threatened as of November 1994. Beyond the highly publicized golden cheeked warbler, whooping crane, Houston toad and Rio Grande silvery minnow, others include the Mexican long-nose bat, Louisiana black bear, Mexican spotted owl, brown pelican, San Marcos and Texas blind salamanders and numerous sea turtles. Other animal species include the fountain darter, Tooth Cave ground beetle, Attwater's greater prairie-chicken, Leon Springs pupfish, Concho water snake and the least tern.

Plants represented 27 of the designated Texas species. Examples include the black lace cactus, slender rush pea, star cactus, Texas wild rice, Navasota ladies'-tresses and Texas snowbells. The diversity of plants and animals covers a wide range of the state.

Analysis of reduced property tax assessments of 40 percent on land known to contain habitat for endangered or threatened species in Travis County were identical to the brokers' estimates for the region. Projected property declines for the next five years, while not as great as those for the past ten years, are estimated to be negative.

Time will reveal the extent of aggregate property value impact from the ESA. Texas brokers who are active in the market believe that the impact has been negative and will continue. While a few respondents indicate that property values have risen, the majority either do not know the impact or believe that values have declined. Much more uncertainty exists in Texas markets today–uncertainty attributable to the Endangered Species Act.

Dr. Jones is chief economist, Burnam a graduate research assistant and Harrington and Pelton former graduate research assistants at the Center.

Table 4. Effect of the Endangered Species Act on Texas Real Estate in the Next Five Years

	Positive Value Impact	No Impact	Negative Value Impact	Impact Unknown
	Response Percentage			
Built-up urban real estate	7.8	35.6	24.7	31.8
Developed but not-yet-built-on urban land	6.3	20.0	46.9	26.8
Urban/suburban fringe land	3.8	9.5	61.4	25.4
Transitional rural land	3.4	5.2	65.7	25.7
Farmland	3.3	9.2	55.6	31.9
Rangeland	3.6	7.2	56.3	32.9

Response Percentage on Value Change Resulting from the ESA

	Increase	Decrease	No Change
	Response Percentage		
Built-up urban real estate	28.5	72.7	19.0
Developed but not-yet-built-on urban land	11.6	81.1	7.3
Urban/suburban fringe land	5.6	90.9	3.5
Transitional rural land	4.8	93.9	1.3
Farmland	4.9	92.3	2.9
Rangeland	4.7	92.7	2.6

Estimated Value Change (Percent)

		95 Percent Confidence Interval		
	Average	Lower Limit	Median	Upper Limit
Built-up urban real estate	-10.3	-7.0	-5.0	-5.0
Developed but not-yet-built-on urban land	-20.2	-20.0	-15.0	-12.0
Urban/suburban fringe land	-25.6	-25.0	-20.0	-20.0
Transitional rural land	-27.0	-25.0	-20.0	-20.0
Farmland	-23.7	-20.0	-20.0	-17.0
Rangeland	-25.1	-20.0	-20.0	-20.0

Source: Real Estate Center at Texas A&M University

Intangible Assets
Owners, Assessors Face Off

By Charles E. Gilliland

A new and potentially potent issue is emerging as an arena of confrontation between property taxpayers and assessment officials. The controversy centers on real estate valuation and the intangible personal property exemption.

Specifically, some business owners have realized that a portion of their apparent real estate value may result from intangible assets like goodwill. In Texas, these intangible assets should be excluded from tax assessments. Faced with the prospect of a dwindling tax base and consequently higher tax burdens on the remaining taxpayers, assessment officials have disputed some of these claimed exemptions. Reviewing the concepts of value and the property tax system's exemption provisions sheds light on this controversy.

Property taxes exact a proportion of taxable property value for government each year. At its inception in an agrarian age, values changed slowly, and most property was held as real estate. Personal property included livestock, household furniture, some equipment and valuable personal effects, such as watches. Assessors and property owners paid little attention to noncorporeal property because few intangible assets existed.

As society and the economy evolved, more wealth became invested in nonphysical assets and intangibles assumed greater importance. In addition to the usual tangible items, individuals began to acquire stocks, bonds, bank accounts and other nonphysical properties. However, discovering and listing such wealth was extremely difficult, if not impossible. Furthermore, establishing the market-tested value for many of those items was a nettlesome problem. As a result, much of this kind of taxable property went untaxed. This dilemma led many states, including Texas, to formally exempt intangibles from the annual property tax levy.

Because property tax rates had been relatively low, Texas taxpayers initially took little note of the intangibles exemption. As effective tax rates have risen, however, owners of unique and complex properties have begun to search for ways to limit overall tax liability. Identifying and eliminating taxes on intangible assets may provide a legal and effective method of cutting property taxes. Attempts to identify intangible value promises to emerge as an area of controversy in property taxation for some time to come.

Intangibles in Property Taxation

The Texas *Property Tax Code* defines *intangible personal property* as

> . . . a claim, interest (other than an interest in tangible property), right, or other thing that has value but cannot be seen, felt, weighed, measured, or otherwise perceived by the senses, although its existence may be evidenced by a document. It includes a stock, bond, note or account receivable, franchise, license or permit, demand or time deposit, certificate of deposit, share account, share certificate account, share deposit account, insurance policy, annuity, pension, cause of action, contract, and goodwill.

At first, this catalog of exempted items appears to be clear-cut, but reflection reveals potential gray areas. For example, when an operating business sells, how much of the purchase price results from the physical real estate and how much accrues to "goodwill?" Once the question of business operation becomes an issue, the seemingly clear-cut distinction between intangible assets and real estate and tangible assets blurs.

Consider the example of bare farmland. The founder of a well-known agricultural service was fond of saying that "there is more in the man than there is in the land." This assertion recognizes that a superior farmer achieves exceptional results through management skills. The capitalized value of income from such an individual's farming operation would exceed the market value of tangible assets used in the operation. However, an active market for these assets limits land and equipment values. The "extra" value in the farming enterprise accrues to the farmer. That extra value reflects the skill of the farmer and is an intangible asset. Because a competitive market provides independent evidence of value of the tangible assets, this kind of intangible

asset is rarely the subject of controversy in property taxation.

Complications proliferate when the subject enterprise has a unique characteristic. For example, a franchised hamburger restaurant has exclusive use of the brand name for product plus the advantages conferred by the management system, national advertising campaign, and purchasing power of the franchising organization. Clearly, these advantages confer value on the restaurant enterprise in excess of the value of the building, land and equipment. Basing value on the income stream to such a property risks attributing some of that exempt intangible value to the tangible assets.

Intangibles encompass a wide variety of the business facets that permit recognition of the enterprise as a functioning entity. Prominent among the intangible items are franchises that create an identity for a business and provide instant credibility. Affiliation with a nationally franchised hotel communicates an expected set of goods and services enticing the public to patronize those establishments authorized to use that name to the neglect of locally owned hostelries of equal quality. Payments made by the hotel to the franchiser provide one indicator of the value implied by the franchise; however, the value of the franchise to the enterprise must exceed the discounted value of these payments in all but the marginal hotel. Otherwise, the hotel owner would be indifferent between maintaining the franchise or letting it lapse. Thus, the capitalized value of franchise payments represents a minimum value for that franchise. However, attempting to establish a defensible estimate of the value of the franchise to the operating enterprise leads to complicated and legally unresolved issues in Texas. The picture becomes even more murky when such nebulous items as goodwill, an assembled workforce and other such assets exert a substantive influence on business value.

Accounting concepts provide some guidance in dealing with these difficult issues by classifying intangibles according to their attributes. Accountants differentiate between intangibles that can be *identified* or separated and sold independently from the business and those inextricably joined to the going concern. Franchises, patents, copyrights, licenses and even trademarks have the potential of being separated from the business and sold. In essence, these items have achieved status as a distinct asset.

An assembled workforce, established sources of supply and goodwill, however, are examples of assets that cannot be disposed separately from the business. This kind of asset is *nonidentifiable* and the subject of much dispute in the debate on taxation of intangible assets. In fact, some theorists and property tax administrators dispute the idea that nonidentifiable intangibles deserve recognition as separate assets. They argue that any value generated by those assets is similar to the influence of a spectacular view on land values. It has become an intrinsic part of the operating property and should not be separated. Like the spectacular view, the nonidentifiable intangibles have essentially become part of the real estate. Texas courts have not ruled on these issues.

Adding complexity to this situation, valuation of intangibles is a vexing problem in itself. To the extent that they could be purchased and sold, identifiable assets present the possibility of direct market valuation. However, the character of nonidentifiable assets preclude the possibility of direct market valuation and require allocation of the value of the entire enterprise to its various assets.

Identifiable intangible assets with clearly recognized influences on business income can be valued using traditional cost, sales comparison or income approach techniques. For example, a patent promising to provide measurable returns to a business for a specified period could be sold to another business. An appraiser could estimate the value of that patent by totaling the cost of developing the technology plus legal costs incurred in enforcing the patent less the portion of patent costs already realized.

Cost does not always equal value. Therefore, if similar patents are routinely exchanged in the market, application of the sales comparison approach strongly indicate market value. Such sales are frequently private, however, limiting the information available to appraisers and making sales comparison applications unlikely for estimating the value of intangibles. Finally, the patent's effect on income to the enterprise could be identified and capitalized. Although complicated in the details of application, valuation of identifiable intangible assets can be a straightforward extension of familiar appraisal techniques.

Nonidentifiable intangibles present an entirely different and much more difficult appraisal problem. By definition, these assets have no value apart from the ongoing business. They are inextricably wrapped in going concern value, and valuation must be accomplished indirectly. In essence, the value must be extracted from the business enterprise value. In other words, the enterprise is appraised and values of tangible and identifiable intangible assets are then removed from that unit value. Presumably, the remaining value represents value accruing to nonidentifiable intangible assets. As a practical matter, valuation questions involving intangibles and property taxes probably will involve the income approach to the exclusion of the cost and sales comparison approaches.

Texas property tax laws that dealt with the appraisal of intangibles had conformed to a similar process. For example, before Texas law exempted intangibles of transportation companies, the comptroller appraised those properties by estimating an *intangibles residual value*. The appraisal formula began with an estimate of the market value of the operating property that could be reasonably assigned to Texas. Next, the comptroller obtained an appraisal of the tangible operating properties. The tangible value was then deducted from the business value to leave the residual intangible value.

Although the issues surrounding claims of intangible exemptions have not proceeded through Texas courts, California taxpayers and assessors have fought a series of legal battles over similar provisions in California's tax laws. The experience of California taxpayers indicates that exemption of intangibles may not excuse as much value from taxation as suggested by the statutes. California taxpayers expected to escape taxation of intangible values when the exemption was adopted. However, in 1948 the courts ruled that although the value of a license was exempt from taxation, the assessor could take the effect that the presence of that license had on the value of the real property into account when appraising the real estate.

Through the years, California assessors have sought to access such values for their tax base. These efforts resulted in a number of notable courtroom confrontations including the case of *Service America Corp v. County of San Diego*. The courts ruled that the assessor erred when he included the entire income stream from a firm holding concession rights at a publicly owned stadium. Obviously, the court ruled, the part of the income resulting from exempt intangibles should be excluded from Service America's taxable value. But the court further declared that the exclusive nature of the concession agreement obviously contributed to profitability and that the county could not overlook that fact in estimating a value. The decision gives precious little guidance about how to take the influence of intangibles into account but states that the taxable value should be less than the value derived by capitalizing the entire income stream for Service America. The court admitted that the final valuation would ". . . bear some characteristics of arbitrary selection."

Prominent among intangibles are franchise names that create an identity for a business and provide instant credibility.

In the case of *Shubat v. Sutter County Assessment Appeals Board*, the court had more valuation information to consider. The case involved the allocation of value between intangibles and taxable tangible values of the Nor Cal Cablevision Company. The assessor used a sales comparison approach, having a sale involving the firm in question. After making some adjustments, the assessor allocated amounts to the taxable tangible items and the remaining $16.2 million to a single intangible possessory interest in publicly owned rights of way, which were taxable under California laws.

Nor Cal objected, contending that its subscriber list, franchise operating rights, a lease, assembled workforce, noncompete agreement and going concern value were all nontaxable intangibles that had been ignored by the assessor. Nor Cal's appraiser employed an excess earnings approach to value the intangibles of the company. The net income was allocated among the intangibles using income approach techniques to substantiate the allocation. Nor Cal's resulting estimate of the value of the taxable possessory interest was $4 million.

The board substantially agreed with Nor Cal's analysis but adjusted to arrive at a value for the possessory interest of $6.01 million. The assessor objected and initiated the court action to restore the original value. However, the court found Nor Cal's appraiser and his thorough analysis to be overwhelming valuation evidence and accepted the appeal board's decision.

In the first two California cases, the courts refused to consider all business value irrelevant when setting taxable values. The third case indicates that taxpayers must present a well reasoned case, founded in accepted appraisal methodology, to prevail in a claim of exempted intangible value. The crucial element is the reasonableness of the individual's position and thorough documentation.

Exemption of intangibles raises numerous thorny questions for properties that combine a variety of legal and social functions to provide a product or service. Separating the value of the tangible properties from the value residing in the intangibles requires expert knowledge of both the markets and processes involved. Many issues of the problem remain to be resolved in terms of identifying acceptable and unacceptable methods of deriving a market value for intangibles in a going concern enterprise. Taxpayers should concentrate on sustainable estimates of market value for their real estate and tangible assets if possible. When an appraisal of intangibles becomes necessary, the resolution will depend on the knowledge, experience and abilities of the valuation experts analyzing the problems. ■

Dr. Gilliland is an associate research economist with the Real Estate Center at Texas A&M University.

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An Analysis of the Impact of the Endangered Species Act on Texas Rural Land Values

by

Charles E. Gilliland
Associate Research Economist

July 1995

Table of Contents

Executive Summary

Uncertainty concerning current and prospective land uses affected by the Endangered Species Act (ESA) is an important element of the confrontation between owners and environmental advocates.

- Owners and potential buyers may not know whether particular properties host an endangered specie. Observers report that bureaucratic judgments appear to be inconsistent from one property to another.

- Potential buyers foresee possible bans on current land uses and the likelihood of lengthy delays in obtaining permits plus the possibility of incurring consulting fees and mitigation expenses.

- Exacting mitigation fees in return for issuing permits adds the specter of an unanticipated and incalculable cost to management plans.

- The combination of mitigation fees and regulatory delay may cause large areas of land to become unattractive to buyers.

- In typical markets, these factors often translate into reduced offers and ultimately value losses for owners of affected properties.

Surveyed brokers reflect this uncertainty.

- Most (84 percent) of Texas real estate brokers responding to a survey (1,227 total responses) either indicated no impact or did not know what impact the ESA has had on built-up urban Texas real estate values.

- The consensus among Texas real estate brokers expressing an opinion on value impact on vacant lots, urban fringe land and transitional rural land (40 to 45 percent) points to value declines resulting from ESA.

- Brokers estimated a 40 percent median value decline for urban fringe land in the Texas Hill Country and a 30 percent decline in transitional land values resulting from ESA.

- Median estimated declines for farmland and rangeland values varied from 10 to 20 percent depending on location.

Travis County property tax authorities have estimated value losses on affected properties.

- A total of 897 properties were affected by ESA and other environmental programs in the county in 1994.
- Property value was reduced by 43 percent for all land categories.
- Agricultural land values were reduced by 22 percent.
- Transitional land values were reduced by 51 percent.
- Vacant platted lots were reduced by 45 percent.

Aggregated sales data indications were inconclusive, although regional medians increased in affected areas.

- Travis County and Williamson County area values increased 15 percent from 1992 to 1994, but sales volume declined by 21 percent, possibly indicating that buyers were avoiding potential habitat properties.
- The Edwards Plateau - South area saw prices climb by 41 percent from 1992 to 1994. This remarkable increase appears to indicate the presence of numbers of speculative buyers anticipating that current problems will be resolved and values will increase. This kind of price support could evaporate as rapidly as it appeared.
- In the heavily timbered North - East area, land values declined 9 percent from 1992 to 1994 despite strong timber prices. Sales volume dropped 17 percent during that period. These statistics are consistent with the potential ESA impact associated with the red-cockaded woodpecker, however other influences may have affected the market.

The Balcones Canyonlands Conservation Plan (BCCP) proposes to accommodate development in affected areas by easing permit availability in return for fees imposed on landowners.

- The April 19, 1995, version of this proposed plan includes a $5,500-per-acre fee to mitigate incidental taking of acreage when developing land with golden-cheeked warbler or black-capped vireo habitat.
- Additionally, vacant platted lots would incur a fee of $1,500 before a home could be built.

- Although routine farming and ranching practices would be exempted, those farm and ranch management activities requiring clearing would incur a $1,500 mitigation fee for each acre cleared.

- Furthermore, the fees approximate an assumed average land cost of $5,500 per acre. If land prices rise, the fees could also increase.

- Because of regulatory lag and time-related capital costs, owners of undeveloped acreage would likely see the market value of their property fall by more than the amount of the fee, when the time value of money is considered.

Available market-derived evidence of the effect of ESA on land prices is sketchy, precluding an outright conclusion about the value-related effects of ESA. Nevertheless, information gleaned from examining the ESA controversy in Central Texas does indicate a cause for lender concern. For example, market observers in the Travis County area indicate a likelihood that a substantial acreage has already been adversely affected by ESA. Therefore, lenders appear to have a justified concern about the impact of this act on their collateral base.

Analysis of Travis County assessments indicate that the most heavily affected properties, in dollar terms, are likely to be urban fringe properties and vacant lots. The degree of risk associated with investment in those properties has unquestionably increased, and lending policies may need to reflect that fact. However, the reduction registered on purely agricultural properties indicates a sizable decline as well, especially if the effect were to persist over a broad expanse of territory.

Statement of the Problem

Lenders provide funds for purchase of land, homes and businesses. In return, borrowers have pledged their holdings as collateral for these outstanding loans. Collateral value is a critical element in the lending process, providing security for capital advanced in purchase money loans. Actions that threaten the integrity of the value of pledged collateral also threaten the capital solvency of lenders' investment portfolios. Restrictions on land usage that threaten the value of borrowers' land could represent a substantial increase in risk for the capital position of those lenders. Some lenders have expressed concern about the significance of this potential threat.

This study examines the issue of value loss associated with implementation of environmental restrictions on land management procedures. The study addresses this issue in two specific dimensions as follows:

1. Identification of conditions that threaten value reductions on affected properties

2. Analysis of market indicators suggesting value losses associated with specific environmental regulations.

General Comments

The potential effects of environmental regulation on the market value of affected properties has caused concern for lenders. Highly publicized incidents, such as the Lucas case,[1] demonstrated the potential for complete value loss for properties adversely affected by governmental regulations. Because of regulations resulting from the ESA and Clean Water Act, Section 404, the wetlands protection provision can impose severe limits on management practices relative to affected or potentially affected properties. Some lenders see inventories of loans on such properties as vulnerable securities that face the possibility of sizable losses. Concerns center on expected declines in value resulting from current and potential restrictions. In fact, some agricultural lenders fear that collateral base value declines have already occurred in specific affected areas of Texas.

For example, landowners in the western reaches of Travis and Williamson counties have seen restrictions applied to properties providing critical habitat for the endangered golden cheeked warbler. Similarly, landowners in the Edwards Aquifer region of southern Texas have seen access to underground water substantially altered in response to competing demands for the waters of the aquifer. The difficulties initially surfaced as a struggle between agricultural users and urban users. Now the ESA has become the focus of the controversy as environmental groups filed suit to block any water usage that threatens to deplete the flow supporting endangered aquatic life in Comal Springs.

Because of these environmental concerns, landowners in these areas have been prohibited from pursuing formerly noncontroversial land management regimens without obtaining a permit from the U.S. Fish and Wildlife Service (USFW). Owners in the warbler habitat area can no

longer dispose of unwanted cedar, or develop property where such cedar exists, without USFW approval. Edwards Aquifer landowners can no longer develop untapped underground water. Furthermore, owners of existing wells face possible limits on water usage as the Texas water laws have moved from the traditional capture doctrine toward a regulated adjudication system.

Variations of this kind of controversy have raged in selected areas as endangered organisms have been identified. In many cases, landowners and lenders have anticipated lower values that reflect restricted potential uses and an intensified degree of uncertainty. Theorists argue that restrictions inevitably lead to a lower value for affected properties when they are compared with comparable unaffected properties.[2] Some environmentalists initially acceded to that proposition as Samuel Hamilton of USFW declared, "The incentives are all wrong here. If I have a rare metal on my property, its value goes up. But if a rare bird occupies the land its value disappears".[3] Later, Hamilton implied that environmental regulations actually may have enhanced land values.[4] This dispute about the effect of environmental regulation involves market-determining influences at the most fundamental level and has prompted the emergence of the property rights movement.

Property Rights, Highest and Best Use and Market Value

A strong property rights system within a well-functioning free market creates powerful incentives for owners to manage their resources so as to maximize the market value of their property.[5] Free market forces lead owners to enhance market value by increasing the potential long-term contribution of their resources to the ends envisioned by prospective purchasers. These contributions derive from both the production of commodity-based and amenity-based benefit flows. Because owners can gain the fruits of wise management under a strong property rights system, rational individuals administer their property to maximize current returns and to preserve future marketability.[6] These tendencies provide the foundation for the principle of highest and best use, which serves as the most elementary standard of real estate valuation.

Market value derives from the array of current and potential uses open to property owners. The developer purchases a pasture with the vision of a completed subdivision populated by families demanding new homes. The rancher acquires a pasture to provide forage for the herd that he or she envisions grazing contentedly in the afternoon sun. The fugitive from urban

pressures sees a quiet retreat away from the city with a multitude of recreational possibilities and perhaps an investment gain. A dispassionate investor views an asset that promises not only to preserve his or her capital but also may return breath-taking gains.

To achieve ownership, the buyer must outbid all competing potential users of the land. The owners with the most valuable uses set the price for land. Individuals are handed the reins and allowed to guide their dreams into reality, secure in the knowledge that society, through its property rights system, will ultimately judge the results by conferring vast gains or inflicting punishing losses when the property is transferred. By mixing capital with land and entrepreneurship, the prevailing owner may increase personal wealth and leave purchasers of this improved land better off than before. This property owner either will be enriched for wise stewardship or punished for foolish management practices.

Summarizing these possibilities, market value derives from the importance that potential users attach to their visions of effective management. For the market to efficiently guide users to fulfill socially desirable goals, potential owners' expectations of management plans must be secured by a reliable degree of certainty. If the outcome and rewards of prudent land management and development remain in question, owners and potential owners have little motive to press forward with improvements. By securing rewards for prudent management to owners, property rights communicate societal expectations and social values to both owners and potential owners through market prices. Threatening the security of property owners' rights to future benefits reduces the value that owners place on their vision for property use and, consequently, reduces effective management effort.

To illustrate how uncertainty affects behavior, a hypothetical program designed to provide benefits for indigent persons provides an example. The program seeks to ensure quality transportation for indigent persons by requiring owners of new automobiles to provide rides for homeless, unemployed persons at no cost. Compared to the unemployed indigents, the car buyers are wealthy and can afford to give a lift to a less fortunate individual. This seems just and desirable, but such a policy would discourage new car purchases by making ownership less desirable, especially if used cars were exempted.

This policy imparts an underlying societal judgment that rights to a new automobile ought not to be exclusively assigned to those who can and do buy the cars. Rather, it implies that the disenfranchised should share in the wealth that society has bestowed on the owner and that this policy quickly redresses the inequalities fostered by a market-oriented system. Implicitly, the policy suggests that purchase of a new automobile is somehow less "valuable" than driving that old one. In the end, this policy would reduce the attraction of new car ownership, along with the quality of total private transportation available to the economy. Changing potential owners' expectations regarding future enjoyment of the object of their property rights in this manner would produce far reaching economic effects.

Property owners in the path of ESA enforcement efforts feel as though they face a similar situation. The same lesson is communicated to the East Texas landowner when neighbors find timber companies not interested in their marketable stumpage because red-cockaded woodpeckers have taken up residence. What long-term message do owners of rugged Hill Country properties receive when neighbors are prohibited from altering their acreage because their land "may" be habitat for an endangered songbird? Furthermore, what impact has imposition of a development fee to "mitigate" habitat destruction had on future investment? Potential investors, those who have consistently provided products that are eagerly purchased by the public, see each of these actions as moves that threaten to diminish or extinguish the reward for risk-taking required to bring desired assets to the market.

Those pursuing the salvation of the environment view land-use decisions from the perspective of a nonmarket participant. They believe landowners are likely to use land in a manner that will harm or destroy critical habitat for endangered creatures. Landowners also may seek to drain swamps, fill lakes or attack the public welfare in numerous ways. From this vantage point, these kinds of activity are so harmful that owners must be compelled, under the threat of imprisonment and fine, to refrain from such activities. Like raising marijuana, habitat destruction is viewed as an attack on society's values and the government must apply police power to forbid possible perverse activities. From this viewpoint, the market appears to have failed to produce the socially desired ends and an invasive solution is needed to correct this deficiency.

These two vastly different views of ESA and similar environmental regulations lead to differing views of the impact on value resulting from regulation. Property rights advocates see the regulations as poisonous intrusions in a well-functioning market. Environmental advocates regard the regulations as belated steps taken to protect the health of a beleaguered planet. From these two conceptions, two opposite judgments of impacts on property value arise.

Anticipated Value Effects

As demonstrated above, environmental regulations affect property values by altering the perceptions of typical market participants concerning the expected benefits of land ownership. Suggestions that value has been enhanced conflict with assertions that values have declined in the wake of regulations imposed by the ESA. Both possibilities deserve to be examined.

Value Enhancement

ESA regulation could enhance the value of specific properties in two dimensions. First, nonaffected property values could rise because of decreased competition from properties identified as ESA habitat. Second, values of affected properties could rise if critical habitat designation makes properties more desirable to potential land buyers. These suggested market developments are mutually exclusive as the following discussion makes clear.

The first case for value enhancement relies on the simple laws of supply and demand. For a given level of demand for property, a marketable supply fixes the price. In the case of land, the effective supply depends both on the physical quantity of land available and the portion of the total that owners offer for sale.

For example, the amount of land within an hour's drive of Austin is fixed by the geographic features of the region and the infrastructure available for the journey. Each acre is potentially in the supply of developable properties and competes with all other acres having comparable potential. In a normal market period, a proportion of that land will be offered for sale. ESA regulation will result in a quantity of that acreage being removed from the total supply of land available for that market because it will no longer be available for development. For a constant level of demand, a reduction in supply will produce an increase in price.

The reduced supply scenario produces windfalls for non-habitat property owners, but property containing habitat would likely decline in market appeal as a result of its presumably reduced utility. For prices to rise across the entire market, values for these nondevelopable tracts also must increase. ESA sharply curtails any activity in areas with habitat; even grazing and fence building could be limited. Thus, the land would appeal to fewer buyers as potential investors and agricultural producers would find the acreage less desirable.

To engender a price rise for affected properties, ESA restrictions must appeal to a pool of potential buyers that gains satisfaction from owning habitat properties. Such purchasers likely would be committed environmentalists who draw satisfaction from the understanding that surrounding properties with habitat also would remain undisturbed. To offset potentially reduced demand inspired by ESA restrictions, these buyers would be needed in sufficient numbers to offset defections by potential buyers who were discouraged by ESA.

If this two-pronged rising market were to develop, market participants would note an increased presence of the new buyer and push by developers to acquire non-affected acreage. Furthermore, in aggregated statistics, overall prices should rise with sales volume remaining steady or increasing.

Value Diminution

ESA regulations reduce the appeal of affected properties for many potential users. By prohibiting the "taking" of endangered species and defining "take" to broadly include nearly all contemplated activities on the land, ESA severely influences land-use decisions.[7] Cattle raisers are prohibited from making improvements that will enhance their profit. Developers are enjoined from realizing the vision of a new community rising from the soil, or they are faced with increased costs due to mitigation fees that result in a competitive disadvantage and increase the overall risk of their project.

Supporters of ESA point out that "more than 99 percent of all projects do go forward," after USFW offered "reasonable and prudent alternatives" to allow projects to proceed *(Facts About the Endangered Species Act)*. However, this document, distributed by the Department of the Interior but not listing an author or publisher, does not address another troublesome aspect of

the ESA process. The phenomenon of regulatory lag and the attendant capital costs incurred as owners await official action are completely ignored by this unidentified document. Furthermore, costs of surveys and consulting fees paid by landowners are not mentioned as important factors. Property owners judged to have ESA habitat will also likely be required to pay mitigation fees or acquire habitat to be set aside to replace habitat that is destroyed by their management plans. These items add to the expense of operating a successful property even, when the envisioned development is a simple fence.

Furthermore, the time required to obtain permission for particular management activities is unknown, and observers have suggested that decisions handed down by USFW appear to be inconsistent from one property to another.[8] Regulatory lag, coupled with inconsistent patterns of judgment, creates considerable uncertainty, expanding the risk of owning and managing land. Investors could perceive a greater level of risk associated with land ownership for all kinds of land. These negative factors discourage potential buyers and thereby decrease demand for land.

When pools of potential bidders abandon the market, demand pressures ease and prices tend to soften. Those buyers who are committed to purchase continue to buy, but new entrants hesitate, waiting for resolution of this uncertain state. Reduced competition on the demand side, with a constant level of supply on the seller's side, leads to reduced prices and a falling level of activity. At first, prices tend to hold or even increase while volume drops. The market is faltering and the marginal trades fail, while transactions on quality properties move to completion. The bottom of the distribution vanishes, and the median or average price moves up. Later, marketwide weakness reduces median prices. The falling price scenario conforms to this kind of market dynamic.

Indications of Value Impact

Evidence of the impact of value transforming events emerges in a market after the event. Individual decisions of market participants proceed under a cloud of uncertainty surrounding the event. Outcomes of those decisions merge in the flow of commerce and reflect myriad potential value-altering influences. Only the passage of time provides an accumulation of evidence to measure the effect of the shock to the market system.

Analysis of sales of comparable properties provides a revealed market valuation of the influence in question. The ideal measure of the impact of ESA could be reached by analyzing sales of properties subject to restriction against properties free of the restrictions over a sufficiently long period. Multivariate analysis could confirm the existence of an effect and even provide a measure of its magnitude. Unfortunately, no pool of data with sufficiently detailed information about property characteristics could be located within the time frame of this study. Therefore, it was necessary to seek secondary indicators of value influences.

Brokers' Opinions

Opinions of informed market participants and observers provide an initial clue to market trends when a potentially market-altering event shocks an area. The Real Estate Center at Texas A&M University conducted a survey of 6,000 real estate brokers who were chosen at random from a pool of agents who devote more than 50 percent of their time to some real estate activity. This state-wide survey included areas affected by the listing of the golden-cheeked warbler and red-cockaded woodpecker as well as 67 other endangered species listed in Texas and produced 1,227 usable responses.[9] Respondents were asked to provide their opinions regarding the effect of ESA on land values of affected properties. The survey allowed respondents to indicate whether ESA effects had increased property values, left them unchanged, decreased them or remained unknown. Furthermore, respondents were asked to indicate the percentage change that had occurred, during the past ten years, in volume of sales and property values directly associated with ESA. Finally, they were asked to forecast ESA price-related impact expected in the next five years.

State-wide results indicate that brokers are split on their judgment of the ESA's effect on sales volume. Most respondents (84 percent) either indicated no change or unknown for the effect on built-up urban real estate. However, sizable minorities (40 to 45 percent) indicated a perceived dip in volume as a result of the ESA during the past five years for developed vacant land, urban fringe land and transitional rural land. Few respondents had observed increases in sales volume (0.6 to 3.0 percent). These results lead to the conclusion that, as a group, brokers appear to be largely uncertain about the effect of the ESA on sales volume. However, sizable minorities have discerned declines in value associated with ESA. Furthermore, those minorities are located in areas where the act has attracted the greatest attention, leading to the conclusion that the effect is uneven across Texas.

Most of the value loss indicated in the survey concentrated on the urban fringe and transitional land groups. The largest median value change estimates for these groups centered in the Texas Hill Country (40 percent overall decline for urban fringe and 30 percent decline for transitional lands) and the northeast corner of Texas (35 percent for urban fringe). These areas are noteworthy as areas with habitat for the golden-cheeked warbler and red-cockaded woodpecker, respectively. Additionally, panelists indicated estimated declines ranging between 10 and 20 percent for farmland and rangeland statewide. Finally, respondents forecast state-wide median declines (12.5 to 25 percent) in value for affected properties during the next five years.

The report concludes:

> Time will reveal the extent of aggregate property value impact from the ESA. Texas brokers who are active in the market believe that the impact has been negative and will continue. While a few respondents indicate that property values have risen, the majority either do not know the impact or believe that values have declined.[10]

Although this reported evidence does not demonstrate a verifiable effect associated with ESA, it does indicate that a consensus among brokers foresees values falling because of the act.

Property Tax Evaluation Adjustments

Property value serves as the primary index of local taxation in Texas, and landowners typically seek to keep the assessed values of their properties at the lowest possible level.

Although many tax bills for agricultural land are based on productivity values in agricultural use rather than the taxable market value, even owners of land taxed on agricultural use values have an incentive to keep market value estimates for these properties low to limit the potential rollback tax.[11] For much of the land impacted by ESA, agreements between assessment authorities and the landowners are the first point where negotiated valuation adjustments appear.

In 1994 owners requested valuation reductions for properties affected by a variety of endangered species including: golden-cheeked warbler, cave invertebrates, the black-capped vireo, miscellaneous other restrictions and the restrictions associated with the "Save Our Springs" program. According to the Travis County Central Appraisal District (CAD), 1994 adjustments were applied to 897 properties totaling a 43 percent reduction from the initial market values. By this estimate, these environmental restrictions resulted in a $74 million reduction in taxable market value as shown in the following table.[12]

Effects of Endangered Species Habitat on Travis County Taxable Market Land Values

Code	Unadjusted Value	Adjusted Value	Percent Effect	Number Affected
Endangered Species (ES)	$ 51,662,265	$ 16,653,511	-68%	57
Golden Cheeked Warbler (G1)	18,026,335	13,131,770	-27	161
Black Capped Vireo (G2)	50,921	35,067	-31	2
Cave Invertebrates (G3)	9,493,238	7,786,787	-18	41
Combination of Species (G4)	31,339,816	24,463,145	-22	211
Construction Restraints: Warbler (G5)	13,663,299	12,793,943	-6	245
Critical Water (G6)	1,925,771	1,298,133	-33	10
Save Our Springs (SO)	47,572,564	23,515,570	-51	170
Totals	**$ 173,734,208**	**$ 99,677,926**	**-43%**	**897**

Source: Travis County Appraisal District 1994 Tax Rolls

Effects of Endangered Species Act on Taxable Market Values
For Affected Properties in Travis County Texas - 1994

Property Type	Unadjusted Value	Adjusted Value	Percent Reduction	Number Affected
Agricultural - Receiving Open-space Valuation	$ 23,927,640	$ 18,712,983	-22%	85
Agricultural - Not Receiving Open-space Valuation	97,104,642	48,039,505	-51	197
Residential - Both SFR and MF	5,230,450	4,811,918	-8	54
Vacant Platted Lots	39,213,797	21,617,734	-45	540
Other Properties	8,257,679	6,495,787	-21	21
Totals	$ 173,734,208	$ 99,677,927	-43%	897

Note: Properties needing surveys not included in these totals

Source: Travis County Appraisal District 1994 Tax Rolls

This information closely approximates the overall decline estimated by respondents to the Jones survey. The overall decline of 43 percent is a weighted average decline with actual individual changes ranging from zero to as much as 74 percent of value. No increases were imposed because of ESA. The data also conform to judgments registered in the Jones survey specifically showing the most pronounced declines in agricultural land that is not receiving productivity valuation treatment (probably transitional and urban fringe lands) and vacant platted lots with 51 and 45 percent declines, respectively.

These adjustments reflect the assessment authority's best estimate of the value effects following from ESA habitat designation. Tax values are frequently dismissed as indicators of market value for specific properties because they are based on mass appraisal techniques. This may lead to contentions that the tax valuations do not provide compelling evidence regarding ESA impact. However, the Comptroller's Office Property Tax Division indicates that the Travis County CAD appraises properties at 99 percent of market value overall, with a coefficient of dispersion of 10.99. This indicates an acceptable level of accuracy in appraisal, especially when compared with a state-wide coefficient of dispersion of 14.17. On vacant platted lots and rural real estate, Travis CAD appraised at 100 percent of market value in 1994 with coefficients of dispersion of 17.05 and 16.39, respectively, compared to statewide coefficients of 19.68 and 18.61.[13]

This official state study of appraisal records indicates that Travis County appraised values tend to approach market value, on average, and that those appraisals have an acceptable level of accuracy that exceeds others in the remainder of the state. Thus, the Travis County CAD staff has demonstrated a high degree of knowledge and skill in estimating property values for taxation. While this evidence does not conclusively demonstrate a substantive negative impact from ESA, it does contribute to the mounting numbers of informed real estate market participants anticipating value declines for some properties in the wake of ESA designations.

Land Value Studies Information

Analysis of land price data maintained by the Real Estate Center[14] could provide information in either of the two dimensions expected to reveal ESA's impact on value. Specifically, the data could evidence land value impact if either unexplained sales volume or price changes occurred while ESA was an issue in land markets. However, information in rural land sales studies conducted by the Center neither conclusively confirms nor denies ESA effects.

Land prices in the most likely affected areas (Austin, Waco and the Edwards Plateau-South) increased from 1992 to 1994, but the sales volume may have decreased in the Austin-Waco areas. The price increases appear to contradict foreseen negative effects. However, the expected negative effects may have occurred on affected properties with the declines being swamped in market-wide data where disproportionate numbers of unaffected properties sold.

Although the recorded price increases do not confirm expected price declines, neither do they effectively refute the forecast of substantial negative effects for ESA. The anticipated negative effect simply may not have appeared as a market-wide, price depressing influence for a variety of possible reasons. First, observers indicate that the most visible influence arising from ESA on affected properties appears as buyer avoidance. If buyers are indeed shying away from properties that they deem at risk for curtailed use, transactions moving through the market would contain fewer sales of affected properties. Furthermore, strong demand for land in areas that contain affected properties would be concentrated on fewer remaining unaffected acres, driving

Trends in Texas Rural Land Prices 1992-94

Land Market	Median Price ($/ac)			Trend Analysis Percentage Change			Volume of Sales Analysis Number of Sales[b]			Percentage Change		
Area	1992	1993	1994[a]	1992-93	1992-94	1993-94	1992	1993	1994[a]	1992-93	1992-94	1993-94
1	375	350	402	-7	7	15	73	57	61	-22	-16	7
2	350	326	323	-7	-8	-1	107	90	150	-16	40	67
3	435	430	441	-1	1	3	106	127	132	20	25	4
4	350	400	375	14	7	-6	127	127	132	0	4	4
5	180	179	211	-1	17	18	NA	NA	NA	NA	NA	NA
6	217	209	246	-4	13	18	118	132	116	12	-2	-12
7	350	350	350	0	0	0	186	131	128	-30	-31	-2
8	60	53	95	-12	58	79	NA	NA	NA	NA	NA	NA
9	270	250	300	-7	11*	20	120	113	104	-6	-13	-8
10	513	575	723	12	41**	26	161	155	176	-4	9	14
11	335	388	400	16*	19**	3	56	101	71	80	27	-30
12	381	379	403	-1	6	6	196	197	205	1	5	4
13	428	450	502	5	17*	12	104	105	144	1	38	37
14	500	497	548	-1	10	10	167	128	178	-23	7	39
15	565	439	446	-22*	-21	2	51	63	33	24	-35	-48
16	800	846	1,000	6	25**	18	99	111	105	12	6	-5
17	1,077	1,330	1,329	23	23	0	NA	37	NA	NA	NA	NA
18	762	800	978	5	28	22*	138	172	211	25	53	23
19	909	860	850	-5	-6	-1	222	256	162	15	-27	-37
20	683	616	664	-10	-3	8	154	148	152	-4	-1	3
21	700	686	750	-2	7	9	131	137	164	5	25	20
22	704	680	738	-3	5	9	199	211	198	6	-1	-6
23	959	1,229	1,250	28**	30**	2	106	91	113	-14	7	24
24	907	1,000	1,071	10	18**	7	137	85	110	-38	-20	29
25	695	712	750	2	8**	5	243	259	216	7	-11	-17
26	892	966	1,028	8	15**	6	183	231	144	26	-21	-38
27	1,069	1,000	989	-6	-7*	-1	251	205	241	-18	-4	18
28	1,302	1,175	1,000	-10	-23*	-15	90	120	148	33	64	23
29	630	550	575	-13	-9*	5	219	222	181	1	-17	-18
30	800	777	838	-3	5	8	153	134	150	-12	-2	12
31	748	870	875	16	17	1	32	40	47	25	47	18
32	1,091	1,029	1,500	-6	37*	46*	84	77	47	-8	-44	-39
33	3,950	3,000	NR[c]	-24	NA	NA	NA	NA	NR[c]	NA	NA	NA
State	645	625	656	-3	2**	5**	4,087	4,114	4,085	1	0	-1

[a]Preliminary

[b]NA signifies fewer than 30 sales

[c]NR Signifies no sales reported

* Signifies statistical significance at the 5 percent level

** Signifies statistical significance at the 1 percent level or less

Source: Real Estate Center
Texas A&M University

up prices for those tracts. Second, buyers might anticipate that the markets will overreact to any stigma associated with environmental conditions. Such buyers would purchase, believing that future prices for such lands are likely to be much higher than today's prices after the public and the markets have adjusted to restrictions. Finally, buyers may not have been fully informed of the effects of ESA during this period.

Inspecting the total numbers of sales for land market areas (LMAs) 10, 25 and 26 indicate a steady volume in LMA 10, the Edwards Plateau-South (see Appendix for a map of LMAs). Observers in that market suggest that some current buyers are indeed speculating that the raging controversy over water rights in the area will provide them with a legally proven and possibly marketable water right. Given that potential motivation, a steady or even rising sales volume could be expected.

However, sales volume in LMAs 25 and 26, Waco and Austin respectively, increased from 1992 to 1993 but have fallen in 1994. The preliminary 1994 volume statistics for the Austin area (Blacklands-South LMA 26) indicate a substantial lag behind the volume posted in 1992 and 1993. Although the high level of sales in 1993 probably occurred because of several extraneous factors, the apparent decline in 1994 volume may partly be the result of buyers avoiding land that they believe may be subject to ESA regulation.

This analysis indicates that aggregated data do not represent land prices or values of particular classes of properties but, rather, the statistics provide a general guide to land market developments. Only further studies of individual data for specifically affected properties will confirm or deny the expected ESA effect on rural land values. .

Balcones Canyonlands Conservation Plan (BCCP)

Travis County has proposed to cooperate with the City of Austin and USFW to obtain a regional Section 10(a) permit, the permit required to develop land where warbler habitat could be incidentally taken. Participants in this plan could develop their land under the regional permit by paying a fee to mitigate habitat destruction. Presumably, opting into this voluntary plan would cut short the regulatory delay required to obtain an individual permit and reduce the overall cost

to the landowner. Proceeds gained from the imposed fee would be used to acquire additional habitat as part of a permanent preserve.

Mitigation fees became necessary when Travis County voters balked at publicly funding land acquisition required for the preserve. The amount of the fees causes out-of-pocket expenses to current owners and indicates the effect such fees may have on their overall wealth. The April 19, 1995, version of this proposed plan imposes a fee of $5,500 per acre for development of acreage with golden-cheeked warbler or black-capped vireo habitat. Additionally, owners of vacant platted lots would be required to pay $1,500 before building a home on the property. Although routine farming and ranching practices would be exempted, activities requiring clearing would incur a $1,500 per-acre clearing fee for each improvement. For example, building a barn would require a fee payment. Furthermore, the fees are based on an assumed average land cost of $5,500 per acre. If land prices rise, the fees also could increase.[15]

If this plan is put into effect, owners of undeveloped acreage would see their market value fall by the amount of the fee.[16] The downward adjustment may be even larger than the fee itself when the time value of money is considered. Because the fee is an expense incurred before development begins, it requires capital outlays at the beginning of development activity. Thus, developers would incur the cost of capital invested in the fee as an expense during the development period until sales had recouped that investment. Thus, the process is fraught with uncertainty both relating to dollar cost and to the opportunity cost of time delays.

The final incidence of the fee would depend on an owner's ability to pass the fee along to final users. The ability to shift the fee to final users is directly related to the supply of competing lots that are not subject to the added expense of the fee. If a development is unique and there is effective demand for the lots, developers could recoup all of the fees paid. However, developments lacking some compelling unique feature will be forced to compete with similar properties. Owners of non-unique properties in highly competitive markets will incur all or nearly all of the mitigation expense. The degree of shifting depends directly on the degree of competition in the market.

Although the area west of Austin in Travis County is uniquely attractive, homeowners can choose from alternative developments. Owners of properties in this area may be able to

shift some of the mitigation costs to others. Because of competing properties in the market, most owners of nontransitional, agricultural land likely will absorb all of the expenses resulting from mitigation fees. The degree of this potential shifting remains unknown. Future studies should explore the impact of these mitigation fees in an analysis of the financial attributes of the development process.

Conclusion

Although direct evidence of prices paid in areas substantially affected by ESA in Texas remains inconclusive, the consensus among Texas real estate brokers expressing an opinion points to some value declines associated with restrictions accompanying the act. Reacting to a perceived reduction in potential use, these brokers estimated that substantial declines in value from ESA impacts already have occurred.

The uncertainty surrounding land impacted by the ESA is perhaps the most troublesome element of the ESA controversy. Owners and potential buyers simply cannot know whether particular properties host an endangered specie or possibly could support such a creature at a future date. Furthermore, restrictions on use or the prospect of restrictions contributes to this disturbing climate of uncertainty. Potential buyers foresee possible bans on currently typical land uses and the likelihood of lengthy delays in obtaining permits to pursue their plans for the property, plus the possibility of consulting fees and mitigation expenses. Finally, the practice of exacting mitigation fees in return for issuing permits adds the specter of an unanticipated and unknown cost to management plans. The combination of mitigation fees and regulatory delay could cause expanses of market areas to become unattractive to buyers. In typical markets, these kinds of factors routinely translate into reduced offers and, ultimately, value losses for owners of affected properties.[17]

In some areas, buyers appear to be speculating that current problems will be resolved and values will increase, especially in the Edwards Aquifer area west of San Antonio. This speculation appears to have boosted market-wide value indicators. This kind of price support could evaporate as rapidly as it has appeared should the market development path envisioned by

the speculators fail to appear. Prices would likely plummet as demand atrophied and values lagged.

The evidence presented here is sketchy, precluding an outright conclusion about the magnitude of the value-related effects of ESA. Nevertheless, information gleaned in examining the ESA controversy in Texas does justify cause for concern about the integrity of lenders' collateral base. For example, market observers in the Travis County area cite the likelihood that a substantial acreage already has been adversely affected by ESA. Therefore, lenders should be concerned about this impact of the act on their collateral base.

Analysis of the Travis County assessments reveals that the most heavily affected properties, in dollar terms, are likely to be urban fringe properties and vacant lots. The degree of risk associated with investment in those properties has unquestionably increased and lending policies may need to reflect that fact. However, the reduction registered on purely agricultural properties points to a sizable decline as well. This lesser proportionate decline may prove to be especially troubling for lenders' collateral, particularly if the effect persists over a broad expanse of territory.

The BCCP program, ostensibly designed to facilitate development west of Austin, provides an indication of the costs associated with ESA in that region. If the assumed land value cited in the plan is correct, landowners will incur mitigation fee expenses equal to the value of their property. Any subsequent purchaser surely will consider that potential cost before making an offer. Such a fee structure probably will have a substantial negative effect on land values in the region.

To systematically gauge the extent of the ESA problem, lenders should undertake a broadly based, intensive study to identify affected and nonaffected properties. This analysis would allow lenders to establish the indicators of ESA habitat and identify its value-related effects. This kind of study would require extensive data sets of comparable sales but would provide the best indication ESA value effects. The study should be geographically diverse to include areas with few problems as well as the highly contested regions. In addition, lenders could examine the impact of specified BCCP mitigation fees on land values for various classes of property and property owners. By systematically evaluating the potential impact, lenders can obtain a more accurate measure of the possible threat to their collateral base.

Notes

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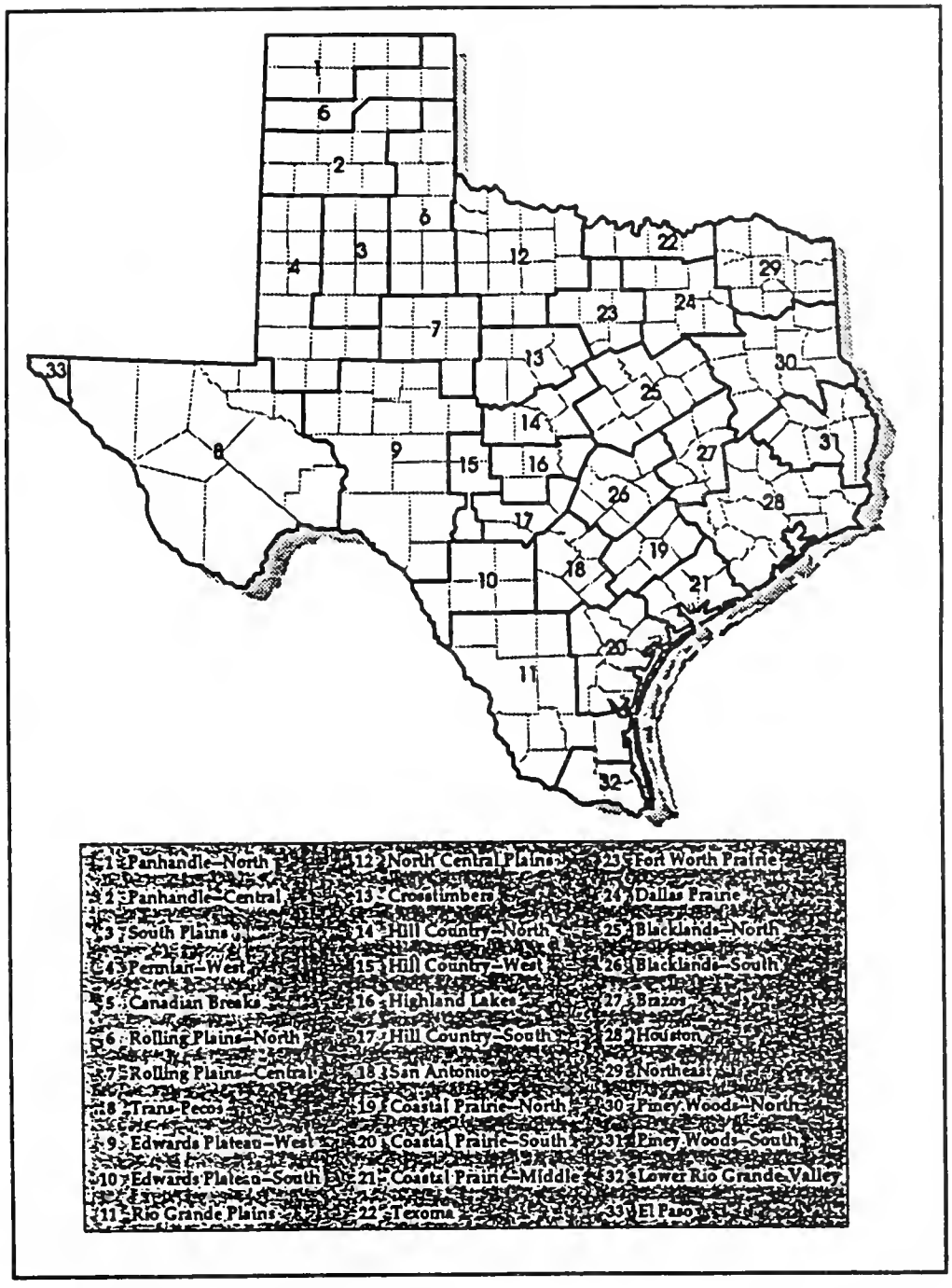
Appendix

Texas Land Market Areas



Source: Real Estate Center at Texas A&M University

STATEMENT OF ELLIOT PARKS, VICE CHAIRMAN, SAN DIEGO ASSOCIATION OF GOVERNMENTS

Good morning, Chairman Kempthorne and Committee Members. I am Elliot Parks, Deputy Mayor of the city of Del Mar and Vice Chairman of the San Diego Association of Governments (SANDAG). I work as the Director of one of San Diego's many biotechnology centers in San Diego.

On behalf of SANDAG and the nearly three million residents of the San Diego region, I thank you for the opportunity to offer public testimony before this prestigious panel.

I will:

(1) Briefly describe the San Diego region, emphasizing its habitat characteristics;
(2) Summarize the habitat conservation planning activities in the region; and
(3) Identify for your consideration modifications to the Endangered Species Act that would improve the future of habitat conservation planning.

First, the San Diego region is the area south of the urban sprawl of southern California.

Open space and habitat are important to the residents of our region. We are essentially geographically isolated. On our northern boundary is the Camp Pendleton Marine Corps Base. We have mountains and desert to the east. The Pacific Ocean is our temperature control to the west. And we share an international boundary with our neighbors to the south in Mexico.

Of our 4,200-square-miles (equivalent to the entire State of Connecticut), more than 90 percent are open pace, agricultural, parks, water, or undeveloped land. We have a lot of open space! A vast majority of our residents and our one million housing units are concentrated in the western one-third of the region along the coastal plain. The eastern two-thirds is largely undeveloped and primarily owned by the Federal, State and local government.

Open space and habitat are interwoven into our economic well being. Businesses and industries come to San Diego because many view us as an important entrepreneurial center, but also to enjoy our quality of life. The dry, mediterranean climate and the abundance of open space make it a nice place to be "outdoors." I would be remiss as the Deputy Mayor of a coastal city, Del Mar, if I didn't emphasize the importance of our wonderful shoreline and beaches to the economy, especially the visitor industry.

First let me focus on two needs that are pressuring the San Diego region.

The first is a need to protect a rapidly dwindling supply of natural resources. The San Diego region has a vast array of habitats that you literally can experience in one hour's drive time—from lagoons and estuaries along the shoreline, to coastal plains and mesas, to the foothills and mountains, to the deserts in the eastern portion of our county. It always seems to come as a surprise to people, but the San Diego region has more rare, threatened, and endangered species than any other county in the continental United States.

The second is a need to insure our economic well-being. The San Diego region will grow by over a million people and a half million houses and jobs during the next 20 years. This growth will consume over 200,000 acres of open space, much of it on our urban fringes, where our valuable habitat is most abundant.

Are these two needs irreconcilable? Can we preserve open space, yet still provide land to assure our economic growth. The San Diego region says—yes! The way we have chosen to resolve these issues is through large scale, multiple-habitat, multiple-species, multiple-jurisdiction conservation planning. However, we need your counsel and assistance to give us the edge that will increase our chances for success.

The entire 4,200-square-mile San Diego region is covered by three habitat conservation plans, which are divided into north, south and eastern subareas.

Although each planning program reflects its own unique and special conditions, they share a number of common attributes that I want to emphasize.

Each plan encompasses multiple-habitats, multiple-species, and multiple-jurisdictions—dunes and beaches, chaparral, grasslands, woodlands and forests, riparian and wetlands, 19 local governments, and a host of Federal and State agencies are all covered by these plans. The final plans could protect over 90 species and include all our residents.

The plans cover both listed and unlisted species. It is important to deal with threatened resources before they are at the edge of extinction, when the options are limited and when the solutions are much more expensive.

We need to avoid the current approach of listing on a species-by-species basis.

The plans have included all 19 local jurisdictions and Federal and State agency participation from beginning to end. It is not acceptable to have a last-minute "hit" from Federal and State agencies. We have completely integrated our efforts with the

State of California's Natural Communities Conservation Program. However, our plans will cover more than the coastal sage communities that are the focus of the State's efforts.

The habitat conservation plans are being developed with extensive advisory committee participation. The committees consist of representatives from virtually every possible interest group—environmentalists, builders and property owners, community groups, farmers, and local, State and Federal agencies. Political leadership has come from the Mayor of the city of San Diego, Susan Golding, for the southern plan and from SANDAG for the northern plan.

One key objective of the plans is to provide "certainty." Certainty means different things to different people. To the environmentalists, it means the certainty associated with preserve systems that will protect a biologically sound ecosystem. To the business community, it means the certainty associated with knowing what areas can proceed with development, knowing where the mitigation can be provided, and knowing what species are covered so they won't be "surprised" with future listings. To local government, it means the certainty associated with being able to proceed with public infrastructure improvements in a more responsive and timely manner.

The plans are being built on scientific and biologically sound approaches that provide for the integration of land use and economics. It is important that the preserve system works as an integral part of the region's land use and economy. It also must be based on sound biology. Our habitat conservation programs are widely viewed as models for how the Endangered Species Act could be more rationally structured and implemented.

The habitat plans are important to the region's economy. Water availability, waste disposal, and transportation are traditional examples of elements critical to the region's economic prosperity. However, we are, in effect, attempting to treat habitat as another significant element of the region's infrastructure. We need this habitat infrastructure to ensure sustainable development and to preserve our quality of life which attracts the work force necessary for us to continue to compete in global markets.

The last part of my testimony focuses on changes in the Endangered Species Act that would improve the future of habitat conservation planning in our region.

1. The Act should encourage multiple-habitat, multiple-species, and multiple-jurisdiction-based conservation planning. Protection of extensive habitat systems should be made sufficient under the law to preclude additional single species requirements. These changes should promote the ability to deal with both prelisted and listed species based on habitat coverage, and provide greater flexibility to add additional covered habitats/species as warranted. This step would provide greater certainty to the private sector and local governments. It would also avoid the uncertainty and costs directly associated with the current species-by-species approach.
2. The Endangered Species Act should encourage plans that are built on science, integrated with local economic and land use considerations. The plans in the San Diego region contain such an integration. These objectives are *not* irreconcilable.
3. We need more flexibility in the ESA to allow for phased implementation, not all the funding should have to be assured before permits are issued.
4. The Endangered Species Act should be revised to return land use controls to the local communities. Commitments to protection of natural resources and implementation of the habitat conservation plans at the local level should be encouraged.
5. It is time for a new partnership, where we implement these plans jointly and eliminate costly and adversarial approaches of the current regulations and processes.
6. The Federal and State government should provide a commitment to regional conservation planning and implementation. Our efforts, after all, is a significant contribution to the preservation of our national heritage. The local/State/Federal partnerships that our plans have developed should be used as a guide for cooperation from the earliest planning stages through implementation, management, and operation.

Our funding strategy calls for collaboration at two levels: (1) local, State and Federal, and (2) public and private. Although the programs will be implemented incrementally, SANDAG recently committed nearly $5 million to acquire the key property in the preserve area from mitigation funds for needed transportation improvements. Local governments especially the city of San Diego have invested over $5 million of their own funds to prepare these plans and recognize the need to continue this commitment through implementation.

The road ahead won't be easy. A number of important issues need to be resolved, especially financing. Eventually, it appears that a local funding strategy to match Federal, State and private funds will be needed. It also appears probable that this financing step may require a vote of the public. Our region is ready to assume our fair share of responsibility, but we need your resolve and collaboration through changes in the Act, and your continuing commitment through all the implementation stages. These plans are important to me as a representative of all the cities and County in the San Diego region but also to me as a business representative who wants both economic prosperity and quality of life.

Again, thank you for this opportunity.

Attachments:

1. MSCP Executive Summary
2. HCP Status Report
3. SANDAG Information Bulletin

A Habitat Plan for Greater San Diego

The Multiple Species Conservation Program (MSCP) is preparing a plan to protect sensitive plant and wildlife habitats in a way that can accommodate development necessary for the economic health of the region. A draft of this plan is now available for public review and comment.

MSCP is a cooperative effort between the City of San Diego, the County of San Diego, the cities of Santee, Poway, and Chula Vista and other jurisdictions in the southwestern portion of the greater San Diego region, state and federal wildlife agencies, other special purpose public agencies, and representatives of the land development industry and environmental organizations.

The program is evaluating the quantity and quality of remaining habitat in a 900 square-mile area from the San Dieguito River Valley south to the U.S./Mexico border and from the Pacific Ocean east to the community of Alpine. The Draft MSCP Plan proposes to establish a 197,106 acre habitat planning area. When the draft plan is finalized and approved, some land in that area will be set aside for preservation.

Why a Habitat Conservation Plan?

The current process of coordinating land development and resource protection is fragmented and frustrating for all parties. The Draft Multiple Species Conservation Plan would improve the process of habitat conservation while simplifying regulations governing land development.

1. The habitat conservation plan would protect existing natural habitats and endangered species while accommodating development necessary for the economic health of the region.
2. Efforts to protect San Diego's natural habitats in our open spaces would also help protect quality of life and property values.
3. The plan is a proactive and cooperative planning effort at the local level that overall would reduce the need for endangered species act regulation by federal and state governments on individual property owners in the region studied by MSCP.
4. Developers and individual property owners would benefit from an orderly system of dealing with habitat issues. Currently each property in open habitat areas must undergo individual review by state and federal agencies to determine impacts on sensitive habitat and endangered species. The preserve system would assure sensitive habitats and endangered species would be protected in the region and orderly development could proceed.
5. Endangered species and sensitive habitats would be preserved.

Who Developed the Draft Plan?

Two separare committees provided inpur to the consultant team that developed the Draft MSCP Plan:

MSCP Working Group–consisting of representatives of the Cities of San Diego, Chula Vista, Poway, and Santee; the County of San Diego; state and federal wildlife agencies; other special purpose public agencies; and representatives of the land development industry; and environmental organizations.

MSCP Policy Committee–a representative group of elected officials from the City of San Diego, County of San Diego, and other affected local cities.

Your Comments Are Encouraged!

Your interest in reviewing the Draft MSCP Plan is greatly appreciated. The public review period will end on May 30, 1995. Your comments on the draft plan may be sent to:

Comments
Draft MSCP Plan
c/o City of San Diego
600 B Street, Suite 500
San Diego, CA 92101

Summary of the Draft Multiple Species Conservation Program Plan

The Multiple Species Conservation Program is studying approximately 900-square- miles in southwestern San Diego County, including the City of San Diego, 10 additional city jurisdictions and portions of the unincorporated County. Approximately 41 percent of the study area is developed and five percent is agricultural land. The remaining 54 percent is vegetated with 18 types of native habitat. Most of these habitats are considered by federal or state regulatory agencies to be sensitive or rare.

San Diego County has nearly 100 plant and animal species that are either listed or proposed for listing as threatened or endangered. This is more than any other county in the continental United States. If adopted, the Draft MSCP Plan would preserve a majority of these species, reduce the likelihood that any future listings would be necessary, and, by doing so, significantly reduce the potential adverse effects that future listings could have on our region's economy. Here's what's in the draft plan:

1. An analysis of the natural habitats in the 900-square-mile area studied by the Multiple Species Conservation Program.
2. A plan to create a preserve within a defined Multi-Habitat Planning Area through a partnership between federal, state, and local agencies and private property owners. Local jurisdictions would review and approve projects that are consistent with the plan while federal, state, and local governments would commit land and/or money for acquisition of land.
3. Proposed guidelines on land use regulations and project mitigation to assist local jurisdictions in guiding development of lands within the area studied by MSCP.
4. An affordable financing and acquisition strategy which equitably spreads costs among all beneficiaries.
5. Recommendations for long-term management and monitoring of the preserve system and guidelines for which land uses in and near the preserve are compatible.
6. An economic impact analysis of the proposed conservation plan.

How to Obtain More Information

1. Send for a copy of the MSCP Plan Executive Summary (21 pages).
   The executive summary will give you a broad overview of the draft plan and may be received at no cost by mailing the attached post card or writing to: Draft MSCP Plan, Executive Summary, 600 B St., Suite 500, San Diego, CA 92101.
2. Review a copy of the Draft MSCP Plan (230 pages).
   If you need more details after reading the executive summary, read the Draft MSCP Plan in its entirety. Copies of the draft plan can be reviewed at libraries in the greater San Diego region. The Draft MSCP Plan is also available for the cost of printing and shipping. To obtain your copy, send a check in the amount of $35.00 payable to "City Treasurer" c/o Draft MSCP Plan, 600 B St., Suite 500, San Diego, CA 92101.
3. Call 570-1099 to reach a 24-hour MSCP Information Line for current information about the Draft MSCP Plan approval process and how to obtain more information.
4. Information about MSCP is accessible on the Internet at URL http://www.sannet.gov for individuals with browsers capable of accessing the Worldwide Web.

This information is available in alternative formats upon request

MULTIPLE HABITAT/SPECIES CONSERVATION PLANNING IN THE SAN DIEGO REGION

The San Diego region contains rich and diverse biological resources, many of which cannot be found anywhere else in the United States. These resources are important to the region's quality of life from economic and environmental perspectives.

The federal government has identified over 300 plant and animal candidates for endangered species listing within the region. However, San Diego continues to grow. The land needed to accommodate this growth creates competition for these resources. The habitat conservation programs are designed to resolve these conflicts and prevent them from occurring in the future by planning for the region's economic and habitat conservation needs at the same time.

Habitat conservation planning in the San Diego region has become an accepted way to resolve conflicts through consensus building with environmental groups, public agencies, private landowners, and developers. While some planning efforts in the rest of Southern California focus on the California gnatcatcher and its coastal sage scrub habitat, the efforts in the San Diego region are designed to meet multiple habitat and biological diversity objectives by providing plans for a range of habitats and species both listed and unlisted.

Natural Communities Conservation Planning (NCCP)

The State of California has initiated a habitat conservation planning process that concentrates on the conservation of larger units of land and emphasizes planning for environmental systems. The pilot effort focuses on the coastal sage scrub habitat of the coastal California gnatcatcher in Southern California. The program is designed to address a habitat type of several species, rather than focusing on the one species at a time.

The State of California signed an agreement with SANDAG, the City of San Diego, and the County of San Diego. Through this agreement the State recognizes the programs sponsored by these agencies as on-going multi-species plans under the Natural Communities Conservation Planning (NCCP) guidelines.

Multiple Habitat/Species Conservation Planning in the San Diego Region

The San Diego Region has three major multiple habitat/species conservation efforts underway. These programs are designed to protect key habitat areas and wildlife corridors and meet the requirements of the federal and state Endangered Species Acts in a manner that addresses land use and economic objectives of the region. Lands which contain critical biological resources are being identified, and plans are being developed for conservation areas and wildlife corridors. Each effort is individually tailored to its specific area; yet, they are being coordinated to avoid duplication and will be linked to create a regional habitat conservation system. These three programs are summarized on the following pages.

1. **The Multiple Species Conservation Program (MSCP)** is a comprehensive habitat conservation planning program which addresses multiple species habitat needs and the preservation of natural communities for a 900 square mile area in southwestern San Diego County. The MSCP addresses the potential impacts of urban growth and loss of natural habitats, and develops a plan to mitigate for the loss of plant and wildlife species and habitat due to the direct and indirect impacts of future development of both private and public lands.

   The MSCP creates a new process for the issuance of federal and state permits and other authorizations under the state and federal Endangered Species Acts and the Natural Communities Conservation Planning Act of 1991. The MSCP will allow the twelve participating local jurisdictions to maintain development flexibility by proactively planning a regional preserve system which can meet future public and private project mitigation needs.

   The Draft MSCP Plan was circulated March 2, 1995. The Plan is currently being reviewed and considered by the public and elected officials. The Draft MSCP Plan proposes a 164,000-acre preserve, including 93,000 acres of private habitat lands, and would protect 87 species from extinction if adopted.

2. **The Multiple Habitat Conservation Program (MHCP)**, similar to the MSCP, is a comprehensive program designed to meet the habitat needs of some 90 target species within natural areas of northern San Diego County. The program is being undertaken by a consortium of local, regional, and special purpose agencies formed in 1991 to exchange information on land planning issues and coordinate the preparation of local conservation plans. The program is being managed by the San Diego Association of Governments (SANDAG).

   Funding comes from the ten north county local jurisdictions, public facility providers and the federal government. The goal of the MHCP is to develop a plan providing for the conservation of state and federally listed threatened and endangered species and other key species and their habitats within the MHCP study area. The study area covers approximately 1,029 square miles, including Camp Pendleton which is a 134,000 acre Marine base.

   A Biological Core and Linkage Area (BCLA) map has been prepared to identify key biological areas and show how they can be linked. Currently, a focused planning area is being developed. This area takes into consideration land use plans and ownership patterns as key components of the preserve system. When the biological and fiscal analysis is complete, a Draft Plan for Public Review will be circulated. The plan adoption process will begin in early 1996. Additional steps have been taken to develop a public outreach program in coordination with the MSCP and MHCOS.

3. **The Multiple Habitat Conservation and Open Space Program (MHCOS)** is a comprehensive planning program created for the unincorporated area of eastern San Diego County. The unincorporated portion of the County covered by the three programs contains

3,580 square miles, with 2,300 of that in the MHCOS and the remaining 1,280 square miles divided between the MSCP and the MHCP.

The goal of the MHCOS is similar to that of the MSCP and MHCP, which is to develop a plan providing for the conservation of state and federally listed threatened and endangered species and other key species and their habitats. One other goal of the MHCOS is to interface with the federal and state landholdings in the Cleveland National Forest, Bureau of Land Management and the Cuyamaca Rancho and Anza Borrego Desert State Parks. As a coordinated program, all of these public holdings can be utilized as building blocks with rural private holdings for a framework plan. The creation of an open space system for the eastern San Diego County will guide the development to the less sensitive areas and assist in the protection of regional corridors.

The first phase of the MHCOS has been completed with the creation of vegetation maps for the eastern portion of the County. The vegetation data will be utilized along with sensitive species data to create a habitat evaluation model and habitat quality maps. Once biological analysis is complete, the program will follow the schedule of the MHCP and MSCP by approximately one year.

The Habitat Conservation Plans are designed to develop and implement a program for the conservation and management of habitats of federally endangered, threatened, or key candidate species, and to implement the State of California's Natural Communities Conservation Planning program. The programs call for the establishment of a preserve system which will replace the currently fragmented, project-by-project biological mitigation areas, which by themselves do not contribute to certainty necessary for economic recovery or to the continued existence of sensitive species or to the maintenance of the natural biodiversity. The programs are designed to provide long-term conservation and economic benefits to the participating jurisdictions.

The objectives of the HCPs are to:

1. Establish and maintain a workable balance between preservation of natural resources and regional growth and economic prosperity.

2. Contribute to future economic viability by providing a component of an open space system. This amenity is important in attracting new employment to the region.

3. Develop a program for the maintenance of biological resources and the conservation/ protection of self-sustaining viable populations of federally listed endangered, threatened, and key candidate species and their habitats.

4. Define a planning area within which preserve creation is focused, or within which a preserve is defined, and implement a preserve system which conserves viable habitat and provides for wildlife use and movement.

5. Reduce the human-related causes of species extirpation.

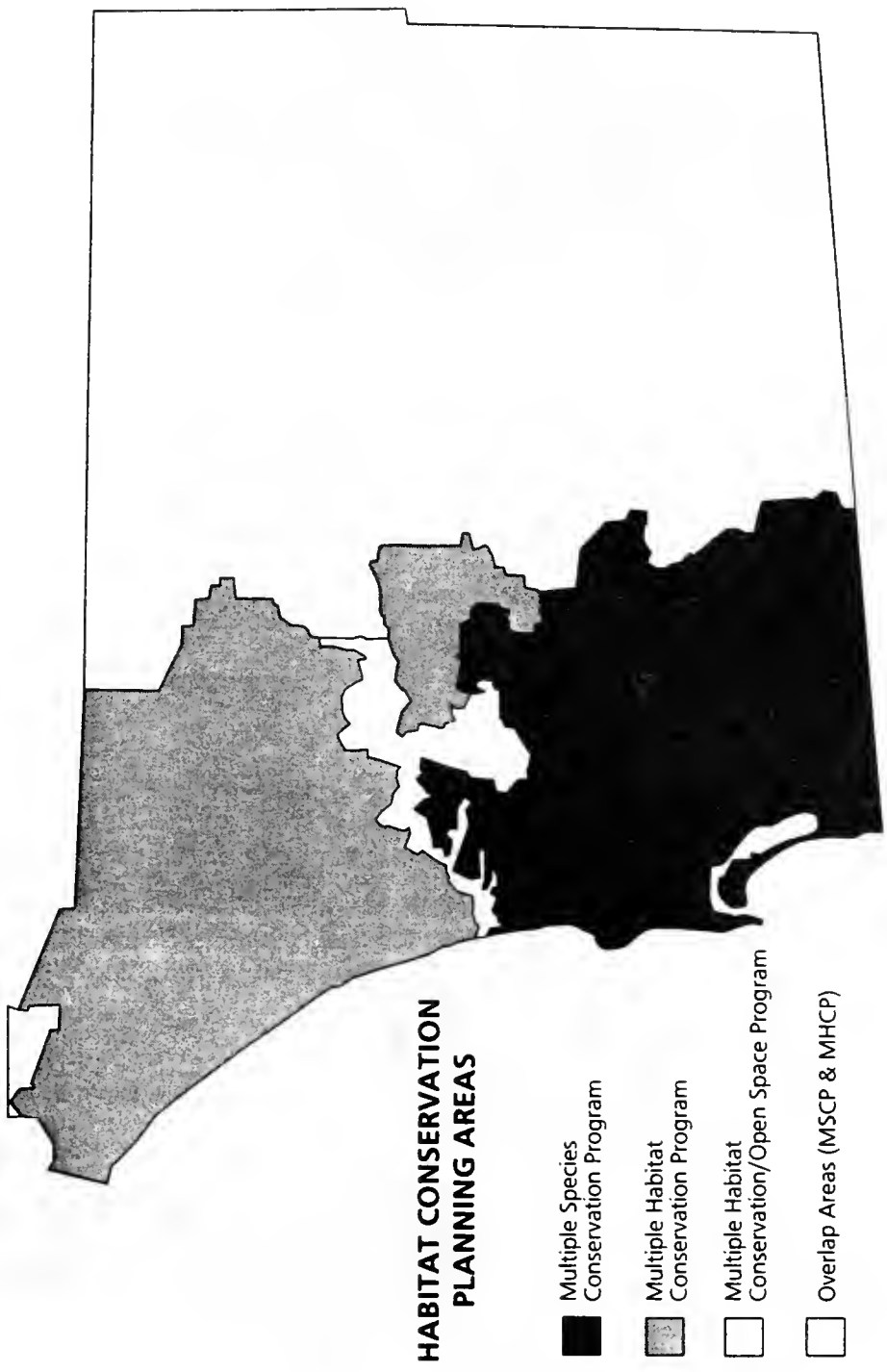
6. Establish a partnership among state, federal, and local agencies of government to facilitate mitigation and approval of public and private sector land development and construction projects by expediting acquisition of federal and state permits. This action provides both an immediate and long term economic benefit to the region.

7. Meet the applicable requirements of the federal and state Endangered Species Acts and the California NCCP Act of 1991.

8. Describe a finance and acquisition strategy which spreads implementation costs equitably among all beneficiaries and which is affordable to the region.

9. Provide a framework for development of subarea and project plans which directly implement the HCPs through local actions.

10. Provide a plan for general public benefit through open space conservation and access to natural preserves for passive recreation and an improved quality of life. Three large scale multiple habitat/species conservation plans are being prepared in the San Diego region.


HABITAT CONSERVATION
PLANNING AREAS
Multiple Species
Conservation Program
Multiple Habitat
Conservation Program
Multiple Habitat
Conservation/Open Space Program
Overlap Areas (MSCP & MHCP)

INFO
JANUARY-FEBRUARY 1995 THREE DOLLARS

NATURAL HABITATS
IN THE SAN DIEGO REGION

Balancing Development and Habitat Preservation

Developed/ Disturbed Agriculture Natural Habitats

INTRODUCTION

These habitat conservation programs are aimed at protecting multiple species and their habitats rather than the single species protection approaches of the past.

The San Diego region has one of the most biologically diverse environments in the continental United States, supporting a variety of species and habitat types. This is partially due to the region's varied topography, climate and soils. The region's ecosystems range from dry, hot, sparsely vegetated deserts, to coniferous-dominated mountain areas, to maritime-influenced chaparral and scrub communities, to the coastal scrub dominated coastal areas to coastal lagoons and estuaries. Each of these areas supports a unique assemblage of plant and animal species. There are roughly 1,700 plants, 80 mammals, 435 birds, 75 reptiles and amphibians, 125 butterflies and over 10,000 terrestrial and aquatic invertebrates in the region.

The San Diego region is also one of the most desirable places to live and work. The region's population in 1970 was 1.3 million and has since doubled to 2.7 million. By 2015, San Diego's population is forecasted to grow to 3.8 million. This growth has had tremendous effects on the environment. In addition to destruction and loss of habitat and species, the region's remaining habitats have been fragmented, particularly in the coastal areas. Currently, over 200 plants and animals are listed or proposed to be listed by federal or state governments as endangered, threatened or rare. In addition, a number of plants and animals are of local concern due to declining populations. Some of the more commonly recognized species in the region which are endangered or threatened include the California least tern, the brown pelican, the least Bell's vireo, the coastal cactus wren, the Stephens' kangaroo rat and the California gnatcatcher.

The region's opportunity for economic growth hinges on new public and private investment in capital and technology. Having habitats set aside in a preserve system is an asset to the region because it will facilitate and allow economic development to proceed in areas outside of the preserve.

In an attempt to resolve conflicts between economic development and preservation of the natural environment, local governments, community organizations and private sector interests are working together to develop habitat conservation plans. These habitat conservation programs are aimed at protecting multiple species and their habitats rather than the single species protection approaches of the past. The goal is to create an interconnected habitat preserve system for the entire region. The preserve will be designed to meet biological needs, but also will encompass economic considerations.

Geographic Information Systems (GIS) are being used to prepare and analyze extensive biological and land management data bases to support these objectives. This ***INFO*** provides an overview of the region's habitat conservation planning programs, how they are integrated with state and national efforts, and how GIS is being used within these programs. This ***INFO*** also provides a profile of the natural resources in the western portion of the region and a general idea of how these resources are being protected by current planning practices and policies.

HABITAT CONSERVATION PLANNING

Because of its natural biodiversity and desirability as a place to live, the region is faced with the challenges of balancing the need to protect natural resources and providing land required for future economic growth. Three subregional habitat conservation programs have been initiated to help promote ecologically sustainable development. They are the City of San Diego's Multiple Species Conservation Program (MSCP), the North County Multiple Habitat Conservation Program (MHCP), and the County of San Diego Multiple Habitat Conservation and Open Space Program (MHCOS). The MSCP study area covers the southwestern quadrant of the San Diego region, the MHCP covers the northwestern quadrant, and the MHCOS covers the eastern half of the region. In addition to administering the habitat conservation plan for the eastern half of the region, the County also is involved in the MSCP and MHCP due to the large amount of unincorporated land within each of these program areas. Map 1 illustrates the coverage of these programs.

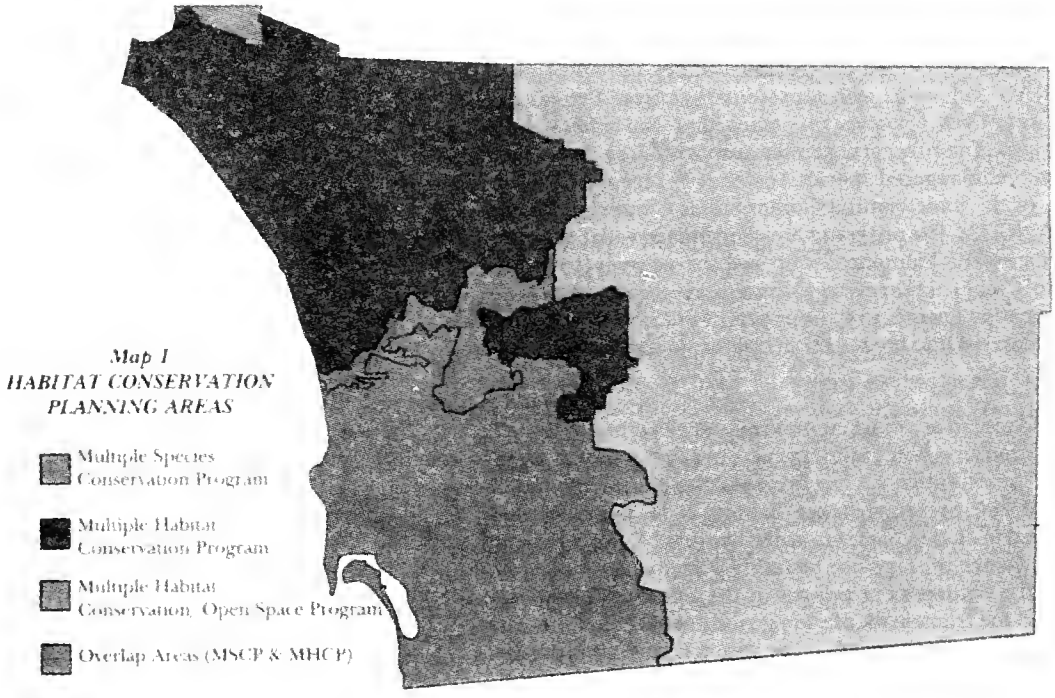
The least Bell's vireo.

Within these larger programs there are various subarea habitat conservation planning programs. They include the City of Carlsbad Habitat Management Plan (HMP), the City of Poway Subarea Habitat Conservation Planning Program, the City of San Marcos Biological Resource Management Plan (BRMP), and the San Diego River and Sweetwater River Habitat Plans (which focus specifically on riparian habitats to protect the endangered least Bell's vireo). Multi-species habitat management plans are also underway on Miramar Naval Air Station, Camp Pendleton Marine Corps Base, and the Fallbrook Naval Weapons Annex.

All of the programs involve local, state and federal agencies as well as special purpose agencies, environmental agencies, developers, environmental groups and private individuals working cooperatively to prepare habitat conservation pro-

grams. Since the habitat preserves will straddle political boundaries, these plans also require that the local jurisdictions work together to design, implement and manage the habitat preserve system.

These habitat conservation plans are designed to protect multiple habitats and the species which live in these habitats. They are not reactive, single species recovery plans which have typically been prepared in the past under the Endangered Species Act. These multiple habitat/species conservation plans are proactive approaches designed to avoid economic and environmental conflicts and to prevent, or at least minimize, future listings of plant and animal species. They are intended to accommodate future growth in the region and at the same time preserve habitats and species. The environmental goal of all the programs is to develop a system of interconnected multiple habitat preserves to protect species and their habitats in perpetuity. They are designed to maintain the full range of vegetation communities which currently exist, as well as focus on preserving rare or declining habitats. If the habitat preserve is to meet the biological goals, it must contain large blocks of interconnected habitats. If the biological objectives are met and there are adequate habitats set aside to maintain viable populations, the preserve system and programs will



Map 1
HABITAT CONSERVATION PLANNING AREAS

avoid the past species-by-species listings which have occurred under the Endangered Species Act.

The preserve system also will benefit economic recovery efforts in the region. The habitat programs are necessary to keep development from being disrupted by future listings of endangered species. Unless a regional plan for habitat conservation is agreed to by all levels of government, businesses and investment companies throughout the nation and world could view San Diego as a risky destination for investment dollars. Environmental conflicts would remain unresolved and government regulators could block or restrict development each time a conflict arises.

A habitat preserve system also provides the development community assurances of where they can and cannot develop and the preserves will provide areas for off-site mitigation to compensate for habitats lost elsewhere in the region. The preserve system will replace the current practice of setting aside small, fragmented patches of habitat in a haphazard fashion on a project-by-project basis. The plans and policies developed under these habitat conservation programs will provide both the environmental and development communities a degree of assurance on which to base decisions.

A habitat preserve system also provides the development community assurances of where they can and cannot develop . . .

The habitat conservation planning efforts are being coordinated by a committee of staff and consultants from each of the programs. The committee operates under the auspices of SANDAG and works with representatives from federal and state resources agencies on issues that may affect these programs. The programs receive authority from the federal and state Endangered Species Acts and are recognized subregions of the State Natural Communities Conservation Program (NCCP). The programs are coordinated with the Southwest Ecoregion Planning Group and are represented on the State of California Executive Committee on Biodiversity. This coordination ensures that the efforts of the San Diego region are integrated into the southern California area and the state respectively.

This cooperative effort at multiple species and multiple habitat conservation planning has attracted national attention. "The experiment . . . is breathtaking in its magnitude," said Interior Secretary Bruce Babbitt in an interview that appeared in *Rolling Stone* magazine last July. "The question is, can we invoke the land-use planning power of local communities, the enforcement powers of the Endangered Species Act, and the framework of state government to pull this off? . . . I think it's going to work." The nation is looking to the San Diego region to see if these plans can succeed.

GEOGRAPHIC INFORMATION SYSTEM OVERVIEW

Geographic Information Systems (GIS) are used extensively to support the habitat conservation programs. A GIS is a computer system capable of creating, storing, processing, analyzing, and displaying all forms of geographically referenced (mappable) information. Components of a GIS include hardware, software, geographic data, and skilled personnel.

GISs are used in all four phases of the habitat conservation planning programs: data base development, data modeling, Gap Analysis, and habitat preserve design. As part of the data development phase, two types of data bases are developed: biological and land management. Biological data layers include vegetation, locations of sensitive plant and animal species, soils which support sensitive plants, vernal pool locations, and animal micro-habitat features such as cliffs, mines, ponds and other small wetlands. Land management layers include planned land use (from local agency General and Community Plan Land Use Elements), land ownership, an inventory of existing open space parks and habitat preserves, land values and local policy constraints to development.

Land management layers are used to evaluate how well natural habitats are protected under current ownership and planning policies, to assist in identifying opportunities and conflicts in the design of a multiple habitat preserve system, and to help determine the costs associated with preserve alternatives.

Since there is not sufficient time or funding to conduct a detailed biological inventory of species locations and habitat quality indicators throughout the region, predictive models are developed and used to rank lands according to their habitat resources. The GIS Habitat Evaluation Model[1] helps determine habitat value in a subregional context rather than the fragmentary site level analysis typically done on a project-by-project basis. This model is biologically based and examines a number of habitat quality parameters such as habitat patch size and shape, elevation and slope factors, habitat diversity, edge effects (proximity to development), the number of sensitive species supported by each habitat, and the rarity of each habitat type. The model is used as a quantitative way to rate biological resources within each of the habitat

[1] The GIS Habitat Evaluation Model, described in detail on page 27, was developed by a team of local biologists and GIS staff in conjunction with state and federal resource agencies

conservation program's planning area. (Note: habitat modeling to date is complete for the MSCP and MHCP study areas only.)

In addition to identifying habitat value based on biological criteria, land management layers (described above) are used in conjunction with biological information to evaluate land use policies and to see how well they protect habitats. Traditionally, this type of analysis, Gap Analysis, has only looked at ownership criteria to identify gaps in biological resource protection. The habitat conservation programs in the San Diego region expand the Gap Analysis to not only look at land ownership but also to evaluate future land use plans. Evaluation of planning policies can assist in determining critical areas in need of immediate protection, as well as identify existing opportunities.

Information from the Habitat Evaluation Models and the subsequent Gap Analysis assists in the design of a multiple species and multiple habitat preserve. These GIS tools are helping to determine how publicly owned lands and the land use planning process can be used to establish cornerstones for the habitat preserve. Land value information is used to help determine the potential costs of acquisition associated with land which may be necessary for a viable habitat preserve system.

BIOLOGICAL DATA BASES

*Note: The information contained in this **INFO** is confined to the MSCP and MHCP planning areas only (see Map 1). The biological and land management layers required for the Habitat Evaluation Model and Gap Analysis are complete for these two programs. Data contained in this **INFO** represent a snapshot in time and will be subject to change as the programs progress. Since the MSCP and MHCP planning areas overlap, to date there has not been a regional picture or evaluation of the natural habitats in San Diego. This **INFO** attempts to provide some assessment of biological resources for the western portion of the San Diego region, as well as provide a picture of how well resources may or may not be protected by current land use policies. The western portion of the region, as defined by the MSCP and MHCP study areas shown on Map 1, has the most intense pressure for development. While the eastern half of the region also has pressures to develop, large public land holdings by the California Department of Forestry (Cleveland National Forest), Bureau of Land Management, and the State of California Department of Parks and Recreation (Cuyamaca State Park and Anza-Borrego Desert State Park) afford a high degree of protection for the natural resources.*

As shown in Table 1, the western region encompasses roughly 1.2 million acres, or approximately 1,835 square miles. The study area covers roughly 44 percent of the entire San Diego region.

Table 1
VEGETATION COMMUNITIES
Western San Diego Region
(in acres)

	Vegetation Types	Total Acres	Percent of Total Vegetation	Percent of Natural Vegetation
Natural Vegetation	San Diego and Mission Bay	14,582	1.2	2.1
	Southern Foredunes	517	0.0	0.1
	Southern Coastal Bluff Scrub	307	0.0	0.0
	Maritime Succulent Scrub	1,839	0.2	0.3
	Coastal Sage Scrub	206,027	17.5	29.6
	Alluvial Fan Scrub	559	0.0	0.1
	Chaparral	233,386	19.9	33.6
	Southern Maritime Chaparral	3,389	0.3	0.5
	Coastal Sage-Chaparral Mix	20,877	1.8	3.0
	Grassland	109,329	9.3	15.7
	Meadow or Seep	386	0.0	0.1
	Southern Coastal Salt Marsh	2,848	0.2	0.4
	Alkali Marsh	170	0.0	0.0
	Freshwater Marsh	1,634	0.1	0.2
	South Coast Live Oak Riparian Forest	9,266	0.8	1.3
	Riparian Forest	7,065	0.6	1.0
	Riparian Woodland	4,323	0.4	0.6
	Riparian Scrub	14,819	1.3	2.1
	Open Oak Woodland	26,381	2.2	3.8
	Open Engleman Oak	4,762	0.4	0.7
	Dense Engleman Oak	5,374	0.5	0.8
	Coast Live Oak Forest	195	0.0	0.0
	Black Oak Forest	2,173	0.2	0.3
	Torrey Pine Forest	169	0.0	0.0
	Southern Interior Cypress Forest	5,696	0.5	0.8
	Montane Coniferous Forest	195	0.0	0.0
	Coulter Pine Forest	212	0.0	0.0
	Big Cone Spruce and Canyon Oak Forest	2,127	0.2	0.3
	Jeffrey Pine Forest	887	0.1	0.1
	Eucalyptus Forest	3,634	0.3	0.5
	Inland Water	8,108	0.7	1.2
	Disturbed Wetlands	1,850	0.2	0.3
	Non Vegetated Floodchannel	1,000	0.1	0.1
	Beach and Saltpan	1,525	0.1	0.2
	Subtotal	***695,608***	***59.2***	***100.0***
Non-Natural Vegetation	Agriculture	118,326	10.1	
	Disturbed Habitat	27,843	2.4	
	Developed	332,823	28.3	
	Subtotal	***478,992***	***40.8***	
	TOTAL	**1,174,600**	**100.0**	

(Totals may not add due to rounding.)

Information on vegetation is one of the key elements required for the habitat conservation planning efforts. The classification system used to categorize vegetation for the San Diego region is based on the Holland scheme. The current vegetation layer identifies over 30 types of vegetation communities. This data base will be expanded, both categorically and spatially, to include additional vegetation types which occur in the mountains and deserts. This information will be mapped as part of the County's habitat program in the eastern half of the region.

Other important biological data bases developed as part of the habitat planning programs include known locations of sensitive plants and animals, locations and extent of vernal pool complexes, animal micro-habitats features (such as cliffs, mines, ponds, rocky outcrops), elevation, slope, and the identification of soils which support sensitive plant species.

Table 1, Figure 1, and Map 2 all portray information on vegetation for the western region. Table 1 shows the information contained in the data set, as well as the proportion of the vegetation types within the entire study area and within naturally vegetated areas only. Vegetation categories contained in Figure 1 and Map 2 are aggregations of the detailed vegetation types shown in Table 1.

Almost 41 percent of the area within the western region is already devoid of natural habitats. Twenty-eight percent is already developed, ten percent is in agricultural production, and an additional two and one-half percent of the area is so disturbed that the original habitat cannot be identified (primarily due to clearing for development or agricultural use).

Fifty-nine percent of the western region remains covered by natural habitats. Of the naturally vegetated areas, 33 percent is covered by chaparral vegetation, 30 percent by coastal sage scrub, 16 percent by grasslands, and 21 percent by all others. Some of the very rare vegetation communities with limited distribution include southern foredunes, southern coastal bluff scrub, maritime succulent scrub, alluvial fan scrub, southern maritime chaparral, southern interior cypress forest, marshes, oak woodlands, and all the riparian habitat types.

Figure 1 illustrates the proportion of vegetation types within the natural areas of the western region. Open water, marshes and all riparian vegetation types together comprise only seven percent of the remaining natural areas in the western region. These types of habitats are very productive ecosystems upon which all species are dependent at some time in their lives.

Building the Vegetation Data Base

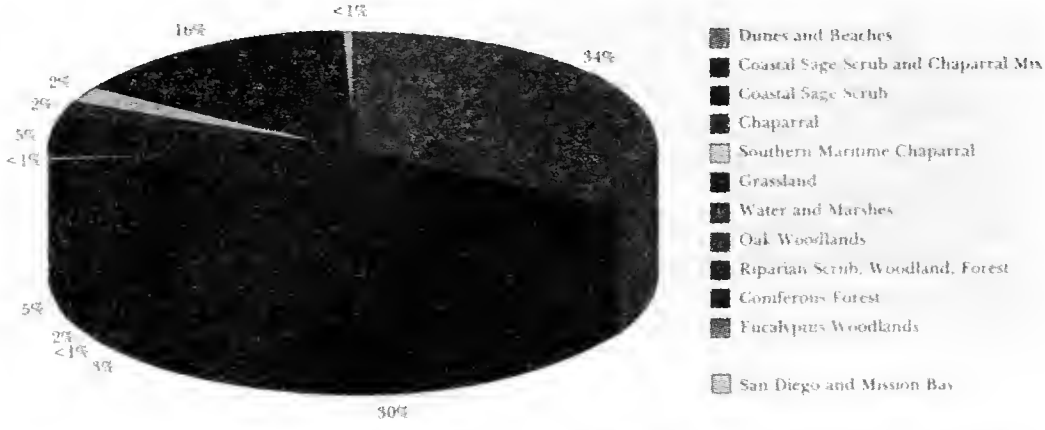
Information on vegetation for the western region was obtained from a variety of sources. Vegetation data for the MSCP study area was developed primarily from the interpretation of false color infra-red aerial photographs. Limited field checks were conducted, but secondary sources were used as verification where possible. Using a set of criteria and guidelines, biologists delineated boundaries between vegetation communities directly onto the air photos. Information was entered directly into the GIS using a procedure known as "heads up" digitizing. Geocoded (has real world coordinates) and terrain corrected (corrected for elevational distortions) satellite images were used as backdrops to transfer the boundaries shown on the photos into the computer. The satellite imagery was processed to look like the false color infra-red air photos. The boundaries identified on the photos were easily recognizable on the satellite images by the GIS staff and could be easily transferred into the GIS.

Vegetation information for the MHCP came from a number of existing digital sources. These included the City of Carlsbad HMP, the City of San Marcos BRMP, the County of San Diego as part of the MHCP and their habitat conservation planning for the unincorporated area of the region, Camp Pendleton Marine Corps Base, and the Metropolitan Water District as part of their Pipeline 6 Corridor study. In areas where no digital information for vegetation existed, the photo interpretation and "heads up" digitizing procedures used in the MSCP were implemented to fill in the gaps.

Oak woodlands cover roughly five percent of the natural areas. Two percent of the natural area in the western region is water - San Diego and Mission Bays. Although the coniferous forests account for slightly under two percent of the study area, they are abundant in areas outside of the study area.

Map 2 depicts the spatial distribution of the vegetation types. The remaining large blocks of habitats occur east of the urbanized area along the eastern fringe of the study area. This is largely dominated by chaparral with some large areas of coastal sage scrub. The northwest corner of the study area also has significant natural areas but these are located on the military lands of the Camp Pendleton Marine Corps Base and the Fallbrook Naval Weapons Annex. In general, the natural areas west of Interstate 5 and Interstate 805 are highly fragmented and are generally of small size. Habitats in the northern portion of the study area also are highly fragmented due to interspersed agricultural activity and low density residential land uses. The larger habitats in the center of the western portion of the study area are surrounded by development and are under intense development pressure. The riparian corridors are highly fragmented and are very narrow. Linkages between large blocks of natural habitats are weak.

Figure 1
GENERALIZED VEGETATION *
Western San Diego Region
(Natural Habitat Areas)



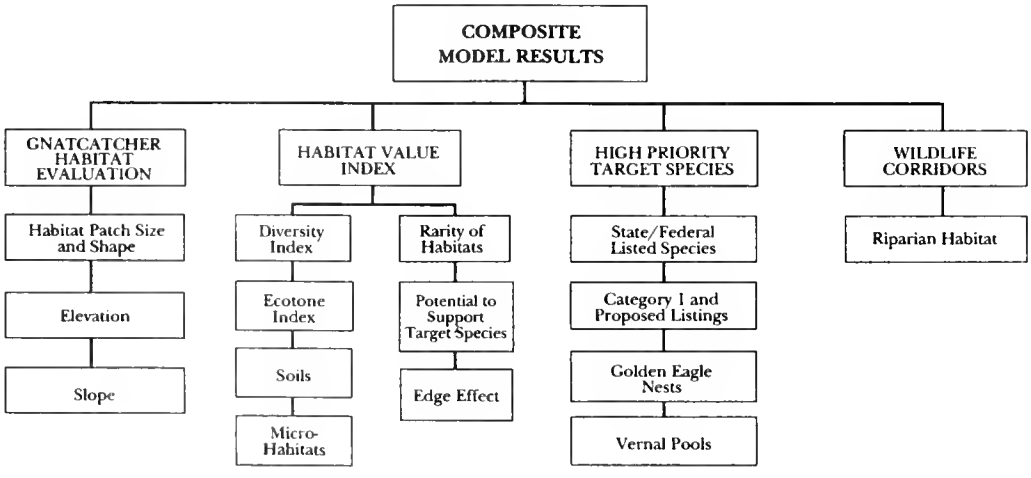
* Aggregated from the detailed vegetation types shown in Table 1

HABITAT EVALUATION MODEL

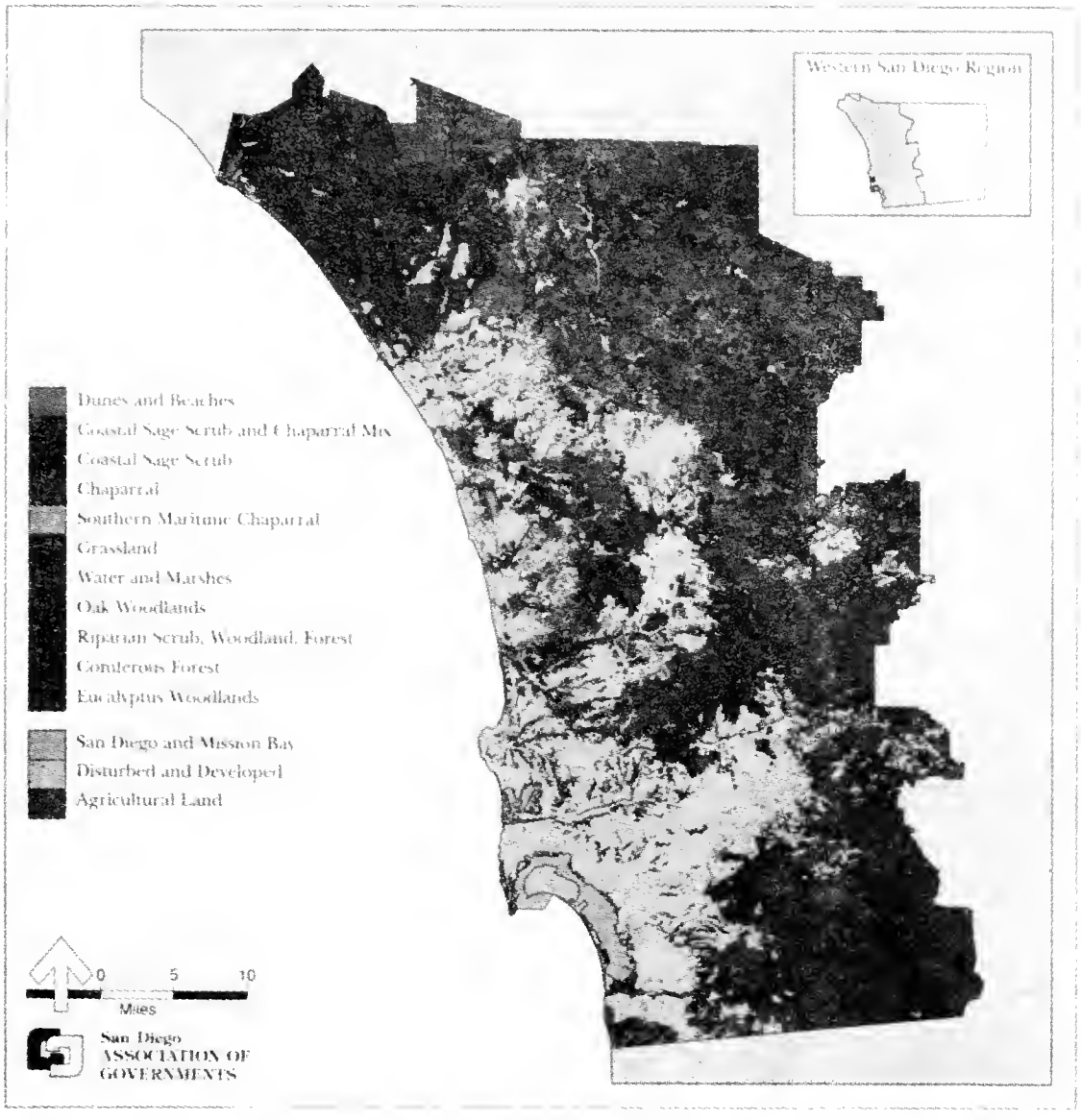
Time and financial resources in the habitat conservation planning programs limited detailed biological surveys and inventories of natural resources. Therefore, predictive habitat evaluation models were used to gauge relative habitat value and evaluate biodiversity within the study areas. A team of local biologists developed a set of criteria on which to model and assess habitat quality. A team of GIS experts developed the Habitat Evaluation Model (HEM) based on the specified biological criteria. The Habitat Evaluation Model was evaluated for its validity and soundness by local biologists, U. S. Fish and Wildlife Service, California Department of Fish and Game, the Scientific Review Panel (representing the State's NCCP), other qualified scientists and the academic community. (See page 27 for a more detailed description of the HEM.)

The model is habitat-based. The vegetation layer acts as a predictor or indicator of relative habitat quality and as an indicator of species presence or absence. This data base and the other natural resource data bases are used to rate potential habitat quality and biodiversity of the remaining natural areas in the region. Areas rated with the higher levels of habitat value will be assumed to contain the suite of species which depend upon that habitat for their survival. Figure 2 provides a simple flow chart of the Habitat Evaluation Model, its components, and parameters.

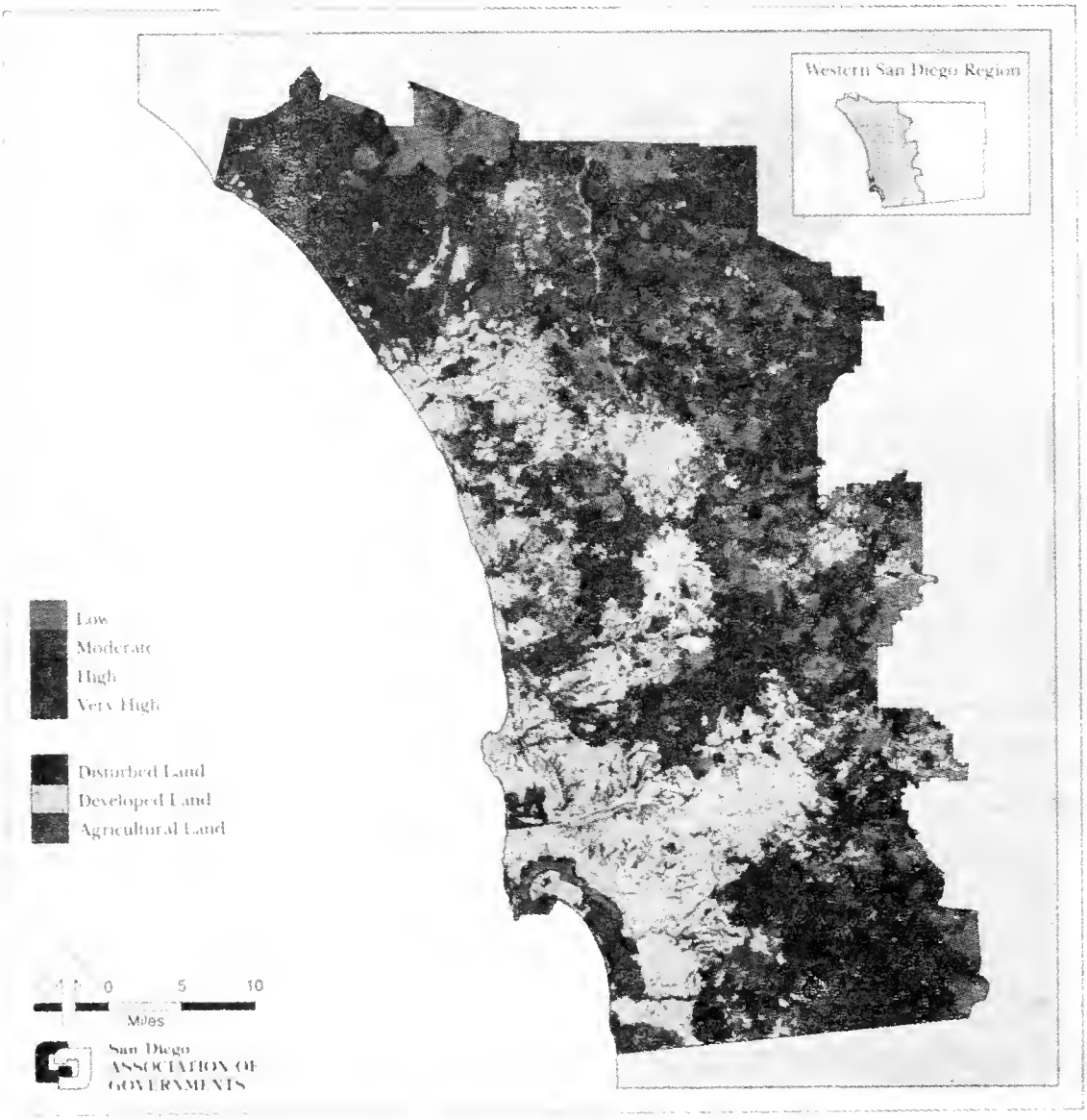
Figure 2



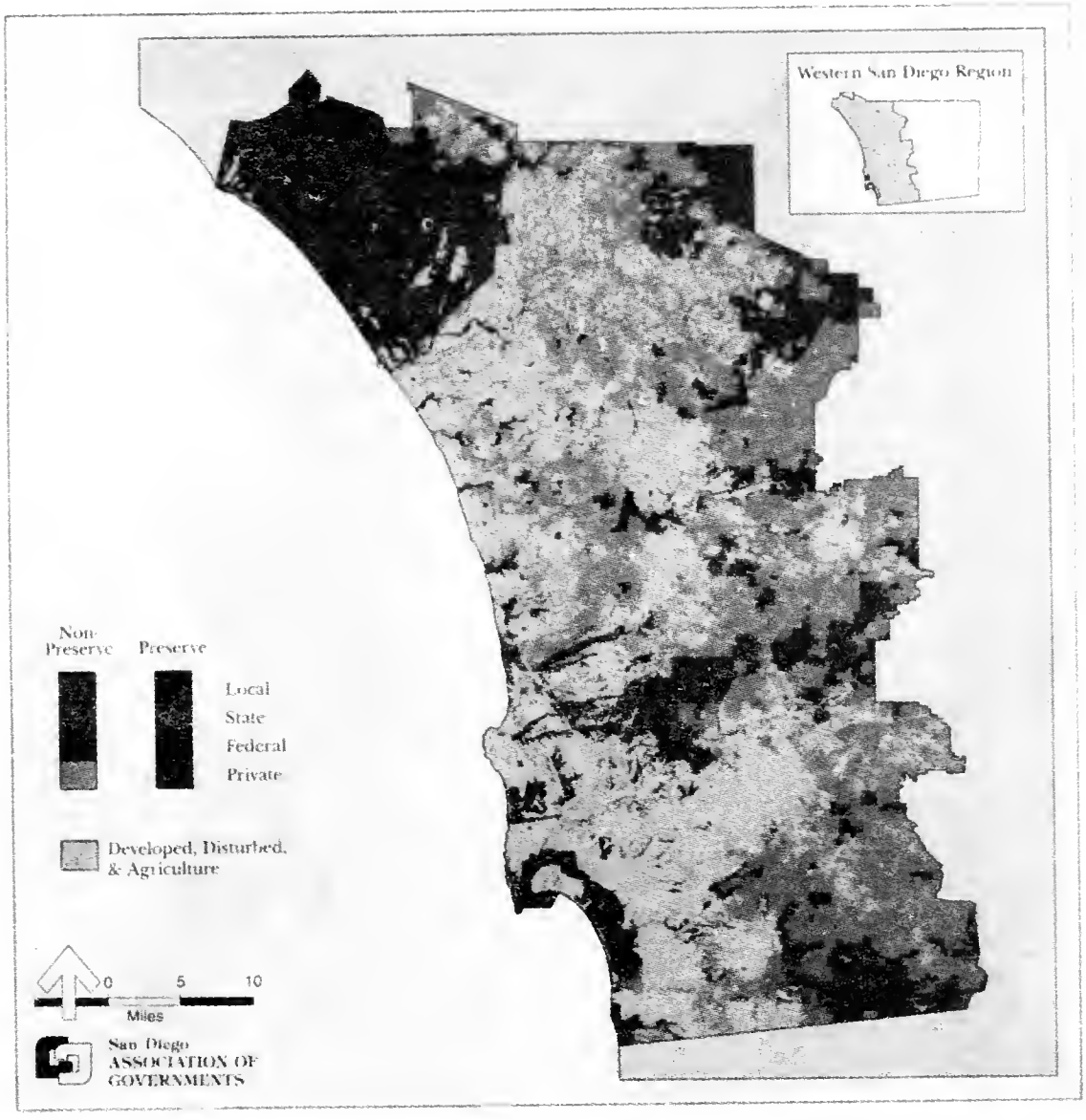
Map 2
GENERALIZED VEGETATION



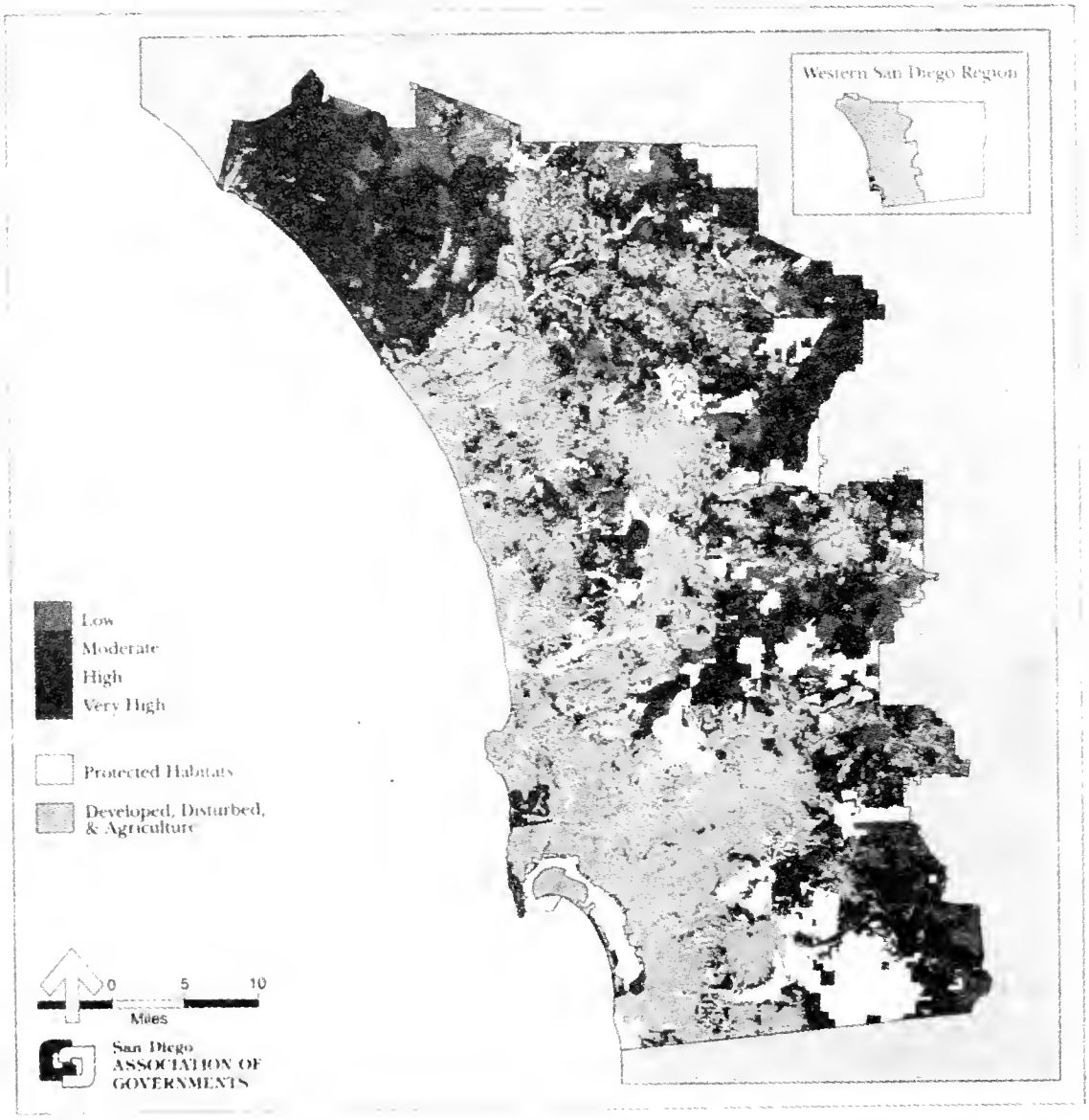
Map 3
HABITAT VALUE



Map 4
LAND OWNERSHIP AND PRESERVES



Map 5
HABITATS AT RISK



Map 6
PROTECTED HABITATS

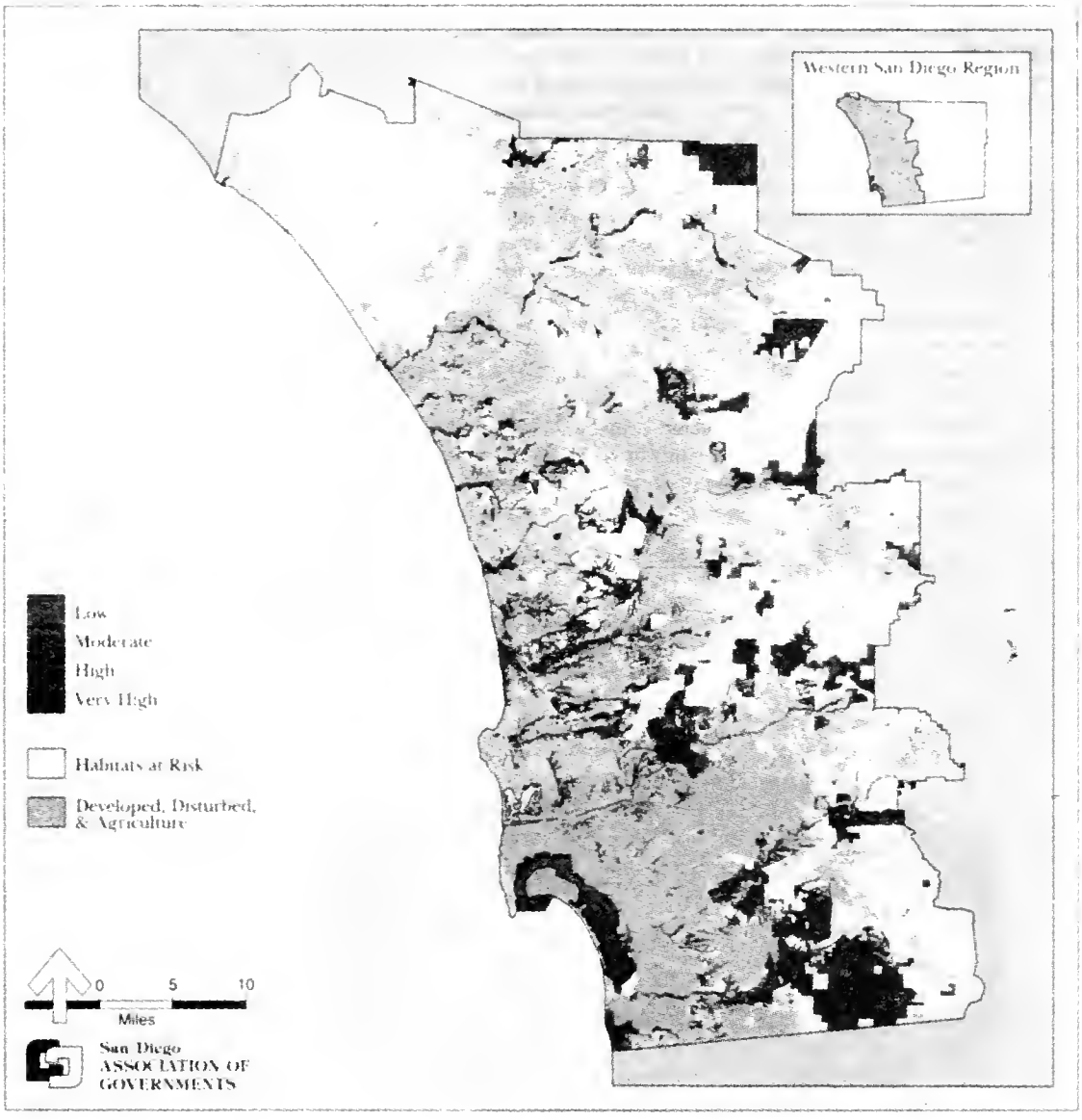


Figure 3 and Map 3 illustrate the habitat value of natural areas in the western region as determined by the Habitat Evaluation Model. Of the remaining natural habitats in the western region, almost two-thirds are shown to be of very high or high quality (43 percent very high and 22 percent high).

As shown in Map 3, there are still some very valuable habitat areas left in the western half of the study area (i.e., the area west of Interstate 15 and Interstate 805). It will be critical to maintain and preserve these remaining coastal vegetation types or they will be lost forever. Creating and maintaining linkages between these areas and larger blocks of habitat to the east is crucial. North-south corridor development will be more challenging as there is not much opportunity due to extensive existing development. The eastern half of the study area provides larger, contiguous blocks of habitats, or core areas, as opportunities for inclusion in a habitat preserve system. Many of these areas contain highly valuable habitats. It is not necessary for all the highly valued habitats to be protected in order to create a viable habitat preserve. Indeed, some of the moderate and low valued habitats will need to be preserved in order to get an interconnected preserve. The natural areas in the northern half of the study area (MHCP) tend not to be rated as very high because of their fragmentation.

Figure 3
HABITAT EVALUATION MODEL RESULTS (HABITAT VALUE)
Western San Diego Region
(Natural Habitat Areas)

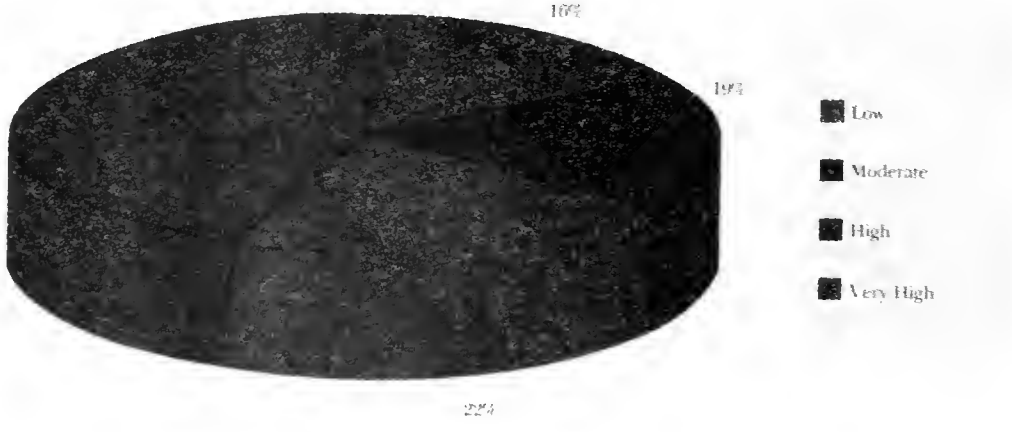


Table 2 shows the habitat value of the vegetation communities for the western portion of the San Diego region. As would be expected, each of the habitat value categories are dominated by the three most common vegetation types that occur in the study area: chaparral, coastal sage scrub, and grasslands. Over 75 percent of the rare habitats (dunes and beaches, southern maritime chaparral, water and marshes, oak woodlands, and riparian) are included in the very high and high categories of habitat value. All of the riparian habitats fall into the very high category. Eighty percent of the coastal sage scrub and 72 percent of grassland vegetation are in the very high and high habitat value categories. Because chaparral is a widespread vegetation community in the western region, only 40 percent was rated as very high and high valued. Because eucalyptus woodlands are a non-native natural vegetation community, the model ranked 85 percent of the eucalyptus

Table 2
HABITAT EVALUATION MODEL RESULTS BY AGGREGATED VEGETATION TYPES
Western San Diego Region
(Natural Habitat Areas)

Natural Habitats	Habitat Value				
	Very High (acres)	High (acres)	Moderate (acres)	Low (acres)	Total (acres)
Dunes and Beaches	1,181	345	261	255	2,042
	58%	*17%*	*13%*	*12%*	*100%*
Coastal Sage Scrub and Chaparral	4,026	6,880	5,741	4,231	20,877
	19%	*33%*	*28%*	*20%*	*100%*
Coastal Sage Scrub	125,696	42,124	38,206	2,706	208,732
	60%	*20%*	*18%*	*1%*	*100%*
Chaparral	40,196	53,663	53,762	85,765	233,386
	17%	*23%*	*23%*	*37%*	*100%*
Southern Maritime Chaparral	2,542	643	144	60	3,389
	75%	*19%*	*4%*	*2%*	*100%*
Grassland	48,989	30,090	20,362	9,887	109,329
	45%	*27%*	*19%*	*9%*	*100%*
Water and Marshes	8,624	3,948	2,491	933	15,996
	54%	*25%*	*15%*	*6%*	*100%*
Oak Woodlands	22,526	8,316	4,525	1,344	36,711
	61%	*23%*	*12%*	*4%*	*100%*
Riparian Scrub, Woodland, Forest	35,466	6	<1	<1	35,472
	99%	*<1%*	*<1%*	*<1%*	*100%*
Coniferous Forest	9,962	970	501	25	11,458
	87%	*9%*	*4%*	*0%*	*100%*
Eucalyptus Woodlands	185	447	1,121	1,880	3,634
	5%	*12%*	*31%*	*52%*	*100%*
San Diego and Mission Bay	1,683	2,119	6,314	4,465	14,582
	11%	*15%*	*43%*	*31%*	*100%*
TOTAL	**301,076**	**149,551**	**133,428**	**111,553**	**695,608**
	43%	*22%*	*19%*	*16%*	*100%*

(Totals may not add due to rounding.)

woodlands as moderate or low in habitat value. The habitat values associated with San Diego and Mission Bays may be artificially low because data collection efforts and the Habitat Evaluation Model focused primarily on terrestrial habitats. But these aquatic areas, particularly the shallow water and intertidal areas, do provide important habitats for many species such as shorebirds, fish, and invertebrates.

LAND MANAGEMENT DATA BASES

In addition to biological information, land management layers are also developed in order to evaluate how well the biological resources are protected by current land use planning polices. Land management layers include; future land use plans (from local General and Community Plan Land Use Elements), land ownership, existing preserves, local policy constraints to development and average land value.

As part of the MSCP and MHCP studies, information on land ownership (particularly open space or habitat preserves) is obtained from local jurisdictions. The generalized data base contains land ownership information for various local, state and federal agencies, as well as the identification of lands which are in private ownership.

SANDAG maintains data bases on each community's General or Community Plan. The land use designations depict how land is planned for the future. Since each Plan's land use element has its own classification system for future land use designations, they have been consolidated into a common classification scheme. Information on local policy constraints to development also are collected from each jurisdiction. Types of policy constraints which can prohibit or limit development can include floodplains, wetlands, riparian habitats, and steep slopes.

Land value information is being used in conjunction with the planned land use layer to help estimate potential acquisition costs.

Figure 4 and Map 4 illustrate land ownership and preserve patterns for the remaining natural habitats in the western San Diego region. Fifty-six percent of habitat areas are privately owned and only a very small proportion of privately held lands are currently set aside as habitat preserves.

Almost 32 percent of the remaining natural habitats are owned by federal agencies such as the Department of Defense, various Native American tribal councils, Cleveland National Forest (CNF) and the Bureau of Land Management

Figure 4
LAND OWNERSHIP AND PRESERVES
Western San Diego Region
(Natural Habitat Areas)

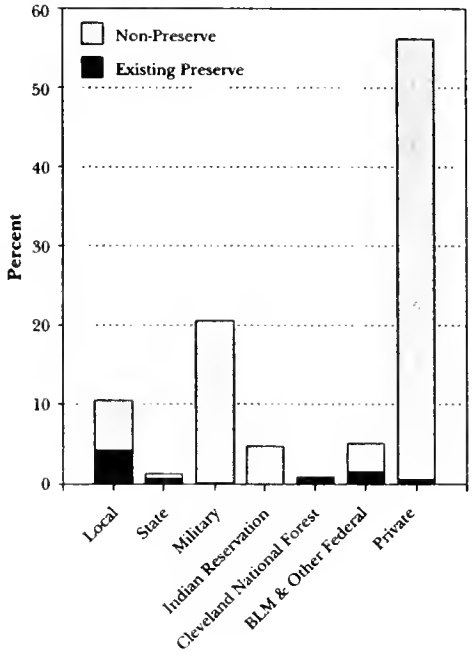
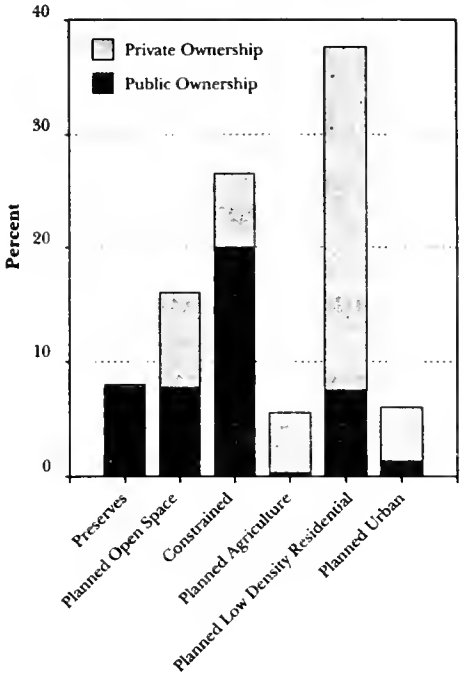


Figure 5
LEVEL OF PROTECTION AND LAND OWNERSHIP
Western San Diego Region
(Natural Habitat Areas)



(BLM). The military alone owns slightly over 20 percent of habitat areas, with Camp Pendleton, Fallbrook Weapons Annex and Miramar Naval Air Station comprising significant proportions of the undeveloped land in the study area. Ten percent of habitat areas are owned by local public agencies, and slightly over one percent are owned by state agencies. Almost all of the CNF lands in the study area are currently designated as open space or habitat preserves. About one-third of BLM land and roughly half of the state and locally owned lands are dedicated to open space or habitat preserves. As part of the federal commitment and cooperation in the local habitat planning efforts, the BLM has entered into an agreement with the local programs which states that they will contribute their land holdings to the habitat preserve system where necessary. This will be of great significance to the County's habitat conservation program in the eastern half of the San Diego region where large tracts of BLM lands are located.

Map 4 displays land ownership information for the natural areas in the western region. As shown, public lands alone are not sufficient to produce a viable habitat preserve system. In addition to not providing enough acreage, the public lands in the western region are typically smaller in size and are not well interconnected. The existing preserves are also very isolated.

Since it is apparent that public lands alone are not going to build a viable habitat preserve, private land contributions have been evaluated. Land ownership, planned land use and constraints to development are combined to create a relative measure of land use protection. The protection categories are hierarchical, ranging from the highest protection type (existing preserves) to categories which offer the least assurances for habitat protection (planned for urban development). Figure 5 shows, for the natural habitat areas only, the proportion of the natural resources within each type of land use protection. The first two categories, preserves and planned open space, offer the most assurance for habitat protection. If current planning policies remain, the constrained land category can provide some protection to natural resources. The last three categories are incompatible with a preserve system because they represent lands which are planned for future uses (agriculture, low density residential and urban development). Figure 5 also indicates the public and private ownership components of each level of land use protection. In general, public lands provide a higher assurance of protection of resources than do private lands.

The preserve status affords the highest level of protection to natural resources. These provide the greatest opportunities

for inclusion in a habitat preserve and should become cornerstones. Even privately owned preserves can be considered a high level of resource protection. Unfortunately, only eight percent of the natural resources within the western region are designated as preserves, and the bulk of these are provided by public lands.

An additional 16 percent of the natural areas in the western region are planned for open space uses. Almost equal proportions of the open space designations are on public and private lands. General and Community Plan future land use designations of open space may offer some degree of protection to natural resources but not as much as that provided by preserves. Long term assurances cannot be assumed since these land use designations are subject to change. Also, open space designations in some plans allow uses such as golf courses, landscaped greenbelts, tennis courts and parking lots which are not conducive to preserve systems. Depending upon their location, some of these uses may be suitable for wildlife corridors and as buffers between developed and natural areas, but they have little value as wildlife habitats.

Lands constrained from development by local planning policies could be considered as affording some measure of natural resource protection. But, as with the planned land use category of open space, these constraints could be removed and the land allowed to develop. Almost 27 percent of the natural resources in the western region currently have policies which constrain them from development. The majority of constraints are on public lands.

Almost 50 percent of the natural areas in the western region are planned for development or agricultural uses, the bulk of which are planned for low density residential development. Thirty-eight percent of the remaining natural habitats are planned for low density residential uses, six percent are planned for agricultural uses, and another six percent are planned for urban uses. These types of land use plans are incompatible with a preserve system. Depending upon their location and habitat value, some areas planned for development could be critical in terms of protecting habitats and in designing habitat preserves and corridors. The bulk of the lands planned for development are privately owned.

GAP ANALYSIS

Combining biological information with land management information helps to identify opportunities and conflicts in designing a habitat preserve system. Gap Analysis highlights areas of high biological diversity or habitat value that are

Unfortunately, only eight percent of the natural resources within the western region are designated as preserves . . .

currently being protected, and identifies "gaps" where conservation efforts should be focused to prevent habitat fragmentation. To minimize the cost of a habitat preserve, it would be beneficial to build upon current opportunities, i.e. public lands, areas which are already protected, or areas planned for protection. Typical Gap Analyses used in other areas have only looked at land ownership data in determining gaps in natural resource protection. The region's habitat conservation programs have expanded this tool to include additional land management information such as future land use plans, local policy constraints to development, and existing habitat preserves, to not only identify gaps in preservation but also to highlight opportunities as well.

Tables 3 and 4 show the level of land use protection related to habitat value (as determined from the Habitat Evaluation Model) and to vegetation types. This information, along with maps showing the distribution of protected and non-protected natural areas, helps to evaluate how well current planning policies are protecting natural resources and to assist in designing a habitat preserve system.

Table 3 shows the level of land use protection related to habitat value. About 70 percent of the existing preserves are comprised of very high or high valued habitats indicating that the existing preserves are doing a good job of protecting valuable resources. Slightly over 70 percent of land planned for open space has very high or high habitat value. About half of the land planned for open space is in private ownership and may not be assured protection into the future. Over two-thirds of lands constrained from development have very high or high biological value. Most of these are publicly owned, thereby providing better assurances of preservation into the future. If these policies can be maintained into the future, these areas could provide contributions to a habitat preserve. Indeed, of the very high and high habitat valued areas, almost 55 percent are protected to some degree; although almost half of these are afforded limited protection within the constrained category. Only nine percent of the very high and high biological resources are in the preserve status, the highest level of protection. An additional 18 percent are planned for open space.

Forty-five percent of the very high and high valued natural areas are planned for some sort of development and are therefore afforded no habitat protection. The bulk of these areas are planned for low density residential developments. This conflict could pose the greatest concern for local jurisdictions in designing, adopting and implementing a habitat preserve.

Table 4 displays the vegetation communities and their level of protection for the western portion of the San Diego region. About half of coastal sage scrub and chaparral and nearly two thirds of grasslands are planned for development. Just 10 percent or less of these vegetation communities have the highest level of protection, preserve status. Roughly 10 percent are currently planned as open space and about one-quarter of these vegetation types are constrained from development under current planning policies.

Of the rarer vegetation communities in the western region, 34 percent of southern maritime chaparral, ten percent of water and marshes, 25 percent of riparian and 61 percent of oak woodlands have no protection. Just under 10 percent of riparian and oak woodlands are protected by preserves, compared to 19 percent of southern maritime chaparral and 31 percent of the water and marshes. Only five percent of oak

Table 3
LEVEL OF PROTECTION AND HABITAT EVALUATION MODEL RESULTS
Western San Diego Region
(Natural Habitat Areas)

Type of Protection	Habitat Value				
	Very High (acres)	High (acres)	Moderate (acres)	Low (acres)	Total (acres)
Preserve					
Public	27,323	12,727	8,456	6,294	54,799
Private	999	416	272	48	1,736
Subtotal	*28,323*	*13,143*	*8,727*	*6,342*	*56,535*
Planned Open Space					
Public	29,264	7,815	9,772	7,166	54,017
Private	29,654	12,938	10,879	4,215	57,686
Subtotal	*58,918*	*20,754*	*20,651*	*11,381*	*111,703*
Constrained					
Public	68,166	27,984	23,498	19,704	139,352
Private	21,581	8,558	9,603	5,814	45,556
Subtotal	*89,746*	*36,542*	*33,101*	*25,518*	*184,907*
Planned Agriculture					
Public	1,059	452	228	107	1,846
Private	12,909	9,851	8,273	5,910	36,942
Subtotal	*13,968*	*10,303*	*8,501*	*6,017*	*38,788*
Planned Low Density Residential					
Public	30,251	11,079	7,063	3,889	52,281
Private	61,055	49,177	46,999	52,469	209,700
Subtotal	*91,306*	*60,256*	*54,062*	*56,358*	*261,981*
Planned Urban					
Public	3,459	2,236	1,812	1,694	9,201
Private	15,357	6,319	6,574	4,243	32,493
Subtotal	*18,816*	*8,554*	*8,386*	*5,937*	*41,693*
Total					
Public	***159,521***	***62,292***	***50,829***	***38,854***	***311,496***
Private	***141,555***	***87,259***	***82,599***	***72,699***	***384,112***
TOTAL	**301,076**	**149,551**	**133,428**	**111,553**	**695,608**

(Totals may not add due to rounding.)

woodlands are planned to remain in open space, while 20 percent of riparian habitats and over 30 percent of water, marshes, and southern maritime chaparral habitats are planned for open space under current plans.

Using GIS and the Gap Analysis tools, the natural areas in the western region can be split apart to show the distributions and habitat value of natural areas at risk and those which are afforded some protection. Map 5 shows the habitat value for habitats considered at risk, and Map 6 illustrates the habitat value of natural areas which are afforded some degree of protection. For these maps, the land use protection categories

Table 4
LEVEL OF PROTECTION AND AGGREGATED VEGETATION
Western San Diego Region
(Natural Habitat Areas, in Acres)

Type of Protection	Dunes and Beaches	Coastal Sage Scrub and Chaparral Mix	Coastal Sage Scrub	Chaparral	Southern Maritime Chaparral	Grassland	Water and Marshes	Oak Woodlands	Riparian Scrub, Woodland, Forest	Coniferous Forest	Eucalyptus Woodlands	San Diego and Mission Bay	TOTAL
Preserve													
Public	419	466	14,191	23,099	659	2,812	4,794	2,760	2,878	2,502	174	46	54,799
Private	5	1	621	699	0	59	145	20	175	0	10	0	1,736
Subtotal	*423*	*467*	*14,812*	*23,799*	*659*	*2,871*	*4,938*	*2,780*	*3,053*	*2,502*	*184*	*46*	*56,535*
Planned Open Space													
Public	55	295	11,263	17,616	192	2,407	2,118	379	2,430	4,829	211	12,221	54,017
Private	134	653	24,375	14,587	848	7,341	3,083	1,410	4,787	189	249	32	57,686
Subtotal	*189*	*948*	*35,638*	*32,203*	*1,040*	*9,748*	*5,200*	*1,789*	*7,216*	*5,018*	*461*	*12,253*	*111,703*
Constrained													
Public	728	10,979	43,348	38,635	81	22,859	2,832	5,625	9,787	2,226	100	2,151	139,352
Private	45	573	14,786	11,193	456	5,546	1,396	4,071	6,707	256	449	78	45,556
Subtotal	*773*	*11,553*	*58,134*	*49,828*	*537*	*28,405*	*4,228*	*9,696*	*16,494*	*2,481*	*548*	*2,229*	*184,907*
Planned Agriculture													
Public	0	28	282	664	0	596	155	34	87	0	0	0	1,846
Private	0	1,590	10,614	12,300	0	6,951	248	3,702	1,194	130	213	0	36,942
Subtotal	*0*	*1,618*	*10,896*	*12,964*	*0*	*7,547*	*403*	*3,736*	*1,281*	*130*	*213*	*0*	*38,788*
Planned Low Density Residential													
Public	205	925	15,607	5,797	1	24,283	519	2,444	2,332	131	33	5	52,281
Private	0	4,919	59,098	100,122	413	22,389	258	15,787	4,056	1,187	1,471	0	209,700
Subtotal	*205*	*5,844*	*74,704*	*105,919*	*414*	*46,672*	*778*	*18,231*	*6,388*	*1,317*	*1,504*	*5*	*261,981*
Planned Urban													
Public	403	163	2,444	3,315	121	2,076	205	58	169	0	206	41	9,201
Private	48	284	12,104	5,359	618	12,008	244	422	871	9	518	7	32,493
Subtotal	*451*	*447*	*14,547*	*8,674*	*739*	*14,085*	*449*	*480*	*1,040*	*9*	*724*	*48*	*41,693*
Total													
Public	***1,810***	***12,857***	***87,134***	***89,127***	***1,055***	***55,034***	***10,622***	***11,300***	***17,683***	***9,688***	***723***	***14,464***	***311,496***
Private	***233***	***8,021***	***121,598***	***144,260***	***2,334***	***54,294***	***5,374***	***25,411***	***17,789***	***1,770***	***2,910***	***117***	***384,112***
TOTAL	**2,042**	**20,877**	**208,732**	**233,386**	**3,389**	**109,329**	**15,996**	**36,711**	**35,472**	**11,458**	**3,634**	**14,582**	**695,608**

(Totals may not add due to rounding.)

of preserve and planned land use are considered to provide protection to natural resources. The remaining categories, constrained lands, planned agriculture, planned low density residential and planned urban, identify the habitats at risk. As these maps illustrate, the current opportunities for a habitat preserve based solely on natural resources protected to date would not provide all the areas needed for the preserve system. In addition to not having enough acreage, the protected habitats are highly fragmented and are not interconnected to allow for wildlife movements. Efforts to construct a habitat preserve system will have to include private lands which are currently planned for development.

HABITAT PRESERVE DESIGN

Information from the biological, land management, and economic data bases and the Gap Analysis tools are used to assist in the design and evaluation of a habitat preserve system. Designing a habitat preserve is an iterative process and involves the cooperation of, and interaction between, local jurisdictions and the resources agencies. Biological evaluations of preserve alternatives include both tabular and spatial analysis. Information evaluated includes the total number of acres within the preserve as well as the percent of the habitats and species protected. Spatial evaluations include the sizes and shapes of habitats protected and how well they are interconnected or linked. The proportion of the preserve configuration represented by public and private lands is also evaluated as part of the economic analysis. Once a biologically viable habitat preserve is developed, the economic analysis becomes critical to help determine the fiscal feasibility of the preserve. Using the planned land use and land value information, costs associated with preserve alternatives can be estimated.

In addition to the technical work involved in designing habitat preserves, there are also various committees devoted to defining policies, implementation strategies, and maintenance procedures associated with habitat preserves. It is recognized that the habitat preserve will be built over a number of years. Therefore, these policy committees also must define interim strategies for protecting habitats within the preserve boundaries. Since the preserve will cross political boundaries, it is important to have all agencies in agreement on the issues related to preserving and maintaining the habitat preserve into the future. Ultimately the state and federal resource agencies will have to approve the preserve system. They will need assurances that the system is biologically sound and will work institutionally.

STATUS OF HABITAT CONSERVATION PROGRAMS

Work efforts in the habitat conservation programs are phased. Phase I involves the mapping of all biological resources and land management layers and evaluating habitat quality. Phase II involves the delineation of the habitat preserve, and designing implementation, acquisition, and funding strategies for the preserve.

The MSCP began in July 1991 and the MHCP began approximately one year later. Both the MSCP and MHCP are in Phase II work programs. Local jurisdictions are defining habitat preserves. These preserves will be evaluated for each of the program's study areas and in conjunction with one another in order to evaluate a preserve for the western region. The County's MHCOS is still in the Phase I data development stage.

The State of California Natural Communities Conservation Program (NCCP) is intended to be a state level multiple habitat conservation program. Currently, it is a pilot program with coastal sage scrub as its focus. The state has signed agreements with the MSCP, MHCP and MHCOS which declare that these programs follow the NCCP guidelines and are recognized and accepted as NCCP subareas.

RELATED DOCUMENTS

MSCP Volume 1, MSCP Plan.
Volume 2, Biological Resources.
Volume 3, Land Use and Implementation.

MHCP Draft Executive Summary.

MHCP Draft Habitat Evaluation Model documentation.

SANDAG's ***INFO*** Series

SANDAG's Published Map Series (Existing Land Use, Planned Land Use and Land Ownership).

Habitat Evaluation Model

The Habitat Evaluation Model (HEM) is comprised of four components or sub-models. Each sub-model has a different and separate focus. The model is raster-based (pixel or cell-based) which allows more complex situations, such as evaluating adjacent or neighboring habitats or landscapes, to be modeled. In the HEM, the study area is represented by a matrix of 100' by 100' cells, each representing roughly .23 acres. Each cell contains biological and land management information necessary for modeling and analysis.

One component of the HEM is the California Gnatcatcher Habitat Evaluation Model. It evaluates habitat quality parameters of coastal sage scrub vegetation, the habitat of the California gnatcatcher. Coastal sage scrub patches that are large in size and circular in shape are better for long term carrying capacity than are long, skinny, linear patches (even though they may be of significant size). Also, the coastal sage scrub habitats preferred by the gnatcatcher are on slopes less than 40 percent and below 950 feet in elevation. Therefore, slope, elevation, and the size and shape of coastal sage scrub habitats were examined in this model. In addition, core gnatcatcher population areas were delineated by local biologists who are familiar with gnatcatcher populations and their distributions. These core areas are defined as large coastal sage scrub habitats which are known to support more than 20 pairs of gnatcatchers. Preserving these core areas into the future is deemed to be essential in maintaining viable gnatcatcher populations into the future. High scores were assigned to coastal sage scrub patches meeting all of the habitat quality criteria, and very high scores were assigned to high areas which were also inside a core gnatcatcher population zone.

The second sub-model is called the Habitat Value Index. It evaluates general habitat quality criteria for all habitat types, including coastal sage scrub. This model looks at habitat parameters such as the amount of edge within a specified radius (the amount of habitat that borders developed, disturbed or agricultural land, which is a negative indicator of habitat quality), the amount of inter-habitat interface (ecotone) within a half mile radius, the diversity of habitats (number of habitats) within a half mile radius, the rarity of the habitat in the study area, and the habitat's potential to support species of concern (threatened and endangered keystone species). In addition, the presence of soils that support sensitive plant species and the presence of animal micro-habitat features were considered to be positive indicators of habitat quality. Higher scores were awarded habitats with the greatest number of desirable habitat traits.

The last two sub-models are the High Priority Target Species and Vernal Pool Habitat Model and the Potential Wildlife Corridor Analysis Model. The first of the two models uses the vernal pool and sensitive species location layers. High priority target species include all federal and state listed species, Category 1 species and species proposed for listing. The gnatcatcher is excluded from this sub-model because its habitat was evaluated in its own model. In addition, since the golden eagle is an indicator of habitat stability, eagle nest sites were also used in the model. Individual species sightings were buffered to account for potential inaccuracies in the geographic positioning of sighting location. The presence of a target species, vernal pool or eagle nest sites yielded positive habitat values and the presence of all three yielded the highest possible scores.

The Potential Wildlife Corridor sub-model simply used all riparian vegetation types (Riparian Woodland, Riparian Scrub, Riparian Forest, and Oak Riparian Forest) as preliminary indicators of potential wildlife corridors. This model is the weakest component of the Habitat Evaluation Model because the study of wildlife corridors and their design requirements is a relatively new field in biology. There is not a lot of information on criteria necessary for wildlife corridors and these criteria can be species dependent. Therefore, it should be noted that this model is limited in scope to movement corridors only and as such does not address the issue of dispersal and movement of all species. Very high habitat values were assigned areas with riparian vegetation.

The resultant scores from the four sub-models were combined to yield composite habitat values. For the purposes of planning and analysis, the distribution of scores were divided into quartiles and assigned the relative habitat quality values of very high, high, moderate, and low.

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INFO

INFO is a publication presenting statistical information produced as part of the San Diego Association of Governments' overall planning program. The series, published every other month, contains current estimates and forecasts of population, housing, employment, land use, and other planning data as well as occasional reports on subjects of general interest. This report is financed with federal funds from the U.S. Department of Transportation, state funds from Caltrans, and local funds from SANDAG member jurisdictions.

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Future Issues of INFO

Profiling the Region's Major Statistical Areas

Prior to the 1970 Census, geographic areas called Major Statistical Areas (MSAs) were identified locally. These seven areas are groups of census tracts that distinguish major communities in the region. While the boundaries of many other geographic areas, such as cities, have changed over time, those of MSAs have not. This makes it possible to analyze changes within each MSA as well as to compare changes among all MSAs. This *INFO* will discuss the current and historic demographic, economic, and physical make-up of each MSA and the region.

Census Transportation Planning Package

1990 Census tabulations include this file that provides commute characteristics of the region's workers. This *INFO* will highlight information from the CTPP, including work trip origin-destination information, demographic characteristics about people at their place of work, and comparisons to 1980.

Acknowledgements:
SANDAG would like to acknowledge the work done by the GIS and biological consultant teams from the City of San Diego Metropolitan Wastewater System Multiple Species Conservation Program (MSCP) and the North County Wildlife Forum Multiple Habitat Conservation Program (MHCP). The MSCP consultants include Ogden Environmental and Energy Services, San Diego State University and SourcePoint (SANDAG's non-profit corporation). The MHCP consultant team includes Dudek and Associates, the County of San Diego, and SANDAG. Without their work efforts, expertise and cooperation, information for this *INFO* would not have been possible.

On the Cover

The cover map contrasts the patterns of developed landscapes with those areas which are covered by natural vegetation. The San Diego region is preparing coordinated multiple species and multiple habitat conservation plans. They are designed to balance the need for economic growth and development in the region with the need to protect the area's biodiversity of species and their habitats.

STATEMENT OF LINDELL L. MARSH

INTRODUCTION

Chairman Kempthorne, Senator Reid and other members of the Subcommittee, I am Lindell Marsh, a partner in the law firm of Siemon, Larsen & Marsh. I appreciate the opportunity to discuss with you what we are learning from a unique national dialogue process focused on exploring the development of a "funding framework" for the conservation of biodiversity in urbanizing regions of the Nation under the Endangered Species Act ("ESA") and, to an extent, under the Clean Water Act. ("CWA")[1]

The Funding Framework Dialogue

The "Wildlife Conservation/Economic Development Dialogue Process" (the "Dialogue") is a year long facilitated national discussion among the affected multiple stakeholders, co-sponsored by "GMI" and the Environmental Law Institute ("ELI"), and directed by three facilitators, each with a different perspective: development, conservation and local/state government. In my law practice, I have primarily represented landowners and developers (although I have increasingly been involved in neutral facilitated processes).[2] The other two facilitators are Dr. John DeGrove, the Director of the FAU/FSU Joint Center for Environmental and Urban Problems in Fort Lauderdale, Florida and Michael Bean, legal counsel for the Environmental Defense Fund in Washington, D.C.

Bringing adversarial stakeholders together to dialogue has a history, and is timely. There are now more than 20 examples in recent years where wildlife preservation has been worked out so as to be compatible with economic development by bringing these interests into a collaborative planning process. The funding framework Dialogue builds on these successes. Two sessions of the Dialogue have occurred in: Washington, D.C. and San Diego, California (in April). The remaining sessions are scheduled for Texas (September 15) and Florida (September 18, tentative), with a final session scheduled for the Smithsonian Institute, Washington, D.C., in October.

What the Dialogue is and is not about

The objective of the Dialogue is to explore within the national constituency of affected interests the questions of how we should allocate the burden and pay for the conservation of biodiversity within urbanizing areas of the nation. It is *not* to debate the level of wildlife protection or the regulatory aspects of the program. The questions of how we pay for conservation would continue even if the ESA and CWA were to be repealed, and, arguably, would become even more important to answer. Accordingly, within the Dialogue, there is a great deal of commonground underlying this issue. It also does not address issues relating to fisheries, timber or agriculture (except as they relate to urbanization), although it is acknowledged that these are important topics.

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[1] In brief time available for preparation of this testimony, I provided an early draft to the more than 150 persons (economic development and conservation interests and local, State and Federal agencies) on the Dialogue list. The revised draft reflects discussions with respondents. The following have provided letters of comment, which are enclosed, or have otherwise indicated support for the general tenets of this testimony: the Growth Management Institute, the Environmental Law Institute, the Defenders of Wildlife, the Environmental Defense Fund, National Audubon Society, the Southern California Building Industry Association, California Building Industry Association, the San Diego Building Industry Association, the City Manager's office of the city of Austin, Texas, 1000 Friends of Florida, the Newhall Land and Farming Company, the Fieldstone Company, the Endangered Habitants League, the San Diego Association of Governments, the Riverside County Habitat Conservation Agency, and the Resources Agency of California. We anticipate further indications of support prior to the hearing. Further, I believe and trust that this testimony is a fair representation of the broad constituency of interests involved in the Dialogue, as well as a detailed point-by-point consensus with both Dr. DeGrove and Michael Bean, the other facilitators of the Dialogue process.

[2] In my practice, and in this facilitation role, I have generally represented the landowner/development viewpoint (although increasingly, I have been involved in facilitated collaborative planning processes). In 1983, I was special counsel for a joint venture of Amfac and Foremost McKesson with respect to the San Bruno Mountain Habitat Conservation Plan process that resulted in Section 10(a) of the Endangered Species Act ("ESA"). More recently, I have acted as special counsel for Union Oil Company of California with respect to the first habitat conservation plan for the threatened California Gnatcatcher and The Fieldstone Company in connection with the Fieldstone/Carlsbad Habitat Conservation Plan, the most recently approved Habitat Conservation Plan (HCP) and the first component of the California Natural Community Conservation Plan ("NCCP") for the California Gnatcatcher and coastal sage scrub habitat. I have represented landowners and developers with respect to a number of other habitat conservation planning efforts in California and other regions of the country.

So, what we are learning?

We are learning that:

- There is a broad and growing consensus that a "funding framework" is the most critically needed step toward resolving the perceived economic development/ wildlife conservation conflict, at least with respect to urbanizing areas. Those who would argue for less regulation suggest that the existence of a funding framework will make regulation unnecessary. On the other hand, those who argue for more regulation suggest that a funding framework will ameliorate the adverse effects of the regulation. Designing and establishing an adequate funding framework will speak to both perspectives and, in fact, will resolve much of the underlying conflict.
- The cost of wildlife conservation in urbanizing areas is not large if shared by the broad constituency of interests. Several years ago, based on a "back of the envelope" guess, a small group of us concluded that the cost of conservation in urbanizing Southern California[3] would be relatively modest over an extended period of time—generally in the range of one or two B–2 bombers or the rebuilding of the Woodrow Wilson bridge over the Potomac, not a great deal of money in the future of the region (the 11th largest economy in the world)—*provided* that the cost is shared broadly by the constituency of interests. On the other hand, if the entire cost is allocated to only one of the constituent interests, such as new economic development or to current local tax payers, it becomes unbearable and in turn adversely affects all of the involved interests. Wildlife conservation is of shared local, State and national significance and, if shared by these broader interests (including new economic development), its cost is not large. By analogy, if historically the cost of the national highway, flood control, sewer, or water supply systems would have been allocated only to then new local development or then existing local or regional populations, the costs would have appeared large and unmanageable. In turn, failing to establish a funding framework for such purposes would have adversely affected our local, State and national economic well-being. From this perspective, it appears that the problem is not the amount of money required but our collective inability to design an efficient system for sharing the cost. We have argued about the problem rather than simply setting about to solve it.[4]
- The urbanization of the Nation pursuant to national settlement programs has been accompanied by a growing conservation deficit or debt. In the past, we have not adequately funded or provided for the conservation of biodiversity within the urbanizing areas of the nation. Our national settlement programs for highways, flood control facilities, sewer and water systems and ports, simply did not provide funding for the conservation of biodiversity as the direct and indirect impacts of these programs occurred. It has created, in effect, a growing shared conservation deficit or debt.
- By default the cost of conserving wildlife and biodiversity has been placed, project-by-project, on new development. The cost of failing to adequately anticipate and provide for the conservation of biodiversity by the local, State and Federal communities has fallen, by default, on the shoulders of new development projects (including public sector infrastructure), project by project. There is a newly emerging consensus (within the conservation as well as the development communities)[5] that this is unfair, inefficient, unnecessarily conflict producing, and inflationary. At the same time, conservation interests are unwilling, understandably, to allow wildlife and biodiversity to be lost—with the result that new

[3] Generally, the coastal terrace south of Los Angeles to the U.S./Mexico border and inland to western Riverside County.

[4] It is our hope that the cost of conservation with respect to Southern California, Texas and South Florida can be refined as part of the Dialogue project. There is currently, for example, a great deal of conflict regarding the specific amounts required and economic impacts with respect to the Multiple Species Conservation Program ("MSCP") for the southern half of San Diego County. However, my sense is that much of this controversy can be attributed to the politics of the debate and that if there is sufficient sharing of the costs among the constituency of interests and communities (local, State and Federal) involved, there is a broad consensus that the cost of conservation is manageable. It becomes large only when borne by a single interest or several interests such as new development or current local taxpayers.

[5] This consensus may be overstated. Within the conservation community, there is significant sentiment that the entire marginal cost of conservation should be borne by new development, even where past urbanization has failed to bear its share of conservation. See the accompanying letter from the Environmental Law Institute. This point will be further discussed in the Dialogue and refined.

development has been the funding vehicle by default, notwithstanding the results.

- The conservation of biodiversity within urbanizing regions is inefficiently addressed project-by-project and most efficiently and effectively addressed proactively, early and in an area-wide manner. Further to the last point, the project-by-project system of reconciling development and wildlife conservation has proven extremely inefficient within urbanizing areas and has contributed to a political backlash.[6] Not only are there project-by-project delays and a loss of economies of scale, but the cost of habitat increases as development within the region proceeds. There is broad agreement that addressing this problem proactively, early, and in a region-wide manner will result in significant cost savings and better results. However, such a region-wide approach will work and not collapse, only if an adequate funding framework can be established.[7]
- Wildlife conservation and biodiversity must be addressed in the context of the regional urban system, as a component of the infrastructure, with a view toward the efficiency of the region and growing regional economic competition. International competitiveness will increasingly pit region against region. Regional wildlife habitat is a key determinant of the viability of the urban system. It assures the quality of life demanded by a modern workforce and urban/suburban population. In order to support regional competitiveness, habitat should be incorporated into the regional setting as efficiently as possible and should be designed in conjunction with transportation, housing, utility and other urban or development components. While there is a cost associated with conservation, by addressing it in a strategic manner, together with other components of the system such as transportation and infrastructure, the resulting open space can contribute to the efficiency and value of the other components (in effect, partially offsetting and lowering the cost of wildlife habitat acquisition when viewed separately). The economically most competitive regions are those which plan for the interaction between people, economic development and anticipated environmental impacts synergistically and strategically.
- Finally, complex issues such as this can be addressed most effectively through collaborative planning processes that bring together all of the stakeholders. From the transformation that is taking place in the private sector away from command and control and toward more horizontal management structures, we are learning that complex issues (such as the reconciliation of economic development and conservation) and the competitiveness of our regions can be most effectively addressed by the learning of the stakeholders through collaborative processes. It provides a way to allow those affected by public policy to have a direct voice in making that policy and to cooperate with other affected interests in efficiently sorting out the complexity involved.

Emerging Principles

Based on this learning, there are several key principles that appear to be emerging from the Dialogue.

- *Conservation should be planned and funded as any other component of the regional urban system.* Conservation planning should take into consideration, among other things: the efficiency, economic well-being and competitiveness of the region as a whole.
- *Lands required for conservation pursuant to such plans should be designated as early as possible and in advance of urban encroachment.* This establishes clear expectations and provides assurances and predictability to both economic development and conservation interests.

---

[6] The recently completed Fieldstone/Carlsbad Habitat Conservation Plan covering 2,000 acres cost approximately $3.5 million to develop over a 5-year period. While it is difficult to estimate with precision, with a regional conservation plan in place, the processing costs to the landowner/developer would have been one-tenth of that amount, or less. The project cost of the HCP was estimated to be $12 to $15 million which may be passed on to the 2,200 expected homeowners. A major cost, however, not included in these figures was the inability of the Company, for several years, to renegotiate its land loan covering the property, and the extraordinary amount of high level executive time that was required to address the issue at the project level. In turn, the cumulative impacts of such delay are reflected in a deterioration in the economic well-being and competitiveness of the region as a whole.

[7] The Stephens' Kangaroo Rat Habitat Conservation Plan program is a case where there has been growing conflict generated primarily from the delays and frustration resulting from the lack of a funding framework, notwithstanding that economic development projects provided over $120 million toward conservation in the region. It is my understanding that another panelist will specifically address the cost savings resulting from such early regional conservation planning.

- *Early funding for acquisition*[8] *is the most important element of the funding framework.* Without early funding, it is extremely difficult to politically, if not legally, designate the conservation of privately owned lands as wildlife habitat. And without the designation of lands to be conserved, the entire process quickly degenerates into the costly and time consuming project-by-project approach that we are now trying to correct.[9]
- *The provision of such early funding is beyond the capacity of the existing populations of a region and, as with other elements of the regional urban system, should be a shared responsibility of the State and national communities.* For the reasons discussed above, the burden of conservation should be shared as any other element of the regional urban system of infrastructure (such as, for example, major highway, flood control, water and sewer facilities) among: new economic development; ultimate users; and, the existing and future local, regional, State and national communities. Of particular importance is the need for State and Federal support to provide funding for the early acquisition of lands.[10]
- *Case examples of successful collaborative planning among diverse stakeholders, around issues of the environment and economic development have provided learning for the future creation of regional funding frameworks. These successful cases indicate the importance of careful facilitation and attention to process design.*

While the detailed components of a specific "funding framework" for a particular area may vary, these general principles appear to be emerging from the early sessions of the Dialogue. It anticipated that the elements of a workable framework will be further evolved as the Dialogue progresses, with a final set of principles emerging in October from the final session at the Smithsonian Institute.

A Personal Note

A year ago, I testified before your predecessor Subcommittee suggesting that there were primarily three elements of the ESA that needed attention: assurances to economic development interests; better management of the program within the Department of Interior; and, most significantly, a funding framework. This testimony addresses the third element. Underlying all of these elements, however, is the need for processes that reflect the transformation that Peter Drucker and Tom Peters are documenting in the private sector. These new processes would allow us to address complex policy issues such as biodiversity in a less command and control and more "horizontal", collaborative manner. The San Bruno Mountain HCP provided us with a model of such a process with respect to the perceived economic development/biodiversity conflict. At the time, we thought its success was a fluke. It was not. The Dialogue process is based on this successful model: allowing multiple stakeholders to learn together and craft their own solutions: bottom-up/top-down, all together. It offers an evolving paradigm for a national policymaking process that is in keeping with the foundational principles of our nation regarding the paramount role of the individual. Yet it comprehends the need for a national policy regarding the conservation of our biodiversity. I welcome your continued interest in the Dialogue and what we are learning.

---

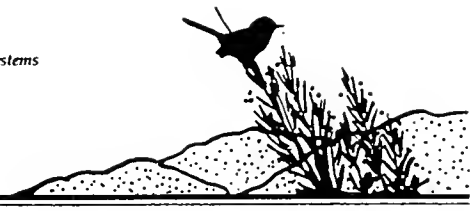
[8] Acquisition may be of fee title, a conservation easement, long-term lease or restrictions, as appropriate. The key is that the early designation of lands would fix expectations. It could also contemplate that the existing landowner could choose to continue to own the land and would not be required to sell, provided that the support for wildlife from the lands would remain unchanged. Any such acquisition should take into consideration the impacts on value of historic customary constraints and exactions.

[9] The distinction between an early once-and-for-all designation of lands to be conserved, as opposed to the project-by-project process, is similar to the difference between sorting your socks once, when they first come out of the dryer, and waiting to sort them pair-by-pair each morning as you prepare to put them on. Doing the job up-front avoids the repetitive sorting process. Something we all learned in kindergarten.

[10] It is my understanding that another panelist will address the funding issues relating to the Riverside County Habitat Conservation Plan. That HCP contemplated that the State or Federal Governments would assist in its funding. Economic development contributed over $120 million (through impact fees and project mitigation requirements). No funding was forthcoming from the State and Federal Governments (which was particularly important in the early phases of the program before development fee revenues were received). The economic development fees and revenues were insufficient to address the issue. The implementation of the plan was slowed dramatically. Local political antipathy mounted, creating significant resistance to any further conservation planning. The economic burden was simply too great for immediately available local funding.

ENDANGERED HABITATS LEAGUE
Dedicated to the Protection of Coastal Sage Scrub and Other Threatened Ecosystems

Dan Silver • Coordinator
8424A Santa Monica Blvd. #592
Los Angeles, CA 90069-4210
TEL/FAX 213 • 654 • 1456



July 22, 1995

Senate Committee on Environment and Public Works
Senate Office Bldg.
Washington, DC 20510

RE: Wildlife Conservation/Economic Development Dialogue Process

Honorable Senators:

Our organization is writing in support of the "Funding Framework" being developed by the Wildlife Conservation/Economic Development Dialogue Process. We have reviewed the testimony on this subject to be presented before your Committee, and find its case for proceeding with reliable financing strategies compelling.

Especially in regard to endangered species, the inadequacy of current funding mechanisms has been the limiting factor in resolving economic-environmental conflicts. The Dialogue Process is providing consensus-based solutions to these issues. Only with an effective funding framework in place, will it be possible to protect biodiversity, maintain rural economies, respect property rights, and ensure an orderly development process. These are goals central to our nation's future.

We urge your careful consideration of the recommendations which will arise from the Wildlife Conservation/Economic Development Dialogue Process.

Thank you for considering our views.

Sincerely,

Dan Silver

Dan Silver,
Coordinator

N E W H A L L   L A N D

July 31, 1995

Mr. Lindell L. Marsh
Siemon, Larsen & Marsh
Suite 350
19800 MacArthur Boulevard
Irvine CA 92715

VIA FAX: (714) 752-6804

Re: Testimony of Lindell L. Marsh
Funding Framework for Wildlife Conservation
In Connection With the Endangered Species Act

Dear Mr. Marsh:

The Newhall Land and Farming Company is a 112 year old company with approximately 100,000 acres in California and Arizona. We are developers of two major planned communities (in Valencia, California and Scottsdale, Arizona) and are one of the major agricultural companies in California.

It is our experience that property owners have increasingly had to bear the expense of wildlife conservation both in urban and agricultural regions. Yet, wildlife conservation is a benefit to the population at-large.

We would support a "funding framework" for urban wildlife conservation along the lines proposed in your testimony, which equitably distributes the costs of planning and preservation of wildlife resources and which gives due consideration to other equally important urban system elements.

Sincerely,

James M. Harter

James M. Harter
Senior Vice President
Newhall Ranch Division

JMH:mn

The Newhall Land and Farming Company 23823 Valencia Boulevard, Valencia, California 91355 (805) 255-4000

BIA
building industry association
of southern california, inc.

August 1, 1995

Mr. Lindell Marsh
Siemon, Larsen & Marsh
19800 MacArthur Boulevard, Suite 360
Irvine, CA 92715

Dear Mr. Marsh:

This letter provides comments to your testimony to the Senate Environment Committee on August 3, 1995 based upon my position as Chair of the California Building Industry Association Environmental Task Force and Chair of the Building Industry Association of Southern California's Endangered Species Task Force.

Federal funding is critical to the success of wildlife conservation programs such as the Southern California Natural Communities Conservation Plan (NCCP) pilot program. While our industry is supportive of the NCCP program in concept, and is actively working to implement the program as a means to better address endangered species conflicts, we believe it stands to fail because of the lack of funding.

For example, the cost of the Riverside County Stephen's Kangaroo Rat Habitat Conservation Plan (SKRHCP) and the Multiple Species Conservation Plan (MSCP) covering only one-third of San Diego County exceeds hundreds of millions of dollars. These are only two of the ongoing multispecies planning efforts in Southern California.

The Riverside County SKRHCP was prepared on the basis of commitments for equal financial contributions by local, state and federal levels. To date, only monies paid by landowners and new home buyers (the "local" component) has funded this program. State and Federal funding has failed to materialize. The program has exhausted the local ability to pay for wildlife conservation and yet more species are being listed by the federal government. The County's proposed multiple species plan, designed to meet the requirements of the Endangered Species Act, is impaired for the lack of funding.

Similarly, San Diego County's MSCP is in the planning process and is estimated to cost more than four hundred million dollars. Today, no feasible mechanism exists to fund this program.

The Funding Framework Dialogue highlights the critical need for federal funding. Without such commitment by the federal government, the Endangered Species Act will

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continue on its "train wreck" course of project-by-project, species-by-species crisis management. Congressional action to reliably fund multispecies planning programs such as NCCP, particularly by providing early funds for habitat acquisition, is essential to a workable Endangered Species Act.

Sincerely,

Edwin G. Sauls

The Resources Agency

Pete Wilson
Governor

of California

Douglas P. Wheeler
Secretary

FAXED 7-31

California Conservation Corps • Department of Boating & Waterways • Department of Conservation
Department of Fish & Game • Department of Forestry & Fire Protection • Department of Parks & Recreation • Department of Water Resources

July 31, 1995

Lindell L. Marsh, Esq.
Siemon, Larsen & Marsh
19800 MacArthur Blvd., Suite 350
Irvine, CA 92715

Dear Lindell,

Thank you for sharing with us the draft of your testimony to the Senate Environment Subcommittee on the critically important issue of funding of wildlife conservation in urbanizing areas. As you know, the State of California has made substantial progress in the development and implementation of ecosystem plans to manage habitat, with particular emphasis on the Natural Communities Conservation Planning process in Orange and San Diego Counties.

Most appropriately, your testimony identifies the importance of adequately funding the acquisition of habitat for this purpose. Although we will continue to utilize publicly-owned land whenever possible, it will of course be necessary to compensate private landowners in those instances when adequate habitat protection can be achieved only through outright acquisition of privately-owned land. I also agree with your assessment that such expenditures are analogous to public expenditures for other kinds of infrastructure; for this reason, Governor Wilson recently signed legislation which authorizes the establishment of local habitat assessment districts.

I am pleased that you will be able to share with the Senate Subcommittee a report on the progress to date of the Funding Framework Dialogue. It is an important project, and I look forward to working with you and other dialogue participants in identifying and expanding the means by which to achieve our goals for habitat conservation.

Sincerely,

Douglas P. Wheeler
Secretary for Resources

The Resources Building Sacramento, CA 95811 (916) 653-5656 FAX (916) 653-8102

California Coastal Commission • California Tahoe Conservancy • Colorado River Board of California
Energy Resources Conservation & Development Commission • San Francisco Bay Conservation & Development Commission
State Coastal Conservancy • State Lands Commission • State Reclamation Board

FRIENDSWOOD DEVELOPMENT COMPANY
P.O. BOX 2367
HOUSTON, TEXAS 77252-2367

July 31, 1995

Testimony to Senate Environment Committee,
August 3, 1995

Mr. Lindell L. Marsh, Esq.
Siemon, Larsen & Marsh
19800 MacArthur Blvd., Suite 350
Irvine, CA 92715

Dear Mr. Marsh:

Friendswood Development Company has reviewed your proposed testimony for presentation to the Senate Environment Committee on August 3, 1995 and would like to voice our support for your efforts. The Wildlife Conservation/Economic Development Dialogue Process seems to be growing into an effective vehicle to encourage meaningful discussion among a variety business, conservation and government/regulatory interest groups.

We feel that the Houston area would benefit greatly from a regional plan that would provide for conservation of wildlife and habitat and for economic growth and development. Any effort to develop such a plan would be meaningless without establishing an effective program for funding the conservation efforts as an integral part of the plan. Your efforts in bringing the groups together for discussion and the observations included in your testimony indicate that the Dialogue is a productive "bridge building" forum. We look forward to participating in the process. We strongly agree with the basic concept that a regional conservation plan will benefit existing communities as well as future growth. We also agree that the burden of developing and implementing such a plan should be shared by the many beneficiaries, not placed solely on new growth.

Sincerely,

Stephen D. Bost
Manager, Environmental Services

SDB/winword/env/sentstllm

National Audubon Society

Western Regional Office
555 Audubon Place
Sacramento, CA 95825
(916) 481-5332
(916) 481-6228 fax

27 July 1995

Mr. Lindell Marsh
Siemon, Larson & Marsh
19800 MacArthur Boulevard, Suite 350
Irvine, California 92715

Dear Lindell:

I am pleased to respond to your request for my comments, concerns, and support regarding your testimony on the "Funding Framework for Wildlife Conservation in connection with the Endangered Species Act." (I have read your draft of 7/17/95.) I support the effort and direction of your dialogue.

If we are to preserve America's biological diversity, it will, no doubt, take an investment of similar magnitude to our country's investment in developing the Interstate Highway System to implement a national transportation policy in the 1960's. Those were big dollars then, and they are even bigger dollars now. But it's a well-developed system that has served our country well. Your testimony, in my opinion, correctly suggests that wildlife habitat be identified and conserved as a infrastructure cost within the urban system.

Unfortunately, not many people are thinking with a big vision. For this reason alone, your dialogue can serve a catalytic function in building awareness and support for the pro-active approach to the conservation of biodiversity you are pursuing.

In the context of both preserving biological diversity and the Endangered Species Act, I believe we have a lose-lose situation--both for wildlife and for economic development interests. The current situation emphasizes single species, not multi-species nor habitats; redundacy not streamlining; regulatory versus collaborative, solution-oriented approaches; too much money spent on lawyers and consultants; and not enough on wildlife and habitat. The current situation is ripe for a new vision, which your dialogue can help create.

For the foreseeable future, federal funding is decreasing and the regulatory pendulum has swung as far as it will. A new vision needs to acknowledge this and offer durable solutions based on good science, collaborative buy-in by stakeholders, and incentives that encourage good planning and wise

stewardship, as well as public servants who can facilitate solutions. At the same time we must go beyond the "emergency room treatment" of the ESA to the next level "preventive healthcare"--restoring and sustaining all biodiversity for the benefit of humanity and our planet's life support systems.

To do this is a huge task. We will have to create a culture of conservation throughout the communities of America. Your dialogue is a constructive step in the right direction. My best wishes to your group and my thanks for the effort invested.

Sincerely,

Glenn

GLENN OLSON
Vice President

GO/co

cc/enc: John Flicker

THE MACCOBY GROUP
P.C.

Consultants for Strategic Development

Richard Margolies, Ph.D.
Vice President

July 28, 1995

Re: National Funding Framework Dialogue

Senate Environment Committee
United States Senate
Washington, DC

To Whom It May Concern:

I came to know Lindell Marsh, and the National Funding Framework Dialogue process that he has created, when he sought to discuss how best to facilitate and develop his ideas. His clarity, devotion, and innovative thinking was immediately evident, and I have worked with him since then developing the strategy for his ideas.

There are several features of this dialogue process which make it worthy of greater national attention, and of potential usefulness to your committee. First, this process brings together adversaries, including environmentalists, developers and other economic interests, and the various levels of government, and encourages them to move beyond their usual reflexive self-interest to an enlightened view of self interest. The dialogue process brings them into a shared planning relationship.

Second, this dialogue process builds on about thirty examples from around the country where these stakeholders have collaborated in resolving difficult endangered species issues so that economic development could proceed, while preserving the species in question without contentious litigation and delay.

Third, this dialogue process goes beyond those important successes. It explores how to create a funding mechanism model, that can be adopted regionally, to expand collaborative planning for the preservation of biodiversity, sustainable development, and livable environments.

Fourth, the resolution of the environment vs. economic development false contradiction makes good business sense, for everyone. Regions which can preserve their biodiversity and environments create a friendlier, less costly, and more attractive place for businesses to locate and grow, along with the employees who increasingly are the capital of our modern economy.

1700 K Street, NW, Suite 306 • Washington, DC 20006 • Tel: (202) 659-0402 • Fax: (202) 296-6640

Fifth, the refinement of the regional funding mechanism is timely in the heated climate of national debate that has arisen since the last election. It facilitates devolution of power from Washington to the states and regions. What is so interesting about Lindell Marsh's ideas is that they are supported by the various previously-contending sides, as they each seek a way out of their traditional adversarial approaches.

I recommend Lindell's work and testimony for your attention. I believe you will find it very relevant as you work on these important issues of how to sustain our growing national economy and a livable earth, both of which make up our shared patrimony.

Sincerely,

Richard Margolis, Ph.D.

Environmental Law Institute
1616 P St. NW
Washington, DC 20036
Telephone 202/328-5150
FAX 202/328-5002

July 28, 1995

Lindell Marsh
Siemon, Larsen & Marsh
19800 MacArthur Boulevard
Suite 350
Irvine, California 92715

Dear Lindell,

On behalf of the Environmental Law Institute, I am pleased to offer our support for the Funding Framework Dialogue for Wildlife Conservation and your testimony on behalf of the project. As you know, ELI is an independent educational institution located in Washington, DC whose mission is to advance environmental protection by improving law, management, and policy through research, publications, and dialogue. While we do not lobby, ELI policy research often plays a role in informing debates over key environmental issues.

Recent ELI research has focused in significant part on biodiversity protection in the United States and abroad. This research into the protection of sensitive ecosystems and wildlife habitat has revealed limitations in permit-by-permit regulatory programs and the need for broader landscape- or ecosystem-based protection approaches and a more flexible array of protection "tools". One key issue involved with multisectoral, regional planning processes is funding. Funding is needed for the planning process itself, participation by affected parties with meaningful opportunity for all sectors to be represented, and for acquisition of property, among other things. Determining how the burden ought to be shared among levels of government and between public, private and voluntary sources deserves concentrated dialogue.

The Institute has been pleased to co-convene the discussions of the Wildlife Conservation/ Economic Development Dialogue Process with the Growth Management Institute. We believe its focus on successful regional efforts to reconcile wildlife conservation and

economic development objectives will help provide a more substantial analytical basis from which to extrapolate principles of potential general applicability. In light of recent discussions about alternative approaches to the protection of endangered species and biodiversity generally, this dialogue is particularly timely. Your leadership on this issue is welcome and needed.

Sincerely,

Erik J. Meyers
General Counsel

Environmental Law Institute
1616 P St. NW
Washington, DC 20036
Telephone 202/328-5150
FAX 202/328-5002

July 31, 1995

Lindell Marsh
Siemon, Larsen & Marsh
19800 MacArthur Boulevard
Suite 350
Irvine, CA 92715

Via fax 714-752-6804
tel 714-752-1538

Dear Lindell,

I assume you received my letter by now regarding ELI's support for the Funding Framework Dialogue. As I indicated, ELI is not be design or operation an institution advocates for particular solutions. It point out advantages and disadvantages but, almost without exception, stops short of advocating one view over another.

Personally, I agree much of what you say except for a couple of points. However, because they may be critical points, our difference of opinion may be significant. On page 4, you make several points with which I am not completely in accord. I agree that it is unfair to place all of the burden for protecting biodiversity on new development but, in fact, it seems to make sense to burden new development more than existing development as a brake on the rate of "greenfield" conversions. That new public infrastructure (I assume you mean new roads, sewer capacity and the like) is burdened heavily certainly fair because that cost is spread widely over all taxpayers and discourages endless expansion of these systems while older portions deteriorate.

I recognize that you have called for improved planning to account for the lands needed for conservation purposes at the front-end of the land development process and agree that this would be an improvement. But reality and politics interfere too often with the functioning of good theory.I am all for improving the sharing of the burden for land planning and protection more equitably but fear that politicians would hear the first part of the message (unfair to have new development pay) and fail to hear the second part (have conservation costs paid as part of what all residents/ taxpayers pay for.) The Land and Water Conservation Fund is not being used now for new public land conservation/ acquisition despite revenues from off-shore oil production. Why would we believe this Congress will be different?

I realize you didn't ask for a speech but though you deserved

a more complete explanation for ELI's "position". ELI is happy to endorse wholeheartedly the project. The exploration of how best to get funding for the process of conservation is a vital element of what can actually happen.

Regards,

Erik Meyers
General Counsel

City of Austin

Founded by Congress, Republic of Texas, 1839
Municipal Building, Eighth at Colorado, P.O. Box 1088, Austin, Texas 78767 Telephone 512/499-2000

July 31, 1995

Lindell L. March, Esq.
Siemon, Larsen, Marsh
19800 MacArthur Blvd.
Suite 350
Irvine, CA 92715

Dear Lindell,

I am pleased that staff from the City of Austin is participating with you in the "Funding Framework Dialog" which is attempting to develop viable funding approaches for the conservation of wildlife. I understand that this effort is focused on developing a consensus on funding options to implement the Endangered Species Act from the perspective of those of us in the country who have been working to comply with the current Act. The following points reflect insight gained as a result of our own experience in dealing with the issues of preserving wildlife in a rapidly urbanizing area:

- A regional multi-species approach to the habitat planning provision of the Act [10(e)] is the preferred public policy over the development by development approach. A regional planning approach is more efficient in that it achieves economies of scale, broadens the economic base, and provides for a more biologically complete ecosystem approach.

- Funding for endangered species protection should allocate costs between new and existing development. Existing development has impacted wildlife without sharing the costs of conservation. This has left new development to face the full cost of protecting wildlife. Local regions should have flexibility to determine which funding mechanisms to use and how to equitably distribute the costs to all the beneficiaries of wildlife conservation.

- Initial applications of the Endangered Species Act were relatively simple because they dealt with single species in remote wilderness areas. Over time the application of the Act has become more complex as economic development expands into more sensitive natural areas. The development marketplace is just now beginning to adapt to the economics of conservation. A consistent emphasis on habitat conservation will allow a market response to emerge in each area of the Country where the Act applies and should provide each community the opportunity to develop its own unique economic solution.

Sincerely,

Jesus Garza
City Manager
City of Austin, TX

THE FAU/FIU JOINT CENTER FOR
ENVIRONMENTAL AND URBAN PROBLEMS

FLORIDA ATLANTIC UNIVERSITY

July 31, 1995

Lindell L. Marsh, Esq.
Siemon, Larsen & Marsh
19800 MacArthur Blvd., Suite 350
Irvine, CA 92715

Re: Testimony to Senate Environment Committee,
Thursday, August 3, 1995

Dear Lindell:

Finding new ways to reconcile the need to protect natural systems and thus conserve wildlife in urbanizing areas has never been greater or so urgent. I have become convinced through the work of our "Wildlife Conservation/Economic Development Dialogue process" to date that finding a sufficient and adequate funding framework to allow pro-active watershed and substantial habitat area protection must be accomplished.

In such an approach, the development community can be assured of timely and certain development approvals, which is the only way to resolve what is now an inefficient and ineffective case by case approach that is costly to the developer and does not achieve wildlife conservation goals.

One of your most important points is that we have not included wildlife conservation as an infrastructure cost in planning and developing urbanizing areas across the Nation. The resulting conservation deficit has been shifted largely to new development, and the result is constant conflict as we move forward with a project-by-project "system" of reconciling development and wildlife conservation. Neither environmentalists nor developers will achieve their goals unless we fundamentally alter our way of doing business.

I especially want to support your summary of emerging principles of a "funding framework" that can set the Nation on a new road in this matter. I believe that a collaborative dialogue among all the key stakeholders can and will allow the identification of lands to be conserved for wildlife protection, and establish a fair allocation of costs among the regional existing and future populations. Planning ahead instead of reacting in a deeply adversarial process is the key.

Please include my letter of support when you testify before the Senate Subcommittee.

Sincerely,

Dr. John DeGrove
Director

CBIA.
California Building Industry Association

1107 9th Street, Suite 1060
Sacramento, CA 95814-3605
(916) 443-7933
FAX (916) 443-1960

August 2, 1995

Mr. Lindell Marsh
Slemon, Larsen & Marsh
19800 MacArthur Blvd., Suite 360
Irvine, CA 92715

Dear Mr. Marsh:

The purpose of this letter is to provide comments to your testimony to the Senate Environment and Public Works Committee on August 3, 1995. These comments are based on my position as Chairman of the Environmental Issues Task Force of the California Building Industry Association and the Endangered Species Task Force of the Building Industry Association of Southern California.

Federal funding is critical to the success of wildlife conservation programs such as the Southern California Natural Communities Conservation Plan (NCCP) pilot program. While the building industry has been supportive of the NCCP concept and is actively working to implement this pilot program as means to better resolve endangered species conflicts, we believe the program is due to fail because of the lack of adequate funding.

These programs are incredibly expensive. The costs, for example, of the Stephens Kangaroo Rat Habitat Conservation Plan (SKRHCP) in Riverside County and the Multiple Species Conservation Plan (MSCP), which covers only one-third of San Diego County, are in the hundreds of millions of dollars. Even though the SKRHCP was prepared on the basis of equal financial contributions from local, state and federal sources, funds from state and federal governments failed to materialize. Only local funding, paid by landowners and new home buyers, has been available to finance this program. And despite the fact the program has now exhausted local resources available for wildlife conservation, more species are being listed.

The San Diego MSCP is still in the planning process, but its implementation is estimated to cost over four hundred million dollars. No feasible means exists to generate that amount locally. Both the San Diego program and the SKRHCP were designed to meet federal endangered species requirements, but both far exceed the capability of the local communities to finance them.

The Funding Framework Dialogue highlights the critical need for federal funding. Without such funding, we will have no choice but to resort to the historical project-by-project, species-by-species crises management approach to protecting endangered species. Congress must act to fund programs such as those discussed above if the Endangered Species Act is to work as Congress intended.

Sincerely,

Ed Sauls

Ed Sauls, Chairman
CBIA Environmental Issues Task Force

NATION ★★ TUESDAY, OCTOBER 12, 1993 / PAGE A5 The Washington Times

Fly's spot on list of protected defended

AP

The Delhi Sands fly may hold up an enterprise zone in Colton, Calif.

LOS ANGELES (AP) — They're only about an inch long and live a couple of weeks at most, and you'd probably swat one if you saw it.

Be careful. The Delhi Sands flower-loving fly is now on the federal endangered species list — the first fly ever to achieve that distinction.

Shrinking habitat is the reason — and those worried about commercial enterprise in suburban Colton are left scratching their heads.

"They talk about the fly becoming extinct, but so are jobs," said Mayor Frank Gonzales. "Next are they going to be designating ants?"

Maybe, said Greg Ballmer. The agricultural entomologist proposed putting the fly on the endangered list, a designation it won last month.

"If we allow these things to go extinct, it's kind of like taking library books out of the library and burning them without even reading them," said Mr. Ballmer of the University of California at Riverside.

Environmentalists say the Delhi Sands fly, spotted with dabs of orange and brown, shouldn't be held up for ridicule just because it's not as imposing as a grizzly or a national symbol like the bald eagle.

"The point isn't that any pretty little insect needs to be saved," said Jon Golinger of California Public Interest Research Group. "These species are part of a healthy ecosystem, and when species start dying, it's a clear sign that something's wrong."

For Mr. Gonzales, the battleground is Colton's 300-acre enterprise zone, where San Bernardino County has been planning to build a six-story hospital.

Putting the fly on the endangered species list has not shut down any construction or directly threatened any jobs, unlike the northern spotted owl. No work has started on the proposed hospital.

And just three acres of the fly's habitat is inside the enterprise zone. But that might be critical. Of the original 25,600-acre patchwork habitat, little more than 2 percent, or 512 acres, remains.

About 600 plants and animals are listed as endangered nationwide. People who kill or harm them may be fined up to $200,000 and sentenced to a year in jail.

Mr. Gonzales said the town needs the enterprise zone jobs, considering that as many as 400 families are losing work because of the shutdown of nearby Norton Air Force Base and unemployment is pushing 13 percent.

"Good-paying jobs, manufacturing jobs . . . now that the fly came up, they're kind of concerned. They're having second thoughts," the mayor said of developers.

No numbers are available on how many of the flies survive, but Mr. Ballmer said some were sighted in August and early September.

03 August 1995

The Honorable Dirk Kempthorne
Chairman
Subcommittee on Drinking Water, Fisheries and Wildlife
415 Senate Hart Office Building
Washington, DC 20510

AMERICAN ZOO AND AQUARIUM ASSOCIATION

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Dear Chairman Kempthorne,

Thank you for the opportunity to provide testimony before the Senate Subcommittee regarding the reauthorization of the Endangered Species Act. In this correspondence, which we request be made part of the record, we would like to briefly follow up on several issues raised during the question and answer period that may be useful to you and other Subcommittee members.

The American Zoo and Aquarium Association (AZA) believes the most prudent and cost effective way to preserve species is to protect their habitat. As a result of this belief, we also believe **captive breeding for reintroduction** should be used as a last resort. However, captive breeding for developing husbandry methods, conducting research, and retaining genetic variation should begin well in advance. It is important that early efforts at captive breeding are encouraged so the captive breeding community can respond quickly and with the proper expertise if requested. In the past the AZA has had the good fortune of having experience with similar species which has allowed us to assist endangered species such as the California condor and the black-footed ferret. If we do not plan ahead, this may not always be true.

The AZA also supports the creation of incentives and regulations that encourage private-public partnerships in the protection of endangered species. The evolving recovery program for the black-footed ferret is an excellent example of success in this area. This program is a cooperative effort led by the USFWS and involving several federal and state wildlife agencies, nongovernment organizations, private businesses, and private landowners. It is also important that recovery allow multiple use when possible. At this time there appears to be no reason why release sites for black-footed ferrets cannot also support hiking, back-packing, cattle grazing and other nondestructive uses. It is our hope that this excellent program which is moving forward in a cooperative, multiple use effort will not be hampered by proposed cuts in the USFWS budget.

We would also encourage the Subcommittee to examine the system being implemented for the endangered Wyoming toad regarding the need to search private lands for toads and curtailing the use of pesticides on private lands. This innovative program, developed with the cooperation of public and private partners, sets a given number of searches for the toad on private lands within a given time period. If no toads are discovered, the land use restrictions are eased with respect to insecticide application. There is also an effort to assist landowners in using alternative control agents rather than insecticides. As an added note the toad's captive breeding program has recently shown great success with Wyoming Game and Fish and several AZA zoos.

Thank you for this opportunity to provide additional information to the Subcommittee. If you have any further questions or need additional information, please do not hesitate to call upon us at the AZA.

Sincerely,

Robert J Wiese

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Assistant Director for Conservation and Science

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James R. Irvine
1995 President

August 3, 1995

The Honorable Dirk Kempthorne
Chairman
Subcommittee on Drinking Water, Fisheries and Wildlife
Senate Committee on Environment and Public Works
415 Hart Senate Office Building
Washington DC 20510

Dear Mr. Chairman:

It is my understanding that in your upcoming hearing on the Endangered Species Act, you will hear from participants in a recent dialogue addressing incentives for landowners to preserve endangered species, sponsored by the Keystone Center.

I want to make it clear that while the National Association of Home Builders (NAHB) name does not appear on the final report, a representative of NAHB participated in the dialogue, and NAHB supports this effort. However, internal process at NAHB requires in-house review before we can endorse the final product.

I congratulate you on holding these hearings on this important topic. NAHB looks forward to continuing to work with you to reform the Endangered Species Act so that it balances the necessary goals of environmental protection and economic growth.

Best regards,

James R. Irvine

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August 21, 1995

Senator John Chafee, Chairman
Committee on Environment and Public Works
505 Dirksen Senate Office Building
Washington, D. C. 20510

Dear Senator Chafee and Members of the Committee on Environment and Public Works:

The Teton County Wyoming Commissioners are privileged to be decision makers for a county which is exceptional in the richness of wildlife and wildlands within its borders. Our citizens repeatedly acknowledge the importance of these resources, in a variety of surveys from the Chamber of Commerce to the University of Wyoming to county planning. We recognize the value of wildlands and wildlife to our economy and quality of life. We believe the Endangered Species Act has contributed positively to the lives of Teton County's citizens and millions of visitors by offering a chance for survival to trumpeter swans, bald eagles, peregrine falcons, grizzly bears and their natural habitats. As a result, much information regarding biological relationships is obtained, not to mention the inspiration and enjoyment gained from the presence of these
species.

While recovery of threatened and endangered species includes big challenges and some short term inconvenience to man, it is also a measure of our ability to understand that the health and welfare of mankind is influenced by the overall health of the biochemical world. If habitat quality, air quality, and water quality are such that there is a richness and variety of flora and fauna, human life also improves.

We acknowledge that some inconvenience and abuse has occurred to individuals because of the Endangered Species Act, but we strongly urge you to fine tune it rather than departing from its current intent and parameters. Our own experience has shown a great deal of effort on the part of federal agencies to carefully consider and resolve situations involving private interests. Some bills currently being considered appear to add to the paperwork, judicial and financial burden while diminishing opportunity for public input. This appears to be negative in terms of regulatory efficiency and results desired. Instead, we encourage revisions which speed up review and analysis, enabling landowners and the general public reassurance about fair process and positive results.

Finally, we note with dismay, the procedure followed for the Congressional hearing held in Casper. We believe the health of our biological systems is everyone's interest. Certainly, there seemed to be a lack of opportunity for those who were not representing a singular interest to testify. We do, however, thank you for the opportunity to submit our thoughts to you in writing.

Respectfully submitted on behalf of the Board,

Sandy Shuptrine

Sandy Shuptrine, Chair
Teton County Board of Commissioners

SS:jw

C H A M P I O N
ISSUE PAPER

February 1995

Reform of the Endangered Species Act

Champion's Position on the Endangered Species Act: Champion, as well as the entire forest products industry, supports the goals of the Endangered Species Act (ESA) as important and necessary. However, we view the law as needing change in order to achieve those objectives. Currently, the law is not working as intended -- its impact on society is more negative than positive. This negative impact has grown in direct proportion to the efforts of some environmental groups to achieve goals unrelated to the preservation of threatened and endangered species.

Overall, Champion believes that the ESA must be amended to ensure that:

> **The rights and livelihoods of people effected by the ESA are carefully considered as an integral part of species protection and recovery efforts.**

Background: The Endangered Species Act, enacted in 1973, is one of the nation's most important and far-reaching environmental laws. The ESA protects both plant and animal species that are classified as:

- ***endangered:*** any species which is in danger of extinction throughout all or a significant portion of its habitat range; or
- ***threatened:*** any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its habitat range.

Currently, more than 900 U.S. species of plants and animals are listed as endangered or threatened, while another 4,000 species are considered candidates for listing -- and the list of protected species is growing at the rate of approximately 50 per year. Species are listed as endangered or threatened based solely on biological and scientific data, without regard to potential economic or other effects on society.

Not only government agencies, but private individuals and businesses are required by the Act to avoid "taking" a listed species and a violation of the Act carries stringent criminal and civil penalties. "Taking" is defined as: "... harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect." "Harass" and "harm" have in particular been broadly construed, to the point where public or private activities which change a species'

habitat (like clearing brush, building homes, mining minerals or logging trees) can be considered a "take." Federal agencies are prohibited from authorizing, funding or carrying out any action (including the granting of permits) that would jeopardize, destroy or *harm* (which the government defines to include "modify") the habitat of an endangered species. There is little flexibility provided in the law.

The goal of protecting and conserving endangered species is extremely important. Recently, however, the original purpose of the ESA has been overshadowed as a result of its misuse by some environmental groups. More and more, it is being used by such groups as a tool to prevent otherwise lawful activities on public and private lands in order to achieve unrelated goals such as blocking development projects, creating unofficial "wilderness" areas, or halting activities which they find undesirable, such as cutting timber.

As the list of species has grown, the lack of flexibility inherent in the ESA and its increasing misuse have become more significant problems. The ESA has the potential to affect more individuals and property than perhaps any other single environmental statute.

What's Wrong With The ESA and How Can It Be Fixed?

The ESA Lacks Flexibility: The ESA contains none of the qualifiers found in virtually every other environmental statute to ensure that costs bear some relation to benefits, such as "best available technology," "to the extent feasible," "insofar as practicable," and so on. When a species is listed, the Fish and Wildlife Service (FWS), the agency responsible for administering the law, has few options to minimize economic impact -- leading to occurrences like the spotted owl controversy, which has put thousands of people out of work in the Pacific Northwest. Since the FWS and some courts have broadly interpreted habitat modification to be a "taking," *any* land use that *may* harm even one member of a species, subspecies or their habitat can be a violation of the ESA. In addition to not being able to consider the social and economic implications of listing, the FWS cannot even exercise discretion in determining whether listing will save a species -- no matter how high the cost.

Solution: The FWS should have adequate flexibility to adapt recovery plans to reflect economic and other realities and to balance competing concerns. This would include taking into consideration the biological significance of a particular species and the harm to human beings that might result from a strict recovery plan.

The Scientific Base for Listing Decisions Needs to be Improved: The ESA requires a listing to be determined on the basis of "the best scientific and commercial evidence available." Unfortunately, for many species, there is little good scientific data and, in most cases, the FWS is unable to conduct original, independent research to evaluate the status of the species.

Solution: The ESA should require use of ***all*** applicable scientific data, apply rigorous scientific standards to the data used, undertake additional research when existing date is inadequate and require peer review to ensure that decisions are based on sound science.

Definitions of Species and Subspecies Are Overly Broad: The ESA uses a broad definition of species that includes: "... any species or subspecies of fish, wildlife, or plant; any variety of plant; and any distinct population segment of any vertebrate species that interbreeds when mature." A species may be listed as endangered in one area while it is plentiful in another -- like the California Gnatcatcher. A researcher in 1988 arbitrarily divided the species into northern and southern subspecies, and then in 1990 moved the dividing line 30 degrees of latitude north -- which decreased the population of the northern subspecies of gnatcatchers from 2.5 million to 4,000, small enough to qualify for threatened status.

Solution: The ESA should provide a scientifically accepted standard for determining what qualifies as a separate species or subspecies.

Spending Should Be Prioritized: The FWS has limited resources at its disposal, but the pattern of spending is often related more to politics than to scientific considerations or potential for recovery. Over half of the funds allocated to the FWS in 1990 were spent on just a dozen species, while the next dozen species received another twenty-five percent, leaving all the remaining species to share just a quarter of the funding. The overly broad definition of species and subspecies complicates the matter. For example, the FWS spent over $500,000 on the recovery of each warty-back pearly mussel. Would that money have been better spent on some other species altogether?

Solution: Biological significance, ability to recover, and economic impact are all factors which should be used to prioritize activities and expenditures.

The ESA Does Not Require Specific Recovery Goals or Provide a Meaningful De-listing Process: The FWS is required to develop a recovery plan for each listed species, but few of these plans have specified recovery goals. Also, while the ESA does contain a process for de-listing species after they have recovered, in practice the process is politically charged and rarely used. The irony is that Congress established de-listing as the measure of success for the ESA -- the recovery of a species beyond the point of threatened or endangered status.

Solution: Recovery goals should be specified in each recovery plan and de-listing should be a viable option when a listed species exceeds the FWS-mandated recovery goal.

Enforcement is Based on Theory Rather Than Facts: Even compliance with a recovery plan is no guarantee that a landowner will not face liability for a "taking" of a species. Because habitat modification is included in the definition of harm -- even without any indication that a species has actually suffered any harm -- individual landowners can face fines and even criminal prosecution under the ESA based on a theoretical concept of harm.

Solution: Habitat modification, absent evidence of actuel injury, should not be the basis for fines or criminal liability.

Status of the Legislation: Since the ESA was signed into law in 1973, it has been amended and/or reauthorized seven times -- in 1976, 1977, 1978, 1979, 1980, 1982 and 1988. Numerous proposals to amend the ESA were introduced in 1994, but none were enacted into law. As the issue has become increasingly controversial, it is harder to find acceptable political compromises. The following are the key provisions which the advocates for reform would like to see enacted:

- require field testing and peer review of scientific data
- require analysis and consideration of economic impacts
- provide more public and interagency involvement in crafting recovery plans
- require consideration of alternative recovery options
- clarify the term "take" to exclude habitat modification
- provide compensation to property owners for loss of property use
- require the setting of measurable recovery goals

Reauthorization of the ESA is expected to be one of the priority issues being advocated by the Republican-controlled Congress in 1995.

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Working Paper No. 4

ENDANGERED SPECIES LISTINGS and STATE ECONOMIC PERFORMANCE

Stephen M. Meyer

March 1995

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Working Paper No. 4

ENDANGERED SPECIES LISTINGS and STATE ECONOMIC PERFORMANCE

by
Stephen M. Meyer[1]

INTRODUCTION

For most Americans mention of the Endangered Species Act conjures up images of a triumphant Spotted Owl perched atop an enormous Douglas Fir, while below a group of unemployed loggers idly drink beer and pitch stones. The Endangered Species Act, some argue, is impeding American economic growth and prosperity – "trashing the economy". Indeed, anecdotes abound of butterflies halting shopping mall projects, mosses scuttling highway extensions, and fish blocking resort development.

With the number of listed endangered species presently hovering around 800 and thousands of candidate listings waiting in the wings it is certainly prudent to question whether we can pay the alleged price for protecting endangered plants and animals in the manner presently defined by the Endangered Species Act. And it is in this context that a number of amendments to the Endangered Species Act have been proposed, all aspiring to balance the needs of biodiversity against those of the economy.

In order to assess the potential economic value of these proposed amendments we need to have some sense of the actual economic impact of endangered species listings. To what degree do such listings depress economic growth and development? Those who favor giving economic interests more weight in the endangered species process are convinced that the negative economic effects of endangered species listings are readily observable and substantial. This should be easy to verify, and if true would prove valuable in estimating the economic return from an "economically balanced" Endangered Species Act.

Accordingly, this paper estimates the impact of endangered species listings on state economic development for the period 1975-1990, the entire lifetime of the Endangered Species Act for which complete data are available. The data show that endangered species listings have not depressed state economic development activity as measured by growth in construction employment and gross state product. These findings hold even after taking into account state area, population, population density, size of economy, structure of economy, population growth, and time. In fact a state by state comparative analysis across three consecutive five year periods reveals the converse to be true: higher numbers of listed endangered species are

[1] The author is Professor in Political Science and Director of the Project on Environmental Politics and Policy.

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associated with higher rates of economic growth and corresponding population pressures.

ESTIMATING THE ECONOMIC IMPACT OF ENDANGERED SPECIES LISTINGS AT THE STATE LEVEL

Before launching into any form of statistical estimation it is useful to examine visually the basic trends in the two key variables -- rates of economic development and endangered species "burden"-- to see how they move in time. This study uses two standard indicators of state economic performance that reflect development activity: growth in construction employment and growth in gross state product.[2] The choice of construction employment is obvious. If the weight of endangered species listings is systematically hindering development activity, for example forcing delays and cancellation of public works projects and spawning permit denials for residential and commercial construction, then construction employment opportunities should be limited if not actually depressed.

Endangered species burden is measured in terms of the number of listings per state – a relative measure of endangered species burden. In fact the political debate over the Endangered Species Act is itself waged in terms of the number of listings, current and prospective. Opponents worry that the impending avalanche of listings will shut down important segments of the U.S. economy, especially the natural resource sectors. A larger number of individual species listed, they argue, means a larger amount of land likely to be affected. It also implies a larger assortment of restrictions put in place, all else being equal. Therefore, Alabama with 61 listed species in 1990 would in theory labor under more onerous burdens than neighboring Georgia with 31 listed species. And both would be worse off than Louisiana with just 19 listed species.[3]

If the impact of the Endangered Species Act is really as pervasive and perverting as the anecdotal evidence implies then the overall economic climate in states with high numbers of endangered species listings should suffer in a

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[2] Data were obtained from the U.S. Department of Commerce and Department of Labor.

[3] Of course the number of listed species is not a perfect measure. Some listed species range over very small habitats. Habitat for the Tecopa Pupfish was under an acre. Others, such as grizzly bears require hundreds of thousands of acres. Thus, two states with a single listing each may experience very different impacts.

Then too many listed species have overlapping territories. For example, the area designated as habitat for the California Gnatcatcher contains some 37 other endangered species. Thus, it is likely that the cumulative impact of these 38 listings may be substantially less than the sum of their parts. It would be desirable, therefore, to use this alternative measure of species burden. Unfortunately, data are not yet available to allow us to measure endangered species "burden" directly by land restrictions.

measurable way.[4] This negative effect should ripple back through state economies and be detectable in changes in the gross state product. For example, traditional assumptions about multiplier effects assert that every timber job lost in Oregon causes three additional jobs in services, retailing, etc. to disappear.

Construction Employment Growth: FIGURE 1 consists of three graphs representing the periods 1975-1980, 1980-1985, and 1985-1990. Forty-eight states, omitting Alaska and Hawaii, are plotted according to (the vertical axis) their average annual growth in construction employment during the five year period and (the horizontal axis) their corresponding number of listed endangered species as of the *beginning* of that period.[5] In other words, each graph is a snapshot in time comparing the states in terms of the number of listed endangered species and subsequent economic performance for the five year period. The line running through the graph attempts to trace the general trend using simple regression.

None of the patterns in any of the time periods support the assertion that endangered species protection results in measurable reductions in state economic performance. In fact there seems to be a modest *increasing* (positive) trend during the first two periods in construction employment growth as the number of listed species rises, and no trend in the last period If endangered species listings are "trashing" state economies there is no sign of that impact on construction employment.

Gross State Product Growth: The next set of graphs arrayed in FIGURE 2 examine the trend for growth in gross state product as a function of endangered species listings. Here again the pattern predicted by critics of the Endangered Species Act fails to appear. There is no trend of declining economic performance as species listings increase. Instead all three periods show a modest increasing rate of gross state product growth associated with increasing numbers of species listings.

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[4] State by state annual data for endangered species listings were obtained from the U.S. Fish & Wildlife Service.

[5] Both Alaska and Hawaii sit as distant outliers in these graphs – that is, they fall outside the pattern set by the other states. Indeed it is quite common to exclude these states from cross-sectional analyses because of their atypical characteristics. In the context of this study there are strong substantive reasons to explain their "outlier" status. In Alaska's case its extraordinarily low population density, large wilderness areas, and natural resource (oil)economy separate it from the other states. Hawaii's island bio-geography and island economy uniquely distinguish it from the states of the continental U.S..

The statistical analyses for this study were run including and excluding Alaska and Hawaii. There were virtually no substantive differences in the results, albeit for larger standard errors around coefficients and statistics. Thus, only the results excluding these two states are reported.

Simple Bivariate Associations

The patterns in the graphs are indeed suggestive, but do they hold up to more serious scrutiny? Or, is it possible that that *apparent* positive relationship could arise from chance occurrence? Using simple bivariate regressions we can test if the visual impressions from the graphs of a positive association could stand on their own as being statistically significant, or whether they just might be random fluctuations that give the appearance of a systematic relationship.[6]

Beginning with a simple bivariate regression is justified in this case by the fact that those who argue that the Endangered Species Act is trashing the economy are quite vocal in their view that the effects are clear and obvious. Certainly their anecdotes make it seem so. Therefore we should be able to detect the harmful economic effects of endangered species listings without more complex econometric or statistical controls.

Construction Employment Growth: The bivariate regression results for construction employment growth are shown in TABLE 1. What do we find? Look at the row corresponding to the predictor variable: **NUMBER of ENDANGERED SPECIES**. Each column corresponds to a given period and the first

TABLE 1: Regression Analysis of the Impact of Endangered Species Listings on Construction Employment Growth

	PERIOD		
PREDICTOR	***1975-1980***	***1980-1985***	***1985-1990***
NUMBER of ENDANGERED SPECIES	0.370***	0.082	0.004
	(3.760)	(1.325)	(0.070)
N	48	48	48
R-SQR	0.24	0.04	0.00
Adj. R-SQR	0.22	0.01	0.00

*$p<0.05$ **$p<0.01$ ***$p<0.001$

number in the cell is the regression coefficient. It measures the change in construction employment growth as a function of change in the number of listed species. For 1975-1980 it appears that when you compare states each additional listed species is associated with an increase of 0.37% in construction employment growth.

[6] The regression model used was:

Construction Employment. $Growth_{(t,t+5)}$ = constant+ $SPECIES_{(t)}$

The number in parentheses directly below the regression coefficient is the t-statistic testing the statistical significance of the regression coefficient. An asterisk (*) indicates that based on the t-statistic there is less than a 5% chance that the coefficient is actually "0" or negative. That is, the coefficient is significant at the 5% level. A double asterisk indicates statistical significance at or below 0.01; a triple asterisk indicates statistical significance at or below 0.001. The choice of a threshold for statistical significance depends on your attitude toward risk. In general, probability values of 0.05 or 0.01 are considered to be appropriate dividing lines., indicating that for the purposes of analysis it is reasonable to assume that a systematic relationship does exist between the variables.

The lower section of the table reports some basic information about the regression. The most important number is the *Adjusted R-SQR*, which measures the relative amount of variation in the economic indicator that is accounted for by endangered species listings. A small adjusted R-SQR – say below 10% – says that the relationship is basically uninteresting because the vast amount of variation in the economic indicator is not explained.

Looking at TABLE 1 we see that the coefficients for all three time periods are positive, but only the 1975-1980 data produce a statistically significant coefficient. The simple regression for 1975-1980 seems to account for about a quarter of the variation in state construction employment growth (Adj. R-SQR). Given the null results for 1980-1985 and 1985-1990 (statistically insignificant coefficients and zero adjusted R-SQR) we can safely conclude that there is no clear or obvious systematic bivariate relationship between endangered species listings and development growth as measured by construction employment growth. This is not what opponents of the Endangered Species Act expect to see.

Gross State Product Growth: TABLE 2 looks at the relationship between endangered species listing and growth in gross state product. Once again the simple bivariate regression coefficients for NUMBER of ENDANGERED SPECIES are positive. While the 1975-1980 coefficient is statistically significant the others are not. We might be better off ignoring the positive trends seen in the graphs. Nevertheless these results strongly contradict the argument that endangered species listings impede state economic growth and development.

Confounding Influences

Of course all this begs the question: What happens when you take into account some of the obvious characteristic differences among the states? Perhaps the opponents of endangered species protection are fundamentally correct – endangered species protection does hinder economic growth – but their rhetoric exaggerates the case. Could the effect be more subtle than they believe? Controlling for certain state characteristics, therefore, might reveal the negative economic effects they predict. While a more subtle negative effect

TABLE 2: Regression Analysis of the Impact of Endangered Species Listings on Gross State Product Growth

	PERIOD		
PREDICTOR	*1975-1980*	*1980-1985*	*1985-1990*
NUMBER of ENDANGERED SPECIES	0.17**	0.04	0.02
	(3.04)	(1.55)	(1.30)
N	48	48	48
R-SQR	0.17	0.05	0.03
Adj. R-SQR	0.15	0.03	0.01

*$p<0.05$ **$p<0.01$ ***$p<0.001$

might not be as politically compelling it would still be important for public policy-making.

For example, many western states have fairly large territorial areas, relatively small populations, and have economies that depend to a substantial degree on natural resource industries: forestry, oil and coal extraction, mining, etc. Large area and low population implies fewer occasions where human activities and wildlife activities collide, suggesting lower numbers of species listings. At the same time these states may be more likely to have poorly performing economies because natural resource commodity markets have been skittish for the past two decades. Consequently, an analysis of the relationship between endangered species listings and economic performance that includes these states may be biased if it ignored these confounding correlations.

Likewise we could speculate that states with larger economies might tend to have more listed endangered species because they have larger populations and enjoy more aggressive land development, making encroachments into critical habitats more likely. "Big economy" states may also have stronger economic engines to drive stronger growth. Ignoring state differences in economic size could mask a fundamentally negative relationship between endangered species listings and economic growth. Therefore, we should reanalyze the data using statistical controls to adjust for characteristic differences among the states that are likely to be related to both the relative number of endangered species listings and economic performance.

TABLE 3 presents the results for a multiple regression that examines how growth in construction employment varies with the number of species

TABLE 3: Multiple Regression Analysis of the Impact of Endangered Species Listings on Construction Employment Growth

	PERIOD		
PREDICTOR	***1975-1980***	***1980-1985***	***1985-1990***
NUMBER of ENDANGERED SPECIES	0.407***	0.164*	0.019
	(3.718)	(2.599)	(0.325)
Land Area	0.315	-0.777	0.933
	(0.639)	(-1.139)	(1.222)
Size of Economy	-1.003*	-0.378	-0.394
	(-2.241)	(-0.575)	(-0.523)
Percent Extractive Industry	0.677	-3.400**	-4.740**
	(0.695)	(-2.770)	(-3.237)
N	48	48	48
R-SQR	0.36	0.33	0.21
Adj. R-SQR	0.30	0.28	0.14

*$p<0.05$ **$p<0.01$ ***$p<0.001$

listings after taking into account some key differences among the states in the form of the nuisance variables: area, economy size (gross state product), and extractive industry dependency (percent of gross state product derived from extractive industries).[7]

Comparing the coefficients and probabilities for **NUMBER OF ENDANGERED SPECIES** between TABLE 1 and TABLE 3 we see that the strength of the positive relationship between construction employment growth and species listings *increases* after taking the nuisance variables into account. Moreover the 1980-1985 series crosses the 0.05 threshold of statistical significance. Clearly there is something interesting here.

In particular the declining magnitude and statistical significance of the coefficients linking **NUMBER OF ENDANGERED SPECIES** and construction

[7] Area, gross state product, and percent of industry in extractive industry are used in the estimating equation in log form. Log form is used to remove the confounding effects of non-linear relationships among the variables and heteroscedasticity in the residuals. It also turns out that these are log-normal variables. Population is excluded from the analysis because it is so highly correlated with size of economy (0.985). Economy size is an effective surrogate. Substitution produces the same results. Population density is implicit in the analysis using the log forms of area and population. Percent of urban population was also tried in early analyses but dropped when it failed to show any effect.

employment growth over consecutive periods suggest that the positive association dissipates over time. In contrast the negative relationship between construction employment growth and extractive industry grew stronger over time. This is consistent with the fact that states with large energy producing

TABLE 4: Multiple Regression Analysis of the Impact of Endangered Species Listings on Gross State Product Growth

	PERIOD		
PREDICTOR	*1975-1980*	*1980-1985*	*1985-1990*
NUMBER of ENDANGERED SPECIES	0.21***	0.07**	0.07***
	(4.05)	(3.19)	(5.05)
Land Area	0.35	-0.32	-0.27
	(1.51)	(-1.30)	(-1.49)
Size of Economy	-0.96***	-0.28	-0.59**
	(-4.58)	(-1.19)	(-3.29)
Percent Extractive Industry	0.19	-1.24**	-2.28***
	(0.42)	(-2.75)	(-6.56)
N	48	48	48
R-SQR	0.50	0.36	0.67
Adj. R-SQR	0.45	0.30	0.63

*$p<0.05$ **$p<0.01$ ***$p<0.001$

sectors enjoyed good economic times the 1970s as a result of oil price shocks. This produced an expanding construction market (notice the positive, though statistically insignificant coefficient for **PERCENT EXTRACTIVE INDUSTRY**). The economic fortunes of these states changed in the 1980s and that is reflected in the negative coefficients for 1980-1985 and 1985-1990.

Regardless of what one thinks of this persistent counter-intuitive positive to null association between species listings and construction employment growth, state experiences during the period 1975-1990 do not conform to the notion that the Endangered Species Act has hurt economic performance, even after controlling for the nuisance variables.

Gross State Product Growth: TABLE 4 reexamines the relationship between gross state product growth and species listings with controls for state characteristics. Here again the relationship between species listings and gross state product growth is marginally stronger (compare with TABLE 2) -- the coefficients are larger and the associated significance levels get smaller -- when characteristic differences among the states are "controlled."

Indeed, all three time periods now show a statistically significant relationship between species listings and growth in gross state product. As we saw for construction employment, this relationship appears to have been

strongest during the earlier period. Similarly, the negative relationship between extractive industry dependence and economic performance grows over time.

Anecdotes notwithstanding, the data compel us to reject the argument that higher numbers of endangered species listings are associated with poorer economic performance.

ANALYZING A MORE SUBTLE FORM OF NEGATIVE ECONOMIC IMPACT FROM ENDANGERED SPECIES LISTINGS

Perhaps it is true, as the above results suggest, that states with higher numbers of listed species also tend to have stronger economies. Nevertheless, species listings could still exert a more subtle drag effect – a sort of negative feedback – that gradually and incrementally retards the rate of growth of state economies. You could argue that, regardless of what did happen in the 1970s and 1980s, states with higher numbers of species listings might have *further* economically outpaced the other states had they not had higher species listings.

The effect would be evident by comparing each state's growth rate in a given period against its prior and subsequent economic performance. If larger numbers of species listings decelerate economic growth, then when comparing the periods 1975-1980, 1980-1985, and 1985-1990 states with cumulatively higher numbers of species listings would show a tendency toward slower growth in subsequent periods relative to states with fewer listings.

This hypothesis is tested in TABLE 5 for growth in Gross State Product.[8] As the first row shows the coefficients are positive, not negative as Endangered Species Act detractors would expect. As states accumulate species listings their economic growth rates do not decelerate; in fact they seem to accelerate. The best predictor of a slowing economy is dependence on extractive industries.

TABLE 6 performs the same analysis for growth in construction employment and produces fundamentally the same results. The accumulation of endangered species listings over time is not associated with decelerating growth rates in construction employment. There is either a slight positive association or no association at all.

The data fail to find any basis for presuming that states that accumulated higher numbers of listed species over time would have enjoyed even stronger growth had the Endangered Species Act not been implemented.

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[8] Defining "Diff" as the difference in economic indicator growth rates between two consecutive five year periods, then the equation is:

$Diff_{(p,p-5)} = constant + Species_{(p)} + Nuisance\ Variables_{(p)} + Error.$

TABLE 5: Multiple Regression Analysis of Impact of Accumulated Endangered Species Listings on Inter-Period Changes in Gross State Product Growth Rates

PREDICTOR	PERIOD: 1980-1985 vs. 1975-1980	PERIOD: 1985-1990 vs. 1980-1985
TOTAL NUMBER of LISTED SPECIES	**4.586**** (3.306)	**2.005** (1.682)
Land Area	-0.455 (-1..76)	0.004 (0.013)
Size of Economy	-0.147 (-0.374)	-0.343 (-1.068)
Percent Extractive Industry	-1.173 (-1.685)	-1.912** (-3.033)
N	48	48
R-SQR	0.28	0.24
Adj. R-SQR	0.22	0.16

**p<0.05 **p<0.01 ***p<0.001*

TABLE 6: Multiple Regression Analysis of Impact of Accumulated Endangered Species Listings on Inter-Period Changes in Construction Employment Growth Rates

PREDICTOR	PERIOD: 1980-1985 vs. 1975-1980	PERIOD: 1985-1990 vs. 1980-1985
TOTAL NUMBER of LISTED SPECIES	**8.487*** (2.640)	**-0.422** (-0.114)
Land Area	-1.192 (-1.329)	1.505 (1.474)
Size of Economy	0.051 (0.057)	-0.044 (-0.044)
Percent Extractive Industry	-2.163 (-1.340)	-3.443 (-1.765)
N	48	48
R-SQR	0.24	0.09
Adj. R-SQR	0.17	0.01

**p<0.05 **p<0.01 ***p<0.001*

ESTIMATING THE IMPACT OF ECONOMIC GROWTH ON ENDANGERED SPECIES LISTINGS AT THE STATE LEVEL

Of course the above results do not mean that we can stimulate state economic growth by intentionally increasing the number of listed endangered species. Then how can we explain these paradoxical results? *Reverse cause and effect*: strong economic growth is an engine for increases in species listings *and* subsequent economic growth. Therefore, the data series produce correlations between species listings and subsequent economic growth even though the causal relationship runs the other way.

The appropriate step is to reverse the causal direction in the analysis and reexamine the data predicting endangered species listings based on *prior* economic performance. The analysis here is conceptually straightforward. The pace of economic growth for each state during a given period is measured and then we ask how it is related to the *subsequent* rate of endangered species listings in that state. For instance, did states with higher rates of growth in gross state product between 1975-1980 experience larger increases in endangered species listings in subsequent years?

While this is a simple question conceptually some analytic gymnastics are required to answer it. First, case studies show that pressures on a given species develop slowly and are often unrecognized for a considerable period of time. The development activity that poses a threat to either the creature or its habitat may persist for many years before the threat is recognized. Second, studies of the listings process itself show that there is a substantial delay between the time authorities become aware that an animal or plant may be in danger and its eventual placement on the endangered species list. Indeed, many species in trouble never make it to the list at all. Several dozen have disappeared while in the waiting queue. Thus, we cannot not expect an instantaneous cause and effect.

Moderating that delay, however, are the efforts by U.S. Fish & Wildlife and many national and local environmental organizations supporting enforcement of and compliance with the Endangered Species Act, as well as the activities of local (NIMBY) interests wishing to block specific projects. Whatever the latter's motivation they nonetheless help to identify potential candidates for listing prior to development work. In short, there may be some lag between economic growth (cause) and consequent listing of species (effect) but it should not be extreme.

The multiple regression analysis in TABLE 7 attempts to predict the pace and distribution of new endangered species listings based on economic growth

rates.[9] It assumes a two-year delay between economic "cause" and species listing "effect". Economic activities between 1980 and 1985 are presumed to affect species listing rates between 1982 to 1987. Other lag values (0 to 5 years) do not substantially alter the results either way. For this analysis both indicators of economic development, the five-year average annual growth in gross state product and the five-year average annual growth in construction employment, appear as independent variables in the model together.

The results in TABLE 7 support our suspicions about the real links between state economic performance and endangered species listings. Gross state product growth is systematically and *positively* associated with subsequent growth in the number of listed species, after controlling for state

TABLE 7: Multiple Regression Analysis of the Impact of Development Pace on Endangered Species Listings

	PERIOD		
PREDICTOR	***1975-1980***	***1980-1985***	***1985-1990***
Gross State Product Growth	0.21***	0.14**	0.10**
	(3.35)	(2.83)	(2.71)
Construction Employment Growth	-0.03	-0.01	-0.004
	(-1.15)	(-0.30)	(-0.386)
Land Area	-0.12	0.13*	-0.003
	(-1.84)	(2.39)	(-0.075)
Size of Economy	0.26***	0.07	0.230***
	(-4.04)	(1.46)	(5.130)
Percent Extractive Industry	0.03	0.18	0.172
	(0.26)	(1.82)	(1.458)
N	48	48	48
R-SQR	0.37	0.43	0.46
Adj. R-SQR	0.29	0.37	0.40

*$p<0.05$ **$p<0.01$ ***$p<0.001$

area, size of economy and extractive industry dependence. In contrast, growth in construction employment does not seem important when the other variables are considered. Its coefficients, while uniformly negative, are for all intents and

[9] The equation is:

$$\text{New Listings}_{t+2,t+7} = \text{constant} + \text{Gross State Product Growth}_{t,t+5} + \text{Construction Employment Growth}_{t,t+5} + \text{Nuisance Variables} + \text{Error}.$$

The nuisance variables are in log form, as is the dependent variable: new listings. Analysis shows these are all log-normal variables.

purposes "0", as indicated by their small values and failure to attain statistical significance. While at first glance this result might seem odd, it actually makes good sense. A zero coefficient means that when you hold growth in gross state product constant (as well as the other predictor variables) changes in growth in construction employment do not affect endangered species listings. This is entirely reasonable since growth in construction employment a direct result of an expanding economy. Therefore "controlling" the latter has the effect of controlling the former, and so no independent effect is registered.[10]

The table also shows that states with larger economies also tend to have larger numbers of listed species. This may be partially the result of greater economic dynamism: big economies expand more. It may also be related to the fact that big economies have big populations, implying significant population pressures on wildlife habits.

We can carry this exploration one step further if we consider the link between economic performance, development, and population trends. As noted earlier state population was not explicitly used in the analysis because it was effectively captured by several of the other variables.[11]. But, as shown in TABLE 8 when change in state population (population growth) during periods is added This occurs because of the dynamic interaction among these two variables. People are attracted to states with expanding economies, and an influx of new workers and consumers further stimulates development and economic growth.[12] Therefore when both gross state product growth and population growth are included together in the analysis the former effect is nullified.

The Adjusted R-SQR values shown in TABLE 6 caution that we should not, however, push this argument too far. Only about 40% of the variation in new listings is accounted for the by the two statistically significant predictor variables: population change and size of economy. Thus most of the explanation for differences in species listings among the states continues to elude us. Studies by other researchers point to a host of bureaucratic, organizational, ecological, political, and economic influences that may account for much of the missing variation.[13]

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[10] The correlation between gross state product growth and construction employment growth is 0.82, 0.83, and 0.56, respectively for the three periods. The constraining effect on construction employment growth when gross state product growth is held constant is clearly seen in partial regression plots.

[11] In fact colinearity was so severe that it prevented model estimation.

[12] The correlation between population growth and growth in gross state product is 0.91, 0.45, and 0.78 for each of the three periods, respectively.

[13] See, for example: Stephen L. Yaffe (1982) *Prohibitive Policy: Implementing the Federal Endangered Species Act* (Cambridge, MA: MIT Press); Richard J. Tobin (1990) *The Expendable Future: Politics and the Protection of Biological Diversity* (Durham, N.C.: Duke University Press); (continued)

TABLE 8: Multiple Regression Analysis of the Impact of Development Pace on Endangered Species Listings

PREDICTOR	PERIOD 1975-1980	1980-1985	1985-1990
Gross State Product Growth	0.054	0.067.	0.085
	(0.679)	(1.247)	(1.252)
Construction Employment Growth	-0.048	-0.01	-0.003
	(-1.692)	(-0.658)	(-0.240)
Land Area	-0.163*	0.070	-0.0.12
	(-2.577)	(1.254)	(-0.200)
Size of Economy	0.278**	0.089	0.228***
	(-4.627)	(1.963)	(4.978)
Percent Extractive Industry	-0.017	0.038	0.170
	(-0.143)	(0.334)	(1.427)
Change in Population	0.342**	0.176*	0.018
	(2.936)	(2.339)	(0.266)
N	48	48	48
R-SQR	0.48	0.50	0.47
Adj. R-SQR	0.40	0.43	0.39

*$p<0.05$ **$p<0.01$ ***$p<0.001$

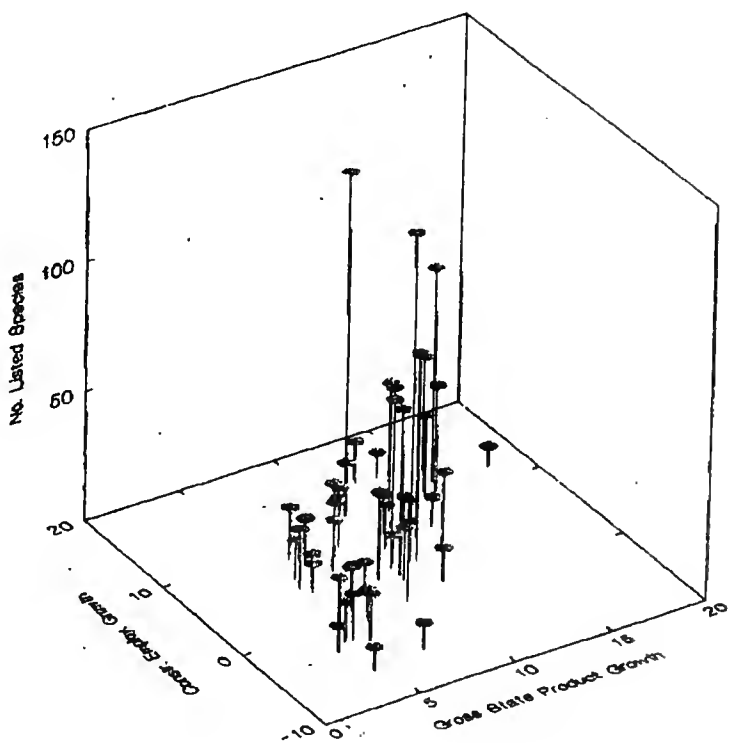
CONCLUDING OBSERVATIONS

The one and a half decades of state data examined in this paper strongly contradict the assertion that the Endangered Species Act has had harmful effects on state economies. Protections offered to threatened animals and plants do not impose a measurable economic burden on development activity at the state level. In fact the evidence points to the converse. The combination of robust development and population migration accelerates the rate of endangered species listings.

This relationship is clearly seen in FIGURE 3 which places each state in a three dimensional space. The floor of the graph is defined by the two growth indicators: growth in gross state product and construction employment growth over the entire period 1975-1990. The vertical axis corresponds to the total number of listed species in 1992, allowing for lags in the listings process. Each state is represented by a "hat pin" whose vertical height corresponds to total number of listed species. The long upward slope of the hat pins that ascends

and United States General Accounting Office (1993) *Endangered Species: Factors Associated with Delayed Listing Decisions* (GAO/RECD-93-152).

Figure 3: Species Listings & State Economic Performance 1975-1992



toward the top rear corner of the graph clearly suggests that endangered species listings are a consequence of strong economic performance over the 15 year period.

We must now return to the source of this inquiry and reconcile these findings with the anecdotes that find their way to the media. How can it be, given the well-publicized horror stories, that the Endangered Species Act does not leave a trace on state economies? The answer is simple: the economic effects of endangered species listings are so highly localized, of such small scale, and short duration that they are do not substantially affect state economic performance in the aggregate. They are lost in the noise of background economic fluctuations. A rare toad may indeed impede construction of an ocean resort or golf course but such events do not ripple back through state economies.

Although detractors of the Endangered Species Act often describe it as blind to the needs of people and the economy, every government and academic examination of the endangered species process has reached the opposite conclusion: political, economic, and social considerations permeate the listings process.[14] In fact, for every tale about a project, business, or property owner allegedly harmed by efforts to protect some plant or animal species there are over one-thousand stories of virtual "non-interference." In reviewing the record of 18,211 endangered species consultations by the Fish and Wildlife Service/National Marine Fisheries covering the period 1987-1991 the General Accounting Office found that only 11% (2050) resulted in the issuance of formal biological opinions.[15] The other 89% were handled informally -- that is to say the projects proceeded on schedule and without interference. Of the 2050 formal opinions issued a mere 181 – less than 10% – concluded that the proposed projects were likely to pose a threat to an endangered plant or animal. And most of these 181 projects were completed, albeit with some modification in design and construction. In short, more than 99% of the projects reviewed under the Endangered Species Act eventually proceeded unhindered or with marginal additional time and economic costs. Given the political and economic screening that occurs in listings cases it is not surprising that no measurable negative economic effects are detectable.

It is not my intention to trivialize the economic or social effects at the sub-state level that may result from some individual species listing or habitat designation.[16] Counties, cities, and towns are much more sensitive to single

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[14]See the previous footnote.

[15] United States General Accounting Office (1992) *Endangered Species Act: Types and Numbers of Implementing Actions* (GAO/RECD-92-131BR).

[16]Available case studies also suggest that local communities suffer far greater economic and social harm from over-dependence on extractive industries. The boom to bust story continues to be played out in coal country, hard-rock mining communities, oil towns, and timber (continued)

employer or single industry effects. Endangered species critical habitat listings may, under certain conditions, have demonstrable negative economic impacts at the local level. The evidence, however, remains to be collected and analyzed.[17] But even conceding the possibility of systematic local effects, in terms of scale and scope they are a far cry from the national economic crisis that the Endangered Species Act's detractors depict.

Economic assistance, job training grants, and other localized programs can make a difference in such cases at modest cost. The revitalization of county economies in the Pacific Northwest following the listing of the Northern Spotted Owl is one example.[18]

Furthermore local economic effects must be considered in context. Hundreds of state and federal policies have far more injurious impacts on local economies than wildlife protection. For example, the recent series of military base closings have had economic effects hundreds of times greater than all the listings during the 20-year life of the Endangered Species Act. Even greater economic and social harm resulted from the ill-conceived deregulation of the savings and loan industry during the 1980s. The number of jobs lost to leveraged buy-outs in the 1980s exceeds by many times the wildest estimates of jobs lost to endangered species; and no social good was accomplished in any of these cases.

The evidence is clear: Based on the actual economic experience under the Endangered Species Act weakening the Act will not spur job creation and economic growth. It will not launch poor rural or western communities on the road to prosperity. It will not save overextended developers from bankruptcy. If "growing the economy" is the top priority of government then we should focus on policy options that can make a difference.

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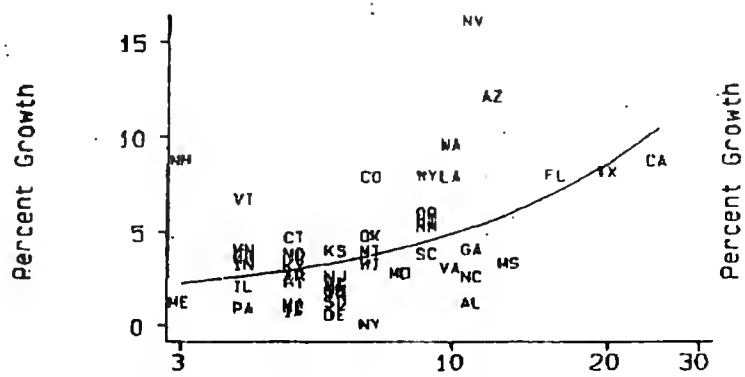
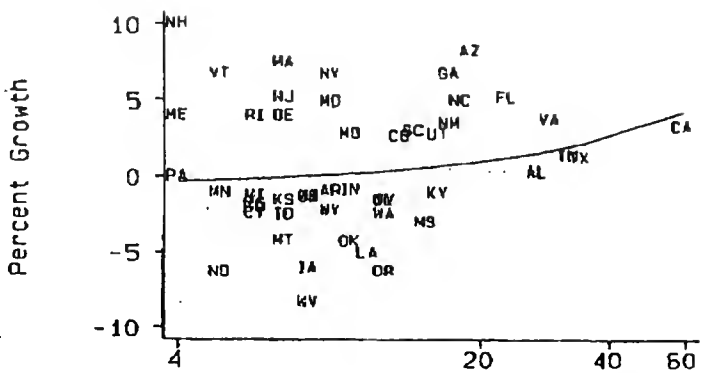
regions. Even the Spotted Owl case reveals that at worst the listing merely brought forward the date of collapse of segments of the Pacific Northwest timber industry. See, for example: William R. Freudenburg (1992) "Addictive Economies: Extractive Industries and Vulnerable Localities in a Changing World Economy," *Rural Sociology*, Vol. 57, No. 3, pp. 305-332.

[17] One such study, by the Texas and Southwestern Cattle Raisers Association, attempted a regional analysis of this sort in which they did find endangered species listings depressed local property values. Unfortunately, several errors in their statistical methodology produced this result. When these errors were corrected the analysis produced the opposite findings: counties with endangered species listings enjoyed higher than average property value growth. See: *Comparison of Fair Market Value of Rural Land and Vacant Lots/Tracts in 33 Central Texas and Hill Country Counties 1989-1993* (October 1994) and the author's review of that report.

[18] See: Jessica Maxwell (1995) "Back to the Woods," *Audubon* Vol. 97, No. 1(January-February), pp. 88-91; Timothy Egan (1994) "Oregon, Foiling Forecasters, Thrives as IT Protects Owls" *The New York Times* (October 5), p.A1.

Figure 1: Construction Employment Growth and Species Listings





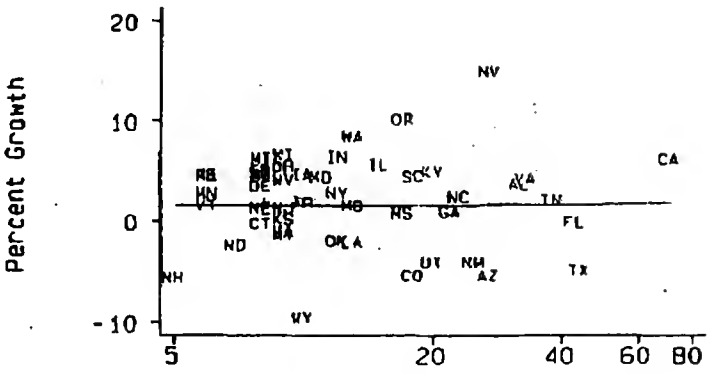
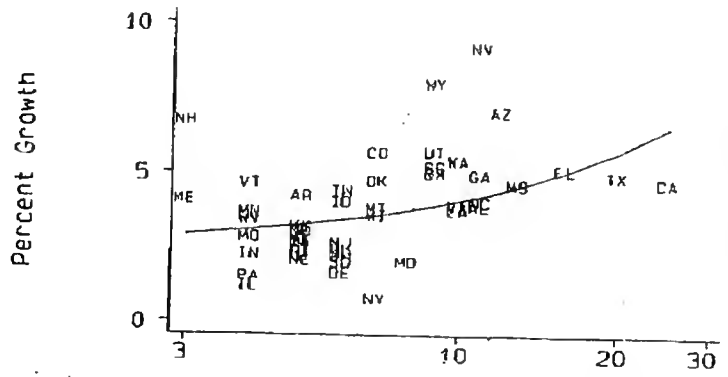
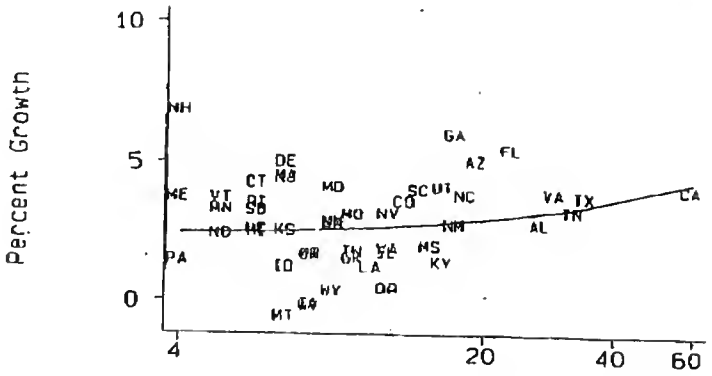
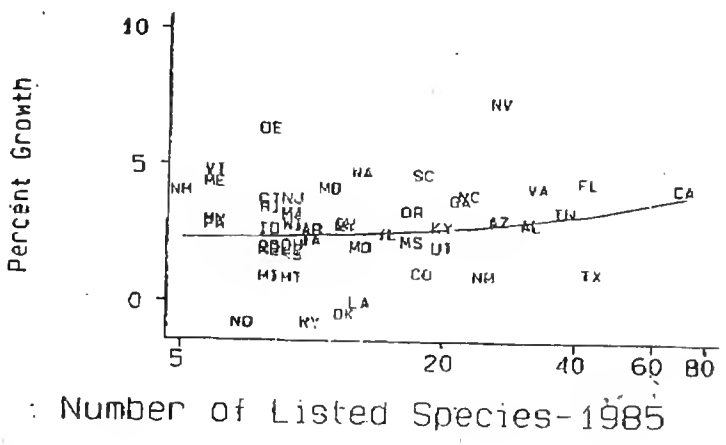


Figure 2: :Gross State Product Growth & Species Listing







The Keystone Dialogue on Incentives for Private Landowners to Protect Endangered Species

Final Report

July 25, 1995

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Table of Contents

The Keystone Dialogue on Incentives for Private Landowners to Protect Endangered Species

Introduction

This Report presents a wide range of incentives for private landowners to conserve threatened and endangered species. These incentive options, if adopted, should help reduce the controversy surrounding the Endangered Species Act (ESA) and improve the status of threatened and endangered species. The Report was developed by participants in The Keystone Dialogue on Incentives for Private Landowners to Protect Endangered Species, which included over 30 key individuals from: environmental, mining, ranching, and agriculture organizations; non-industrial private landowner groups, forest product companies; real estate interests; Congressional staff; federal and state agencies; and others. The Dialogue Group was convened by The Keystone Center, a neutral, nonprofit organization that facilitates national and international consensus-building policy dialogues involving diverse interests.

The Dialogue Group presents the recommendations here as a set of ideas that it believes deserve further, more careful consideration in the course of reauthorizing the ESA. The Group recognizes that an assessment of the merits of the ideas presented here, including their costs and likely benefits to conservation, will require more analysis than the Group could undertake in the short time frame available for its work.

Members of the Group participated as individuals and not as representatives of any organization. Endorsement of this report by the participating individuals does not necessarily imply support of its contents by the organizations with which they are affiliated.

The Issue

The current debate in Congress over reauthorization of the ESA is polarized on many issues, with the issue of "take"[1] being particularly contentious. Controversy exists about how this provision of the law does and should apply to private landowners. However, all sides agree

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[1]To "take" is defined as "[t]o harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." 16 U.S.C. Sec. 1532. The Supreme Court, in the recent *Babbitt v. Sweet Home Chapter* decision, upheld a Fish and Wildlife Service (FWS) regulatory definition of "harm" which could apply to significant adverse modification that result in actual death or injury to listed species.

conceptually on one point: that it would be highly desirable to further the goal of conserving endangered species through greater voluntary participation and involvement of the private sector and by providing positive incentives that reward landowners for taking action to protect or conserve endangered or threatened species and their habitat.

Incentives for private landowners may take a variety of forms, including tax benefits, alternative regulatory and management approaches, direct payments, greater participation in decision-making, and technical assistance, among others. There has been agreement at the theoretical level that such incentives are desirable; however, their actual design, cost, and implementation have been given only modest attention to date. In addition, there have been limited opportunities for the various stakeholders and interested parties to explore areas of agreement on the nature of effective incentives. The Keystone Dialogue on Incentives for Private Landowners to Protect Endangered Species sought to address this need by providing a forum for discussion and consensus-building on the development of incentives and the removal of disincentives.

The Dialogue Group agreed that conserving endangered species is an important national goal, but that endangered species protection is a public concern and should not unfairly burden individual private property holders. While Dialogue participants could not reach consensus on the issue of compensation to private landowners, all participants agreed that enactment of incentive programs, such as those contained in this Report, would help address fairness to landowners as well as endangered species protection.

Dialogue participants also acknowledged that many of the proposals contained in this Report will require additional funding. However, the Dialogue Group feels that such expenditures will increase species protection, reduce animosities and litigation associated with the ESA, and create significant long-term cost savings. Given the current political climate to reduce spending, Dialogue participants have proposed ways to generate the money needed through mechanisms such as revolving funds.

The issue of incentives for private landowners appears to provide the best opportunity for a diverse group of interests to reach some agreement. It is hoped that the recommendations in this Report, and the discussions in which they were reached, will positively impact the ESA debate and help provide solutions to very difficult issues.

Scope of the Recommendations and Discussions

Dialogue participants discussed a wide range of ideas for creating incentives and removing disincentives. The Dialogue Group developed 18 proposals on which there was general consensus. Consensus was defined by the Dialogue Group to mean that participants could live with a proposal. Individual participants therefore might support some proposals more than others. There were three areas of proposals:

Increasing Participation in Voluntary Endangered Species Conservation

Pre-Listing Conservation Agreements
Safe Harbors
"No Take" Cooperative Agreements
Guidance to Landowners and Agencies at Time of Listing
Technical Assistance
Recognition/Award Program
Conservation Reserve Program Approach for Endangered Species
Recovery Plan Incentives
Increased Regulatory Flexibility

Habitat Conservation Planning

Streamlining the HCP Process
Seed Money for Community-based HCPs
"No Surprises" Policy

Financial Incentives and Resources

Estate Tax Reform
Estate Tax Concepts for Land Conservation
Federal Tax Credits for Endangered Species Management Practices
Tax Credit for Property Taxes
Deducting Costs Associated with Endangered Species Habitat
Federal Land Resource and Assessment Team
Endangered Species Habitat Trust Fund

In order to jointly evaluate these ideas and help determine which held the most promise for potential consensus proposals, participants developed a list of characteristics they would like to see in any program to create incentives or remove disincentives. Specifically, Dialogue participants felt that any incentive program should:

- be voluntary;
- be financially feasible (for the landowner, relevant government agencies, etc.);
- have a positive ecological impact;
- be appealing and useful to landowners;
- encourage partnerships;
- be politically feasible;
- be simple and clear;
- achieve a balance between consistency and flexibility;
- provide certainty for the landowner;
- be based on precedent and previous experience;

- be implemented at the management level (local, state, or federal) appropriate to achieving the desired result;
- consider anti-trust implications;
- consider different regulatory scenarios; and
- consider the relationship of the incentive to other statutes.

The Dialogue Group made no assumption about whether the existing regulatory requirements will be continued as they currently are, changed, or eliminated altogether. To the extent possible, the Group's proposal should have merit regardless of what Congress chooses to do with respect to the existing regulatory requirements. Some of the tax proposals are clearly of this type. Other proposals necessarily assume that some form of regulatory requirement will continue, though the nature of those requirements could be altered. For example, all the proposals related to Habitat Conservation Plans (HCPs), and the various proposals incorporating some notion of "safe harbor," necessarily assume some form of regulatory requirement, since without any regulatory requirements there will obviously be neither HCPs nor any need for safe harbors.

It was recognized that issues beyond the scope of the ESA hamper the overall ability of stakeholders to engage in innovative approaches to protecting endangered species. Provisions under the Federal Advisory Committee Act (FACA) and various anti-trust laws have constrained the use of cooperative approaches to implement the ESA. While the Dialogue Group recognized the fundamental intent of FACA to promote open decision making and the importance of anti-trust laws, participants agreed that these overriding issues need to be addressed but were beyond the scope of this Dialogue.

The Dialogue Process

The goal of this Dialogue was to outline strategies to eliminate disincentives and promote incentives for endangered species conservation on private lands. In order to achieve this goal, Dialogue participants adhered to three ground rules:

1) People participated as individuals, not as formal representatives of their interest group or organization.

2) All conversations were off-the-record and not for attribution.

3) The Final Report was not released to the public until agreed to by the entire Group.

Another informal ground rule was that documents produced in meetings or by a Dialogue member could be circulated to others outside the Group for comment, with the explanation that they were draft discussion pieces only and did not represent the consensus of the Group.

The dialogue process, driven by these ground rules, provided an opportunity for people to develop a common understanding of complex and controversial issues, explore respective interests, and develop consensus proposals that might help shape public policy. The value of this Report lies not only in the proposals *per se*, but also in the exchange of information and discussion that took place in developing them. This process facilitated give-and-take between parties and enabled them to jointly develop proposals. The resulting document is designed to be an accurate portrayal of the Dialogue Group's discussions. In some areas, this included consensus proposals, and in other areas an elucidation of where differences of perspective still exist.

Due to current and expected Congressional action on these issues, the Dialogue Group operated within a very short time frame. They met twice in two-day meetings (June 5-6, 1995 and July 24-25, 1995). At the first meeting, the Group identified a number of incentives which were categorized in two groups: financial incentives and regulatory and administrative incentives. The Dialogue Group was divided into two work groups organized to address these two categories. Each participant was involved primarily with one work group. Between meetings, Dialogue participants wrote, distributed, reviewed, and rewrote draft documents describing potential incentive programs. These documents were compiled into a draft Final Report, which was discussed, revised, and finalized at the second meeting. By signing on to this Final Report, participants indicate that the document is an accurate reflection of the Dialogue Group's discussions, and that they can live with the consensus proposals contained within it.

The Dialogue Group recognized that implementation of several of the incentive proposals will require additional funding. To address this issue, the Dialogue Group considered several potential revenue generating mechanisms, including:

- increased concessionaire fees at federal parks and refuges;
- increased user fees at federal parks and recreational facilities;
- manufacturer's excise tax on certain recreational equipment; and
- a federal real estate transfer tax of some type.

Although there was consensus on the need for additional funding, no consensus could be reached on any of the above mechanisms.

About The Keystone Center

The Keystone Center is a nonprofit public policy, science, and education organization, founded in 1975 and headquartered in Keystone, Colorado. The primary mission of the Center's Science and Public Policy Program is to resolve conflicts and facilitate mutual understanding and education among diverse parties. Through the use of neutral, professionally managed processes of dialogue, mediation, and negotiation, the Program enables people with different perspectives to come together to clarify issues in dispute, explore productive ways of dealing with them, and develop and document consensus

proposals for creative action by federal, state, and local government and other decision makers. The Keystone Science and Public Policy Program works at the local, national, and international levels and concentrates in seven substantive areas: Agriculture, Food, and Nutrition; Environmental Quality; Natural Resources; Biotechnology and Genetic Resources; Energy; Health; and Science and Technology. Funding for Keystone Dialogues, including this one, is provided by private foundations, corporations, and government agencies.

In 1936, in an essay titled "Threatened Species," Aldo Leopold essentially described the essence of conservation agreements when he called for the formation of a joint committee of stakeholders to inventory and define the management needs of the "threatened members of our fauna and flora." Once identified, each species was to be assigned a custodian. Public and private sector cooperation was essential, and Leopold's belief in the inherent nature of humans to be responsible stewards of the land and its associated natural resources gave rise to his optimism for the success of this approach: "I am satisfied that thousands of enthusiastic conservationists would be proud of such a public trust, and many would execute it with fidelity and intelligence. I can see, in this set-up, more conservation than could be bought with millions of new dollars, more coordination of bureaus than Congress can get by new organization charts, more genuine contacts between factions than will ever occur in the war of the inkpots, more research than would accrue from many gifts, and more public education than would accrue from an army of orators and organizers."

With regard to the conservation of threatened and endangered species, if the private landowner had the option to be a voluntary participant empowered with flexible management options, or a coerced and reluctant participant who did the bare minimum as dictated by a regulatory process, it is not difficult to predict which approach he or she would choose. If the voluntary, flexible approach focused on species before they were listed, both the species and stakeholders would undoubtedly benefit. The conservation agreement process described below is an innovative, solution-oriented strategy very similar to Leopold's proposal in 1936: put the responsibility in the hands of those that own or have management responsibility for the resource, oversee the process, and encourage creative management strategies. It is a strategy whose time is long overdue.

Proposal

The intent of conservation agreements is to build formalized, voluntary support for the conservation of candidate species through innovative partnerships. The ESA should be amended to encourage these creative partnerships between the public and private sectors; partnerships that result in a win-win for the affected species, its habitat, and all affected stakeholders. A stable and available funding mechanism for the development of pre-listing conservation agreements should also be secured through codification. A discussion of the pre-listing conservation agreement process follows.

Discussion

Emphasis on early conservation efforts for candidate species allows all stakeholders, public and private, to work together to stabilize and recover these species and their habitats before listing becomes necessary. By addressing the conservation of candidate species, all stakeholders can retain management flexibility, reduce conflict with development, minimize the costs of recovery if listing is pursued, and alleviate the potential for future restrictive land use policies.

Chapter 1

Increasing Voluntary Participation in Endangered Species Conservation

Introduction

A number of changes would create incentives for better endangered species conservation on private land by promoting and encouraging the more effective participation of private landowners in conservation efforts. Issues considered by the Dialogue Group under this heading include: the more effective provision of technical assistance to private landowners; the expanded use of agreements regarding species in advance of their listing; "safe harbor"; and other similar conservation agreements. The Dialogue Group also concluded that farm conservation programs such as the Conservation Reserve Program (CRP) could, with minor changes, yield significant additional endangered species benefits, and that other, entirely new programs modeled on those existing programs could also be valuable.

Pre-Listing Conservation Agreements

Problem

The majority of land in the United States is in private ownership; therefore, any effort to conserve an endangered or threatened species or implement an ecosystem or landscape management strategy is more likely to succeed if the private sector is a willing participant. This is particularly salient in the Northeast and South where approximately 90% of all lands are in private ownership. With regard to regulatory issues in general, and the ESA specifically, many private landowners are reluctant to willingly and voluntarily participate in management practices that would encourage the proliferation of threatened or endangered species on their lands. This reluctance stems from concerns (real and perceived) that the presence of a listed species would adversely limit the management options for their lands or diminish the value of their property, rather than arising because of either the lack of a personal resource stewardship ethic or desire to benefit the resource. Another perception of some segments of the private sector is that government agencies or advocacy groups use the regulatory authority of ESA to impose their values for land management rather than seeking solutions which benefit both the affected species and the landowners who own or control its habitat.

The conservation agreement process is appropriate for candidate species for which conservation actions are needed. If the majority of stakeholders who control the habitat for a particular species are involved in the process, the likelihood of success greatly increases. One important point in the development of the conservation agreement process is that all parties involved must believe that the conservation agreement will significantly improve the chances the species will not be listed in the future.

The conservation agreement should be a three-step process that brings all major stakeholders voluntarily to the table throughout. The first step in the process would be the conservation assessment, which should clearly state current demonstrated knowledge about the species, identify all assumptions relative to the species, and document specific research needs. Clearly stating the difference between knowledge and assumption is important because this will alleviate much of the fear that bias for specific land management strategies will drive the process, rather than specific needs of the species. Second, the conservation strategy would focus on threats to the well-being of the species, goals for removing those threats, and adaptive management strategies to achieve those goals. Federal, state, and private stakeholder responsibilities for development and implementation should be delineated. Such an agreement would, in essence, be a recovery plan for the species developed and implemented on a voluntary basis without regulatory restraint. It is important to recognize that the conservation strategy should not be prescriptive in nature; rather, specifics of prescriptions should be left to the conservation agreement itself. Third, the conservation agreement then becomes a collaborative process with the public and private land management entities and other affected parties. Specific approaches for conservation would reflect differences in land management objectives and responsibilities for both public and private lands. There may not be just one "right" or "cookbook" management strategy; rather, multiple management strategies or options may be the species' best hope for recovery.

In order to achieve maximum support from the private sector, nearly all participants believe there must also be some certainty or "safe harbor" guarantees made through the pre-listing conservation agreement should the species warrant future listing. If a participant follows the conservation agreement faithfully, and the species still becomes listed at some point in the future, then provisions agreed to in the conservation agreement should carry through to the recovery plan, habitat conservation planning, or "no-take" agreement. Present and anticipated threats to the species should be addressed in the agreement, and its terms should satisfy the standards of Section 10 of the ESA (i.e., management practices outlined in the agreement should not contribute to the further decline of the species.)

The advantages of such an approach include: (1) more flexibility in management options; (2) removal of an immediate regulatory burden; (3) removal of the threat of prosecution for incidental take for private landowners; (4) restoration efforts move from the bottom up, rather than the top down; (5) cost effectiveness; (6) all willing stakeholders are equal partners; (7) species protection becomes more likely; (8) participation by the private sector promoted; (9) certainty; and (10) possible application to address multiple species or issues on a landscape basis. Although more complicated, pre-listing agreements would be particularly

effective for wide-ranging species or for species groups tied to specific ecosystems that cross multiple ownerships and wide geographic boundaries. Proactive partnerships also should encourage voluntary management at the landscape scale, and serve as the key to avoiding intensive, crisis-driven efforts to find workable solutions after a species has been listed.

A few points to keep in mind to ensure the success of conservation agreements:

- All parties must believe the conservation agreement will improve the chances a species will not be listed.
- Sound science should drive the process.
- Participation is voluntary.
- Prescriptive language is not a part of the conservation strategy, and any specifics should be left to the conservation agreement itself.
- Management flexibility should be encouraged; adaptive management strategies are more appropriate than rigid "cookbook" approaches.
- Certainty—some guarantees must be made in the pre-listing agreement should the species be listed in the future (i.e., the conservation agreement would roll over to a HCP should the species be listed). Review of the agreement at the time of listing will be needed to ensure compliance.
- The listing process would continue to be triggered should the species continue to decline to the point its existence would be threatened.
- Adequate funding, administrative support and consistent application of the conservation agreement process throughout the Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS) is essential.

Safe Harbors

Problem

Under existing law and regulations, it is a disincentive for landowners to maintain or create habitat that might be favorable to the conservation and/or recovery of a listed species. That disincentive is the attraction of a listed species into the habitat, and the associated land use restrictions that may result from the ESA's Section 9 "take" prohibition. Only recently have means of overcoming that disincentive within the existing framework of the law been identified. The 1995 North Carolina Sandhills Habitat Conservation Plan was the first to use the authority of Section 10 to give assurances of "safe harbor" against any added legal responsibility to landowners willing to engage in habitat improvements for endangered species. Landowner response to that plan has been very positive and other similar "safe harbor" agreements are being developed.

Proposal

Most members of the Dialogue Group believe that the ESA should be amended to give explicit Congressional endorsement to, and encouragement of, the expanded use of "safe harbor" agreements with landowners who agree to maintain or enhance suitable but currently unoccupied endangered species habitat or to enhance currently occupied habitat so as to increase its utilization by endangered species. This "safe harbor" would protect the landowner from any restrictions on land use that might otherwise occur as a result of the immigration of listed species (either new individuals or new species) into the maintained, enhanced, or created habitat. Thus, the landowner would be able to modify the habitat at any time in the future based solely upon his/her objectives. The "safe harbor" option is not necessarily appropriate for all species in all situations but should be encouraged where it will yield a net benefit for the resource. This provision would not relieve the landowner of any obligations to listed species already present at the time of the development of the "safe harbor" agreement. That is, the unoccupied habitat that is being maintained, or the new habitat being created, must be recognized as providing potential habitat for listed species in the area.

The FWS, or NMFS, must be notified before the landowner takes an action that would modify or eliminate the critical elements of the habitat for the listed species in the area. This is a notification requirement only, to give the respective agency the opportunity to purchase the habitat, trap and remove some or all of the listed animals from the area, or reach some other agreement with the landowner to protect the habitat, if it is deemed essential for the species.

Discussion

Benefits:

- Removal of a disincentive (fear of future regulation) to conserve habitat on private lands.
- Voluntary maintenance or development of favorable habitat for listed species on private lands.
- Participation by private landowners in the conservation of listed species.
- Limited cost to the federal government.

Concerns:

- Habitat may be temporary.
- Temporary habitat may form a biological sink.
- Take may occur with future habitat modification.

Sixty-six percent of all forest land in the U.S. is nonfederal. Therefore, involvement of many private landowners in the conservation of federally listed species would provide

significantly greater opportunities for recovery. However, many private landowners are not going to voluntarily engage in management activities beneficial to listed species if doing so results in federal restrictions on their land use activities. On the contrary, under existing law, landowners will most often strive to avoid such restrictions by harvesting or modifying existing unoccupied habitat; or by refraining from management prescriptions which would otherwise be acceptable or even preferred that might create habitat used by listed species.

This disincentive could be removed by offering a "safe harbor" option under the ESA. Authority to enter into safe harbor agreements should be expressly provided for within the ESA so as to encourage their greater use across the country and for additional species.

To be attractive to the landowner, the "safe harbor" agreement must be voluntary, and must exempt the landowner from all future land use restrictions that might otherwise be incurred because of any listed species moving into the habitat covered by the agreement. Further, subject to the terms of the agreement, the landowner must have complete control over when and how the habitat might be used, modified, or liquidated.

To be attractive to the regulatory agencies charged with protection and conservation of listed species, the agreement reached must have some net benefit for listed species. This will be readily apparent in most cases, since such an agreement would provide habitat not otherwise available for listed species (even if only temporarily). The habitat being maintained or created also is likely to be of benefit to listed species in the area; otherwise, there would be little risk of attracting listed species to the site, and, therefore, no need for such an agreement.

Further, subject to the terms of the agreement, in many cases, the habitat being maintained or created will not likely function as a population sink as it will be "extra" habitat for the species in the area. In those cases where the private-land habitat becomes successfully occupied, and represents a significant part of very limited habitat for listed species, the agencies would have the opportunity to purchase the land or develop some other voluntary agreement with the landowner to ensure long-term protection.

Alternative Proposal

One member of the Dialogue Group believes that, although the "safe harbor" concept appears promising, it should not be implemented nationwide until its potential effects on the recovery prospects of listed species are better understood. Proponents of the "safe harbor" concept are appropriately concerned that landowners may be managing land to avoid creating habitat that might attract listed species. However, the proposed response to this problem—granting an ESA exemption for any species attracted to the land after the inception of the "safe harbor" agreement—could create more problems than it solves. Species attracted to the unregulated "safe harbor" land could leave habitat that had enjoyed the full protection of the ESA. As a result of the animal's departure, this habitat could lose its ESA protection and be left vulnerable to development pressures. Thus, application of the "safe harbor" concept on

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a broad scale could result in listed species becoming increasingly dependent upon habitat that does not benefit from the protection of the Act. Although acquisition of this habitat may be an option in some circumstances, sufficient funding may not be available to address the potentially substantial need for protection. Further study of the potential "biological sink" effect described here should be done before a nationwide "safe harbors" policy is adopted, so that the policy can be designed in a manner that maximizes positive conservation incentives for landowners without contributing to the further decline of listed species.

"No Take" Cooperative Agreements

Problem

Landowners who might take voluntary steps to maintain, enhance, set aside habitat, or create habitat now are sometimes reluctant to do so because of land use restrictions resulting from the "take" prohibition. If landowners could have some assurance that activities they conduct now would not lead to prosecution under the ESA, they would be more willing to participate in activities to preserve habitat.

Proposal

The ESA should be amended to clearly permit and encourage the FWS to enter into voluntary agreements with landowners and state and local governments to develop management plans for listed species that could be recognized as "no take" agreements. Such agreements would give the landowner and state or local agency the assurance that the land management practices described would not lead to a take, thereby providing a level of management certainty.

Discussion

There will need to be a mechanism to monitor the landowner's compliance with the terms of the agreement. However, private landowners are concerned that the ESA will intrude on their lives. For that reason, there must be some provision to ensure that review of the agreement is conducted as infrequently as necessary yet still accomplishes its goals. Additionally, a rapport would likely develop between landowners and government, if the review were conducted by local officials, who would play a critical role in the development of the agreement.

The program should be voluntary in/voluntary out in order to gain the support of landowners. However, without some sort of mechanism (through incentives and binding agreement) to ensure continued participation, the program would not be effective.

With few exceptions, this type of cooperative agreement would easily meet the parameters of a successful incentive program. It should elicit a favorable response from landowners and

could be tailored to fit specific landowner and species needs. Because these types of programs have already met with some success, they would fit the political feasibility requirement of the Dialogue Group as well. Preservation and/or enhancement of habitat would obviously be ecologically beneficial and could elicit favorable results in a relatively short period of time. Potential long-term results would include more habitat to sustain species populations, thereby avoiding listings altogether.

Guidance to Landowners and Agencies at Time of Listing

Problem

Section 9 of the ESA prohibits the "take" (defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct") of federally listed endangered species. Federal regulation defines the term "harm" in the take definition to mean "...an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering."

The problem is that it is not always clear to private landowners what is and is not a legal "taking." This is especially true where the "harm" definition comes into play (i.e., where habitat modifying activities are involved—or where the regulatory "harass" definition (not given above) is involved.) Exactly where the "harm" threshold is (i.e., where a habitat modification results in death or injury of wildlife and is thus a taking) is not always clear; the same can be said of the "harass" threshold. This can leave landowners in the position of not knowing what is or is not a take. Secretary Babbitt addressed precisely this issue in one of the six Department of Interior policy statements published in the Federal Register July 1, 1994.

Regulatory disincentives for private landowners to manage their lands in a manner that maintains, enhances, or creates endangered species habitat is also addressed in this section. For example, a landowner may find that the Section 9 take prohibition restricts present or future land uses because a listed species is present on the property, and removal of the habitat and prevention of potential land use restrictions may result.

Proposal

The ESA should be amended to require that the following information be published in the Federal Register as part of the final listing package at the time any new species is listed:

1. A description of activities—to the extent known at the time and in as specific a manner as possible—that would not be considered likely to result in a prohibited

taking of the species under Section 9 of the ESA, as well as a description of activities that would be considered likely to result in a prohibited taking. Publication, as necessary, of subsequent descriptions after the initial species listing to clarify changes or additions to the original description should also be required. In addition, the geographic range of the species would be identified. For those activities which are uncertain as to whether they would result in a prohibited taking, or which are not mentioned in the published descriptions, a contact should be identified in the final listing document or subsequent notifications to assist the public to determine whether a particular activity would constitute a prohibited taking under Section 9. Sound science should drive the process. This requirement essentially would codify Secretary Babbitt's July 1, 1994, policy into the law.

2. A description of any regulatory disincentives to conservation of the species by private landowners known to exist at the time the species is listed, together with recommendations or suggestions for eliminating or correcting such disincentives (e.g., through the Section 4(d) process).

Discussion

This requirement would assist private landowners who engage in a wide variety of land use activities to determine whether their activities conform to ESA legal standards; to enjoy greater regulatory certainty; and to conduct more accurate and predictive land use planning activities. It would also encourage the government to better define its take standards where those standards require interpretation of the "harm" and "harass" definitions.

This requirement would also result in explicit identification of private landowner disincentives where they are known and recommendations for their correction. It would encourage federal and state agencies and private landowners to work cooperatively to eliminate, reduce, or otherwise correct such problems, which in turn would result in the development of working partnerships and recognition of mutual goals and objectives. The Section 4(d) process and the new "safe harbor" program are possible mechanisms to correct disincentives to private landowner participation in endangered species management programs.

Technical Assistance

Problem

Congress stated that its fundamental purpose in enacting the ESA was to provide a means whereby the habitats upon which endangered species and threatened species depend may be conserved, and to provide a program for the conservation of those species. As currently implemented, these purposes are accomplished by threat of application of the penalty provisions of Section 9. Rather than relying entirely on regulation, incentives are a preferable way to achieve species and habitat conservation that requires either the assistance

or active participation of private landowners. Consequently, the ESA sometimes is perceived to result in unnecessary federal restriction upon land and water use practices.

Current ESA provisions and recent Department of Interior actions have provided some flexibility and certainty through the HCP process. Those involved with suburban development and timber activities have been the primary cooperators to date. A simpler approach is needed to assist rural landowners who are often involved with more "traditional" and/or solely residential activities.

The way private landowners are approached and worked with at the local level will be critical to the success of technical assistance programs. It should be recognized that preventing certain actions through prohibition will not, in and of itself, protect species. The assistance and active involvement of landowners will also be a critical component of conserving species.

Proposal

Technical assistance should be provided to private landowners. This can take the form of information, material and financial assistance, on-site expertise regarding the needs of the species coupled with the objectives of the landowner, analysis of the consequences of certain land and water use practices, and an outline of the benefits to species and landowners of measures that would enhance conservation of the species and meet landowners' needs. Technical assistance is appropriate for both pre- and post-listing efforts.

Technical assistance also must include the coordination of the multiple agencies with which the landowner deals (e.g., bankers, Natural Resources Conservation Service (NRCS) personnel, FWS staff, state fish and wildlife biologists, land management specialists, etc.) and that would be integral to her or his successful implementation of new land management practices or, even, cessation of current practices Such coordination would encourage "one stop shopping" for information about permits, knowledge, expertise, and the provision of technical assistance.

Fundamental to the success of technical assistance to private landowners is the need to provide such assistance based on voluntary requests whenever applicable. Even when there is a necessity for formal application of the ESA, technical assistance that recognizes the importance of relationships and capitalizes on opportunities for preventative, pre-listing activities that may preclude the need to list under the Act, will benefit the species. It is also important for Congress to provide adequate funding in support of technical assistance programs since the degree to which the FWS and other federal agencies will be able to participate will be directly related to the availability of such funding.

Discussion

This proposal envisions a voluntary technical assistance program. It necessarily must include information, provision of material and money where necessary, and the availability of in-community individuals who have the biological expertise, comprehensive understanding of local land and water use practices and limitations, community relationships, and an employment mission statement that places top priority on working with landowners to develop voluntary habitat and species conservation and enhancement measures. At a minimum, information must be provided that specifies the implications of either potential or actual listing of a species upon an individual's current land use practices. It should be elaborated in common sense terms and everyday language.

The Dialogue Group also proposes that needs as varied as riparian fencing, seed for planting of alternative crop covers, off-stream water storage, fish screens, and equipment required for alternate land management practices be addressed through such a technical assistance program. In other words, there must be exceptional flexibility to meet the needs of a particular landowner and a particular habitat.

This proposal would stimulate significant opportunities to engage in pre-listing and listed species efforts by landowners. The current inclination of landowners is to prevent the application of the Act to their property, or to naturally incorporate appropriate land management practices, species conservation measures, or other techniques into their overall land management ethic in order to "do the right thing."

Technical assistance also could be provided through a toll-free telephone number for landowners to call without onus or fear of intrusive inquiries. This service would offer information about the interrelationship between a particular species, the owners' land, and the land management practices in which the owner is engaged.

In addition, information could be provided to private landowners to allow them to design mechanisms whereby endangered species become assets rather than liabilities. In southwest Missouri, private landowners who have greater prairie chicken booming grounds on their land are promoting the watchability of this natural event. A bed and breakfast centered on the prairie chicken is rapidly becoming a successful seasonal venture. Another example involves river communities that have promoted eagle watching, creating a major source of income.

Technical assistance must, by necessity, include opportunities for landowners to engage in reciprocal exchange of knowledge and information, to learn, to ask questions, receive information, and make decisions regarding use of their own land. To be successful, landowner technical assistance programs should be flexible and adaptable to local conditions and should be administered by the appropriate state and federal agencies in cooperation with the FWS. These programs should include some type of evaluation system to track utilization and provide information so that they can be further refined.

Recognition/Award Program

Problem

The current ESA regulatory framework does not recognize voluntary actions taken by private landowners to preserve local populations or critical habitats of threatened and endangered species. Numerous landowners, across the country, are maintaining and creating wildlife habitat and protecting natural areas through voluntary agreements. They are willing, but rarely recognized cooperators with state agencies and nongovernmental organizations (e.g., The Nature Conservancy.) In the case of threatened and endangered species, many landowners would be quite willing to preserve habitats and populations if they were simply recognized for their contributions.

Proposal

Provide an award or recognition mechanism in the landowners incentive and assistance programs that are included in amendments to ESA. The Secretary of Interior could be directed to establish regional and national awards and recognition programs for private landowners who manage their land to enhance, improve, establish, and maintain threatened and endangered species habitats. Promotion of the awards, nominations, and documentation would be provided by state agencies. Recognition could be in the form of plaques, certificates, and additional technical or financial assistance regarding populations and habitats.

Discussion

Landowners have repeatedly shown that they are willing to assist in conservation measures if they are aware of the need and of the importance of their particular tract of land, and if they are simply asked to be participants. Landowners are quite proud of their involvement in conservation and their accomplishments. The establishment of regional and national awards by the Department of Interior would be an effective but inexpensive program to recognize the invaluable, voluntary contributions by landowners to the purposes of the ESA.

Conservation Reserve Program Approach for Endangered Species

Problem

Landowners lack a voluntary, incentive-based program for restoring or conserving endangered species habitat. Such a program, if it included contractual commitments of fixed duration, and offered assurances that landowners would not be obligated to endangered species habitat protection beyond the term of the contract, could lead to greater acceptance of endangered species conservation and adoption of long-term management practices beneficial to their habitat.

The existing Conservation Reserve Program (CRP) could provide a model for developing a private land endangered species conservation program. CRP pays farmers to retire highly erodible croplands and other environmentally sensitive lands from commodity production for ten years and to establish it to protective vegetative cover. CRP is administered by USDA under authority of the 1985 Food Security Act (Farm Bill). More than 36 million acres have been enrolled in CRP at an average cost of $50 per acre per year.

While CRP was not originally implemented as an endangered species program, it nevertheless has had a positive impact on several federal and state listed species. Eighty-seven percent of CRP lands are established to grass and two-thirds are located in the Great Plains. Two well-documented CRP success stories are the greater prairie chicken and Columbian sharp-tailed grouse—state—listed endangered species that have responded to large acreages of grassland habitat created by CRP in the Great Plains. CRP is also credited with reversing declining populations of numerous endemic grassland birds and helping to prevent them from becoming endangered. Discontinuation of the program or significant changes to its distribution would result in the loss of these recent gains for wildlife.

Proposal

The Dialogue Group recommends increasing the endangered species conservation benefits of the existing CRP program. Threatened and endangered species could benefit from the establishment of improved cover and management practices on CRP lands without significantly changing the primary purpose of the program or its distribution. Use of locally adapted native grasses and implementation of controlled burning, mowing, or other approved practices intended to mimic natural periodic disturbances to native prairie could improve CRP habitat conditions for endangered species. Additional administrative incentives also could be offered for limited enrollment of highly erodible cropland within the range of known endangered species. However, expansion of program participation criteria beyond the original scope of CRP likely would be met with political opposition, based on both fiscal and regional considerations.

The Dialogue Group also recommends that a program modelled after CRP should be enacted by Congress to provide incentives for all private landowners to restore endangered species habitat. To repeat the success of CRP and its popularity with landowners, such a program should include the following key components:

1) Voluntary—Landowners should not be forced into the program through the possibility that use restrictions would be placed on the land if they did not participate.

2) Limited duration—Five to ten years, with the right to renew. Perpetual easements are a possibility; however, a program based entirely on easement would limit participation.

3) No jeopardy—Landowners would need assurances that at the end of the program term the land could be placed in another use.

4) Assurance of funding—Funding for annual contract payments must be assured for the length of the contract period. Ideally such a program should have a dedicated funding source not dependent upon annual appropriations.

5) Competitive bidding—Competitive bids should be used to maintain cost-effectiveness. Compensation should be commensurate with level of land use restriction and/or amount of habitat restoration not to exceed local prevailing rental rates for comparable lands.

Discussion

Possible hurdles may include:

1) Eligibility—Clear criteria are needed for determining eligibility. Enrollment must be targeted to result in measurable gains for listed species.

2) Administration—The US Department of Agriculture (USDA) has established a reputation and gained experience in working with private landowners. However, jurisdiction and expertise on other endangered species issues is within the Department of Interior.

3) Funding—With proposed cuts to existing farm programs, obtaining funding for a new CRP-type endangered species program within the agriculture budget is remote.

Recovery Plan Incentives

Problem

It is a disincentive for private landowners to actively participate in ESA measures when they are not included in recovery plan development, when those plans do not provide clear indications of the precise measures that need to be undertaken or the goals to be accomplished, and when those plans do not outline clearly what activities may or may not lead to a take. ESA has not been structured to invite broad participation in the recovery planning and implementation process.

The recovery plan process is not designed to drive recovery responsibilities toward private lands. However, increased participation by private landowners encourages conservation and recovery of species and habitat.

Proposal

The Dialogue Group proposes that Congress amend the Act to create an energized recovery planning process. Such a process must actively involve private landowners and other stakeholders in its development and provide the incentive that certainty of knowledge about the species' recovery needs can bring.

Discussion

An energized recovery planning process must:

- articulate certainty and definitiveness as to recovery objectives for populations (including levels that would initiate the process to down or de-list) and habitat (including critical habitat where appropriate);

- identify specific and budgeted tasks for the respective agencies to achieve species recovery;

- ensure that jurisdictional entities, private landowners, industry, conservation organizations, and others have an opportunity for participation and ownership in the plan and its implementation;

- facilitate identification and integration of natural resources and land management programs at diverse jurisdictional levels, including regulatory, incentive (including tax and farm conservation), and educational (including technical assistance);

- address requirements in other federal land management statutes, such as the Federal Land Planning and Management Act (FLPMA) and National Forest Management Act (NFMA), vis-a-vis the ESA; and

- expedite, where possible and to the maximum extent practicable, the satisfaction of other mandatory consequences of listing under the Act, such as Section 7 consultation, application of Section 9 "take" and HCP/incidental take process.

A recovery plan that meets these goals will provide certainty to all parties involved in the recovery effort as to their responsibilities and liabilities, and how the ESA regulatory agencies (federal and state) will treat land use and land management activities—habitat impacts—under the Act. Activities by nonfederal landowners determined to have de minimis impacts on the recovery of the species, should be exempted from the Act through an "escape chute."

If nonfederal landowner actions of certain types are determined to have significant impacts on species recovery and could be minimized or mitigated, the recovery plan should identify those conservation actions which would mitigate the Section 9 "take" application, and

provide endorsement of those conservation measures to help expedite HCP/incidental take process.

Finally, an energized recovery planning process should identify, where possible, those nonfederal habitats that are so essential to the recovery of the species that no conservation measures can mitigate impacts to that habitat, and acquisition of that habitat from willing sellers (or "purchase" of the value of that activity through easements or other means) thus becomes a high priority.

Increased Regulatory Flexibility

Problem

Despite recent efforts by the Secretary of the Interior to develop flexible Section 4(d) rules, there still remains little regulatory distinction between a species listed as threatened and a species listed as endangered. Thus, no incentive exists for a private landowner to work to prevent a species from being up-listed or to recover a species to the point where it is down—listed. A Congressionally reaffirmed distinction between a threatened and an endangered species would increase flexibility in permitted land use practices for threatened species and, thus, present an incentive to landowners to conserve species and the habitat upon which they depend.

Proposal

Although legislation may not be needed in this area, Congress should reaffirm a regulatory distinction between a threatened and an endangered species. This reaffirmation should also encourage the Secretary to utilize 4(d) rules to allow regulated take by private landowners when a species is listed as threatened versus when it is listed as endangered. Landowners will thus be encouraged to maintain land use practices and habitat in a way that encourages down-listing or, eventually, de-listing.

Discussion

Increased regulatory flexibility in a recovery plan for a threatened versus an endangered species promotes greater use of regulated take under Section 9 of the Act. This is a direct incentive for a private landowner.

In addition, there is an incentive to be gained from the entire process of down-listing of species if this regulatory distinction is restored. Down-listing could be seen as a positive step encouraging private landowners to continue their efforts and communicating that such efforts on behalf of species conservation are rewarded with greater land management flexibility.

Chapter 2

Habitat Conservation Planning

Introduction

Habitat Conservation Plans (HCPs) under Section 10 of the ESA are an important mechanism for reconciling endangered species conservation needs with private property concerns. To improve the effectiveness of HCPs in achieving this important objective, the Dialogue Group identified several needed changes. Many of these relate to improving and expediting the process for developing and approving HCPs. Also proposed is a means of providing financial assistance to aid in the development of HCPs. If implemented, these proposal would provide significant incentives to expand the use of HCPs to reconcile conservation and private land use objectives.

Streamlining the HCP Process

Problem

The HCP program under Section 10 of the ESA has been growing rapidly in recent years. There were 62 permits issued between January 1993 and May 1995, compared to just 14 permits issued from 1983 to 1992. Increasingly, the HCP process is seen as a means of addressing the issue of endangered species conflicts on private lands. More and more landowners are turning to the process to resolve these types of problems. However, critics of the HCP process have suggested that it can be time-consuming, procedurally burdensome, and, as a result, more expensive than necessary. Obtaining an incidental take permit requires an HCP, associated documents, and public notification under Section 10 of the ESA; ESA Section 7 review; and National Environmental Policy Act (NEPA) compliance—or three separate tiers of review. This is in addition to the time it takes to negotiate and prepare the HCP. Small landowners with relatively minor projects and modest resources can be especially hard hit by the complexities of the HCP process.

One challenge is how to minimize or avoid duplicative NEPA and ESA Section 7 documentation. The ESA strictly mandates the contents of an HCP, as well as criteria for issuance of permits. Similarly, NEPA, like the HCP process, requires analysis of project effects, an alternatives analysis, and public notifications. Even when duplication is reduced through cross referencing and joint notifications, document preparation and procedural time and costs under NEPA remain significant, especially when environmental impact statements (EISs) are prepared. Section 7 review of an HCP permit application also duplicates the HCP

in its effects analysis, incidental take statement, and required assurances that the action will not jeopardize the survival and recovery of the species in the wild. Other problems cited are the lack of mandatory deadlines for permit review and processing and uncertain standards for HCP adequacy.

If the HCP program is to meet the increasing demands being placed upon it, and realize its full potential as a planning and conservation tool, it must be streamlined and better standardized. FWS is currently considering various HCP administrative reforms in light of these goals. For example, the agency is finalizing a Section 10 policy handbook that establishes HCP categories based on scope and impact of the project; ties document and processing requirements directly to those categories; and significantly streamlines the process for small-scale projects with minor effects. However, these improvements need to be further codified and expanded.

Proposal

1. The ESA, or its implementing regulations, should establish an expedited HCP process for small-scale projects with minor impacts. Such "low-effect" HCPs could be characterized as those involving minor effects on federally listed or candidate species or on other environmental values or resources whose consideration is required by NEPA and other federal statutes. Examples of "low-effect" activities include those that:

   (i) impact a minor percentage of the species' population or range;

   (ii) impact ecologically minor portions of the species' range;

   (iii) create adverse conditions for the species that are highly transitory or of minor invasiveness or duration;

   (iv) involve species with a high reproductive capacity, population numbers that are stable or rising locally or rangewide, or specific animals that are ecologically nonessential to the species; or,

   (v) involve a planning area that is of small size or simple ownership pattern.

2. Such "low-effect" projects could be:

   (i) Addressed under a "short-form" HCP. A short-form HCP would be similar to a standard HCP except that analysis of alternatives not selected and unforeseen circumstances would not be required. The rationale for this is that low-effect projects typically have few reasonable alternatives (i.e., the landowner is committed to a specific parcel of land or course of action), or are so small in scope or brief in time that significant unforeseen circumstances are unlikely.

(ii) Addressed under informal Section 7 consultation procedures rather than formal consultation. The advantage of this is that informal consultation is faster and procedurally simpler than formal consultation. However, to do this it must be assumed that if an HCP meets the standards of the "low-effect" category, its effects will not be adverse to the species as a whole (see discussion).

(iii) Categorically excluded from NEPA requirements.

3. NEPA requirements for HCPs that are not "low-effect" could also be relaxed. This can be accomplished in one of the following ways:

(i) Eliminating NEPA requirements for HCPs entirely;

(ii) Allowing preparation of environmental assessments (EAs) for all HCPs not categorized as "low-effect" and require no EISs for HCP efforts; or

(iii) Including a NEPA-style alternatives analysis within the HCP as a substitute for full NEPA analysis.

4. Each of the options discussed in numbers 1 through 3 above will need to address the issue of cumulative effects that may result from approval of numerous individual low-effect HCPs. This problem should be addressed by requiring that the HCP be consistent with an overall species conservation strategy, typically in the form of a recovery plan, that considers the species' habitat requirements as a whole. Expedited or "short-form" HCPs should also include a brief cumulative effects analysis or should document the specific conservation strategy on which the HCP is based.

5. FWS should be required to more clearly define (i) what constitutes "take"—especially under the "harm" definition—for species addressed under HCPs; and (ii) the standards under which HCPs are approved or denied.

Discussion

Each of the five proposals are discussed separately:

1. An expedited process for small landowner and other "low-effect" HCPs is critically needed. Presently, the time and costs required to obtain an incidental take permit for these HCPs are well out of proportion to the severity of their effects, resulting in tremendous frustration on the parts of affected landowners. The proposals outlined above would create an HCP system specifically tailored to the needs of these types of projects and landowners.

2. A short-form HCP for low-effect projects, together with a categorical exclusion from NEPA, would substantially streamline the HCP process for small landowners. FWS

already uses "template" HCPs in some areas to assist small landowners, but eliminating unnecessary HCP sections would aid small landowners still more. It would also increase support for the HCP program, since procedural requirements with little practical value tends to generate public skepticism. FWS is already revising its NEPA regulations to categorically exclude low-effect HCPs.

Section 7 of the ESA requires federal agencies to consult with the FWS whenever any action they authorize, fund, or carry out may affect a listed species. Under the Section 7 regulations, such consultation can conclude informally if the federal agency determines—with written FWS concurrence—that the proposed action "is not likely to adversely affect" the species or its critical habitat (formal consultation requires preparation of a full biological opinion). In the case of an HCP, FWS is the federal agency and the action being consulted on is issuance of the permit. In the case of a "low-effect" HCP, since take is authorized by the incidental take permit (not the incidental take statement in a biological opinion, as in most federal actions) and the effects of the take are by definition minor (i.e., not likely to adversely affect the species), informal consultation might be possible and could help streamline the permit review process.

This leaves open the question whether Section 7 consultation should be required for larger-scale HCPs, and the relationship generally between the Section 7 and Section 10 programs. Congress should clarify its intent about the level of Section 7 review required for HCPs in light of current practice and existing duplication between the two programs.

The above changes could be accomplished by policy revisions, federal regulation, or legislation. At a minimum, Congress should explicitly recognize the need for a streamlined HCP process for small landowners and other low-effect HCPs and should mandate development of specific, integrated procedures for addressing this problem.

3. Eliminating or relaxing NEPA requirements from the HCP process would obviously save both time and money. However, such savings would ultimately have to be balanced against a reduced scope of analysis of environmental effects.

One alternative to the NEPA problem would be to prepare EAs for all categories of HCPs. Currently, an HCP requires an EIS if the activities it addresses are expected to have major environmental effects significantly affecting the quality of the human environment. However, document preparation and public notification requirements for EAs are considerably simpler and more flexible than for EISs. Another alternative would be to include a NEPA-style alternatives analysis within the HCP. This would expand the alternatives analysis currently required by Section 10 from a consideration of endangered species effects only to consideration of all environmental effects. These options could achieve a balance between the need to make informed environmental decisions and doing so in an expedited and cost-efficient manner.

4. The primary risk of an expedited HCP process and "short-form" HCP is that the impacts of multiple low-effect projects might become cumulatively significant. This might happen, for example, if excessive habitat, important habitat elements, or genetically important individuals were lost because of uncoordinated or inadequately considered permit issuance. The methods suggested in the proposal are intended to prevent this result.

5. What constitutes a "taking" is not always clear, particularly where the "harm" and "harass" definitions are involved. Private landowners consequently may be uncertain whether specific activities are likely to result in a prohibited taking and therefore require a Section 10 permit. FWS staffs may also be uncertain about where, precisely, an action triggers a "harm" or "harassment." FWS would assist landowners and their own staffs by more clearly defining such take thresholds (see *Guidance at the Time of Listing* for further discussion of this topic).

   Section 10(a)(2)(B) provides statutory criteria for issuing Section 10 permits. These are necessarily broadly defined, first, because they are not biological standards *per se*, and, second, because they must address numerous species, which may differ extensively in biology and status. FWS could clarify significantly how it determines HCP adequacy by developing a set of general biological standards applicable to all HCPs and species (similar to those described in the "No Surprises" policy), and more specific standards for individual species where appropriate.

Seed Money for Community-Based HCPs

Problem

In 1982, Congress recognized that the ESA's ban on the take of threatened and endangered species could substantially restrict the use of private lands and thus created a process in Section 10 of the Act by which the Secretary of the Interior or Commerce could issue a permit to a private or other nonfederal person to allow the incidental take of a listed species in the course of otherwise lawful activity and, thus, avoid the take prohibitions of Section 9. The permit applicant must present an HCP that, among other things, demonstrates the steps the applicant will take to minimize and mitigate the impacts of its proposed activities on listed species and the funding that will be available to carry out those steps.

The primary benefit of HCPs is the regulatory certainty they provide to private landowners in long-term land use planning activities and the flexibility they offer in designing integrated conservation and land use programs. This is especially true of large-scale, regional, or multiple-species HCPs of the type often undertaken by local communities or large corporations.

The problem is that developing HCPs of this type can be very expensive—particularly with HCPs pursued by local jurisdictions or other entities (e.g., special districts, land trusts) that affect large planning areas and numerous landowners and land use activities. Local government permittees in effect act as an agent for all their citizens in the HCP process, must balance diverse community interests, and often must support the process without a lot of cash reserves.

Initiating and completing a community-level or region-wide HCP usually requires advance biological studies, administrative support, and full-time consultants to collect data, facilitate negotiations, and prepare the HCP and associated documents. All this can take years and cost thousands of dollars.

Community-level HCP applicants often must struggle to financially support their HCP development programs. The situation often improves once the HCP is approved and being implemented because funding mechanisms by then are in operation. It is the initial investment—the start-up capital—that can be particularly difficult to obtain, and a shortage of such funds may act as a disincentive for some communities to embark on the process. Conversely, availability of funding assistance or "seed money" for initiating HCP programs would encourage communities to pursue HCPs, facilitate the process once begun, and send a message that the government values their efforts.

Proposal

Congress and the FWS could significantly assist the conservation of endangered species on private lands by establishing an HCP development assistance program. This could be done by establishing a program that provides "seed money" to local communities, other government jurisdictions, or other multi-landowner entities that commit to the HCP process. These funds could be provided through special appropriations, grant or matching grant funds, a revolving loan fund (RLF), or other mechanisms. The approach suggested here is the creation of an RLF. Such funds should go first to a public entity, then, where appropriate, be funneled to other organizations, coalitions, etc. To the maximum extent possible, the money should be loaned to the parties responsible for the development of the HCP.

Discussion

Congress should explicitly recognize the benefit of partnerships between the public and private sector, and the advantages to communities, landowners, and species represented by multi-landowner HCPs of appropriate biological and jurisdictional scales.

While there are benefits to HCP applicants of grant funds, the advantage of an RLF is that these loans would be repaid by the recipient and the fund would become self-financing and "revolve," thus removing any need for continued federal funding. Under this proposal, federal funds would be provided to state and local governments to be used as loans to help defray the costs of the development of HCPs. This could possibly be accomplished through

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a limited number of appropriations, perhaps even a one-time appropriation of approximately $25 million.

Because this source of funding could comprehensively address the costs associated with HCP development for an ecosystem, it would greatly reduce transaction costs. It would further facilitate multi-party regional planning and the development of habitat-specific or multi-species HCPs involving one or more local governments, as opposed to providing funding for a single landowner.

RLFs have proven successful in other contexts. This approach has been proposed by the Administration and supported by states and local governments as a funding source for activities under the Safe Drinking Water Act, including both infrastructure and operating costs. It makes maximum use of federal grant funds by requiring the use of loans that are intended to ultimately replace the need for continued federal funding. This would be even more true if state matching funds were required. The proposal would limit the use of the funds to activities for which a revenue stream would be created, thus ensuring repayment of the loan.

Seed money could take other forms as well, such as grants, matching grants, or Congressional appropriations. Precedent for Congressional appropriation assistance was established when, between 1992 and 1994, Congress appropriated $298,000 to support development of the Brevard County HCP in Florida.

Considering the diverse benefits, an HCP assistance program that helps communities develop regional- or community-level HCPs would be money well spent.

"No Surprises" Policy

Problem

A major mechanism for reconciling private land use with listed species conservation under the ESA is habitat conservation planning authorized under Section 10(a)(1)(B) of the Act. The primary incentive for obtaining an HCP permit is the regulatory certainty it is supposed to provide landowners during the life of the HCP. It is, therefore, essential for participating landowners that the original HCP "deal remain a deal." In particular, landowners have indicated that greater assurances are needed to ensure that HCP agreements, implemented in good faith by the affected landowner, will not be reopened at a later time with greater mitigation demands for more money or more land. The issue thus becomes how to provide such assurances, even if the needs of the affected species changed over the life of the HCP permit.

Proposal

On August 11, 1994, Secretary Babbitt announced the Administration's new HCP "No Surprises" policy designed to provide the additional assurance of certainty sought by landowners considering HCPs. The "No Surprises" policy stated that the FWS would not require additional land or financial compensation beyond the level of mitigation initially agreed to under the terms of a properly functioning HCP.

The policy also stated the general principle that if additional mitigation measures which had otherwise been adequately covered under the terms of an HCP, were subsequently deemed necessary for the conservation of a species, the obligation for such mitigation would be carried by the FWS and others, not the HCP permittee. The policy stated that if extraordinary circumstances nevertheless warranted a review of the mitigation package for a given HCP, any such reconsideration would be limited to potential modifications within any conserved habitat areas or to the HCPs operating conservation program, and, that no additional changes could be required that would involve the payment of additional money or restrictions on additional land without the consent of the HCP permittee.

While the "No Surprises" policy has received wide support from landowners considering HCPs, the Dialogue Group agreed that the policy should be converted from an administrative policy statement into permanent language within the ESA.

Discussion

Reforms of the HCP process occur within the context of a broader debate about the appropriateness of ESA regulatory controls on the use of private lands. Recognizing that this broader issue will be extensively debated by Congress, this proposal regarding the "No Surprises" policy assumes for purposes of discussion only the continued existence of some form of land use restrictions under the ESA.

The ESA presently relies upon HCPs as a major vehicle for reconciling the use of private lands with endangered species conservation. As previously noted, regulatory certainty is perhaps the primary incentive associated with an HCP. To the extent that the "No Surprises" policy provides such certainty for species that are adequately provided for under an HCP, statutory ratification of the policy ensures permanency of the policy.

The risk associated with the policy is that a given species covered by an HCP incidental take permit could still experience a decline in its population despite the mitigation plan under the HCP. Because of the "No Surprises" assurances provided to HCP permittees, however, the range of remedial options available to the FWS may be constrained or limited. Thus, the policy represents a trade-off between certainty and conservation flexibility in the face of unforeseen circumstances.

One must also not forget that HCPs represent an exchange of commitments, and that individual HCP permittees should be expected to live up to their conservation commitments if they expect to be the beneficiaries of the "No Surprises" policy. Thus, any legislative language on "No Surprises" should limit the application of the policy to those HCP permittees who are living up to their HCP commitments in good faith. Anything less would fall short of ensuring that a deal truly remain a deal for all parties involved. Moreover, the scope of the "No Surprises" policy is inevitably tied to the scope of the original HCP, species not adequately provided for under the terms of a properly functioning HCP should not be covered by the "No Surprises" policy. Again, flexibility is needed to broadly assess the range of "benefits" under habitat-based HCPs.

A final issue is whether the "No Surprises" policy should be applied to unlisted species as well as to listed species. The August 11th "No Surprises" policy did include unlisted species that might otherwise be adequately covered in an HCP (that is, which could otherwise satisfy the HCP permit issuance criteria presently applied to listed species). Contrary to the August 11 announcement, some Dialogue participants have expressed concern about the application of the "No Surprises" policy to unlisted species if there is no later opportunity to review whether the HCP has contributed to the decline of the species if the species subsequently needs to be listed.

Chapter 3

Financial Incentives and Resources

Introduction

The Dialogue Group recommends a number of changes in federal laws to create tax incentives and additional resources for endangered species conservation. Taxes, including income taxes, estate taxes, and property taxes, affect all landowners and sometimes significantly affect their land use decisions. Changes in tax laws, including some that have a relatively small cost to the Treasury, could yield important conservation benefits. The Dialogue Group sought to identify a small number of key changes to create tax incentives and increase resources to produce the greatest endangered species benefits.

Estate Tax Reform

Problem

Federal estate tax requirements are a major obstacle for private landowners whose land stewardship has been sensitive to its environmental value and who would like to be able to pass on their land to their heirs without destroying that value. The imposition of federal estate taxes often forces large parcels of environmentally valuable land to be broken up into smaller, less environmentally valuable parcels. Some of the best remaining habitat for endangered species is put at risk in this manner.

Federal law imposes a tax on the amount of a decedent's estate in excess of $600,000. The tax begins at a rate of 37 percent, and climbs to 55 percent for estates in excess of $3 million. For estates in which undeveloped land represents a significant portion of the estate's total value, the need to pay the federal tax creates powerful pressure to develop or sell off part or all of the land or to liquidate the timber resources of the land. Because land is appraised by the Internal Revenue Service according to its "highest and best use," and such use is often its development value, the effect of the tax is to make retention of undeveloped land in forest or other undeveloped condition difficult at best. For farmers, ranchers, forest land owners, and others who are "land rich and cash poor," the federal estate tax is a widely perceived threat to the ability to pass on the family's property to the next generation.

The pernicious environmental effects of the federal estate tax laws have been widely recognized. The recent recommendations of the Northern Forest Lands Council with respect to maintaining the privately owned forest land of the Northeast prominently feature estate tax

reform. In addition, the recently completed multi-agency habitat preservation plan for the highly endangered Florida panther outlined a number of needed incentives to encourage the retention of high-priority, privately-owned habitat in compatible agricultural land uses. Near the top of the list, once again, was estate tax reform. Problems like those to which these proposals were addressed are commonplace. At the same time that state and federal governments are pursuing the conservation of environmentally important lands, federal tax laws are forcing the destruction of many of the last best examples of such lands in private ownership.

Proposal

Landowners should be given the opportunity to reduce the estate tax burden in return for voluntarily entering into revocable agreements to manage their lands in ways that benefit endangered species. To qualify, the owner (prior to death) or the executor (after the owner's death) would have to enter into a written agreement with the Secretary of the Interior (or a state fish and game agency if a suitable agreement between the Secretary and the state agency existed) to manage an identifiable parcel of land in a way that provided significant benefits to endangered species. Such management could include measures not otherwise required by law or an agreement to refrain from activities not prohibited by law.

In cases where landowners are practicing beneficial habitat management, they may need only to agree to continue existing uses and to forgo other legally permissible uses. If the heirs subsequently cease to honor the conservation agreement or dispose of the property without securing the agreement of the new owners to: (1) continue the conservation agreement; and (2) assume the tax liability in the event of a breach, the heirs will then be liable to pay the tax that would originally have been due with respect to the property but for the agreement. The amount of the tax then due should be adjusted to reflect any intervening changes in the land's value not due to improvements thereon. In this manner, heirs can effectively defer for as long as they wish the estate tax otherwise due on a parcel of land at the time of death of the person from which the property was inherited. By maintaining the conservation agreement indefinitely, they escape the estate tax on the property altogether.

Discussion

Some of the questions commonly asked about this proposal, and the answers to them, are as follows:

Q. Does the conservation agreement require the landowner to give up all economic use of the property?

A. No. The only requirement is that the Secretary (or perhaps a state fish and game agency) conclude that the activities the landowner agrees to undertake (or to forego) will provide significant benefits for an endangered species. Such agreements might include longer forest rotation cycles, management of cattle around certain riparian

areas, installation and maintenance of protective gates at significant bat caves, fallowing of crop land according to an agreed schedule, protection of areas supporting endangered plants, etc. In some situations, the landowner may need only to agree to continue existing uses and to forgo other legally permissible uses. There may also be unique situations in which the only way that endangered species can benefit on a particular parcel is if all or nearly all economic uses are foregone. In such situations, however, the landowner is free not to enter into the agreement that would produce the estate tax benefits and the heirs are free to discontinue it whenever they wish (subject to the obligation to pay the tax that has been deferred).

Q. Does the proposal require some form of monitoring to ascertain that the conservation agreement is being carried out?

A. Yes. Since the obligation to repay the deferred tax is triggered by a failure to honor the terms of the agreement, some means of monitoring compliance must be built into the agreement. That monitoring, however, need not be a task for the IRS. Rather, certification from the Secretary (or from a state fish and game agency pursuant to delegation from the Secretary) that the agreement remains in effect and is being honored should suffice to establish the heir's right to continue to defer the tax. Alternatively, the IRS could conduct random audits on its own.

Q. Is there any precedent in the tax code for deferring estate taxes?

A. Yes. If half or more of the value of an estate is comprised of property used as a farm, and if the decedent "materially participated" in the operation of the farm (i.e., the decedent he did not simply own the farm as an investment, renting it to someone else to work), then the heirs may be able to take advantage of certain preferential tax treatment under Section 2032A of the Code. That provision permits farm property to be valued at its "use value" (i.e., its value for farming purposes) rather than according to its "highest and best use" (typically its development value). To take advantage of this benefit, however, the executor must elect to do so when filing the tax return for the estate and the heirs must consent in writing thereto. By so consenting, the heirs effectively agree to continue to use the property as a farm for at least ten years and to materially participate in its operation during that period. If the heirs dispose of the property (other than as a result of the heirs' own death) or ceases to use it for farming purposes within that ten year period, they are personally liable for an additional tax generally equal to the amount by which the original estate tax had been reduced.

Q. Why should a landowner find this option attractive if the tax is merely deferred rather than forgiven?

A. First, the tax will be forgiven if the conservation agreement is never discontinued. Moreover, even if the heirs ultimately elect to discontinue the agreement, this

proposal offers significant benefits to landowners. It gives them a greater likelihood of being able to keep their land in the family. It also gives the heirs control over the timing of when to pay the estate tax; rather than being forced to pay at death, when few liquid assets may be available, or when family intentions with respect to the property are in doubt, it provides a means of postponing the tax burden to a later time when liquid assets may be more readily available or when family consensus about the future of the property is achieved.

Q. What will this proposal cost the Treasury?

A. Surprisingly little. According to the most recent data available from the Internal Revenue Service (for 1993), the total income to the U.S. Treasury from the federal estate tax was only $10.3 billion. Of this total, an estimated $1.7 billion of income is derived from the value of real estate in decedents' estates. This $1.7 billion includes residences and many other types of property that could not possibly have any utility for endangered species. A generous assumption is that one percent of properties in any given year may have the potential to be managed so as to benefit endangered species. If this assumption is correct, the cost to the Treasury drops to only $17 million annually, but even this figure assumes that heirs to all of the eligible properties would elect to enter into an agreement to secure the tax deferral. In fact, however, only about 8 percent of estates with farm assets take advantage of the tax benefits offered by existing Section 2032A of the Code. Assuming a participation rate triple this amount (i.e., 24%), the cost to the Treasury of the measure proposed here is only $4 million annually.

Q. Are there any alternative ways of structuring the benefits of this proposal?

A. There are many possible permutations of this proposal, including some that are less generous to the taxpayer and others that are more generous. For example, rather than allowing land subject to a conservation agreement to escape the estate tax altogether at the time of death, one could instead value that land at its "actual use value" (treating the obligations of the agreement as part of the actual use). The difference between the tax on this value and the highest and best use value would then be deferred for as long as the agreement was honored. This approach would have the least cost to the Treasury, but would also offer the least powerful incentive to the landowner (since the estate tax varies from 37% to 55%, this approach would leave the landowner bearing from 45% to 63% of the cost of conservation). An alternative approach would be to treat the reduction in value as a credit against the estate tax otherwise due (i.e., if the agreement reduced the value of the property by $100,000, the estate tax due would be reduced by that amount, thus shifting the entire cost of conservation to the government). Still more generous would be to allow the heirs to escape the tax altogether by honoring the agreement for some period of years short of permanency. This would clearly create the strongest incentive for landowner participation, but it would have other drawbacks. After the specified period of years, the landowner

would have no economic reason to continue to manage his property to benefit endangered species; thus, the potential to secure permanent conservation benefits would be sacrificed. This is especially so since this approach would destroy any tax incentive for a landowner to convey a permanent conservation easement. The landowner could secure a more favorable estate tax benefit for making a revocable agreement than for conveying a permanent conservation easement.

In summary:

1) The cost of this proposal to the Treasury is very low.

2) The proposal is likely to appeal most to the very groups who are now most concerned about ESA regulation—ranchers, nonindustrial forest owners, and farmers.

3) Elements of the proposal are modeled on an existing provision of the tax code (pertaining to family farms).

4) The proposal responds to a very widely perceived problem (i.e., that federal estate taxes force many large, environmentally important land parcels into smaller, less environmentally important parcels.)

5) For landowners without endangered species on their property, this proposal creates a strong incentive to create the habitat that would support endangered species or to introduce the species where that is permissible. Coupled with a clear "safe harbor" agreement, many landowners might actively seek to conserve endangered species on their land as part of intelligent tax planning.

However:

1) The proposal may be perceived as a boon to the rich, since it is only the relatively affluent who pay federal estate taxes.

2) The tax benefit is "off in the future" and may not provide a strong incentive for some landowners to enter into conservation agreements now.

3) Some members of the Dialogue Group are already supporting other estate tax reform measures (e.g., the "Family Enterprise Preservation Act") that are targeted not at endangered species conservation narrowly, but at estate tax relief generally. Those supporting these broader relief measures may believe that a more narrowly focused proposal could send a mixed message about what they want.

There may be ways of overcoming at least the first two shortcomings with other tax incentives that complement the estate tax idea described here. For example, if the federal tax code allowed a partial tax credit (e.g., 50%) for local property taxes paid on property subject

to an endangered species conservation agreement, this would create an immediate incentive to consider entering into such an agreement now. The estate tax idea would provide an incentive to continue the agreement after the original landowner died. Alternatively, expenses incurred by a landowner in carrying out an endangered species conservation agreement could be made deductible for federal income tax purposes even if such expenses were not otherwise considered an "ordinary business expense" (e.g., the cost to a farmer of installing a protective gate across the entrance to a bat cave). Either of these ideas would create an immediate tax incentive to consider entering into conservation agreements now; for those landowners subject to federal estate taxes, the estate tax proposal would provide an added incentive.

Estate Tax Concepts for Land Conservation

Problem

Although some have emphasized the importance of federal lands in maintaining endangered species and biodiversity, about 50% of listed species do not occur on federal lands, and most known occurrences of endangered and threatened species are not on federal lands. While federal lands should and do play an important role in conservation efforts, privately owned lands will continue to play an essential role in the conservation of endangered species and overall biodiversity.

To date, the ESA has relied primarily on a regulatory approach to balance public and private interests. Unfortunately, because the Act does not come into play until a species is in serious trouble and a listing occurs, in many cases, all remaining habitat for a listed species is essential to species survival. The costs and constraints for maintaining the species are concentrated on those who happen to own the land that supports the required habitat. Thus, the burden falls disproportionately on a few private landowners. This inequity is at the heart of much of the conflict associated with the ESA.

In addition to bearing a disproportionate burden under the Act for protecting species habitat, private landowners are also faced with an estate tax system that discourages—rather than promotes—species preservation. Under the current estate tax system, many heirs are forced to sell environmentally valuable land in order to pay estate taxes. The current estate system often causes the heirs to break large parcels of land into smaller, less environmentally valuable parcels or, in the case of land with timber, results in the timber being cut to pay taxes.

Efforts to reform estate tax law as it pertains to endangered species protection should have two goals: first, to keep large parcels of environmentally sensitive land intact and, second, to ensure that this land is managed to maximize its environmental attributes and potential.

One method is outlined in the previous proposal, namely, to ensure that the land is left intact by forgiving the estate tax liability for as long as the heirs continue to manage the land in an environmentally sensitive manner. In some cases, however, the heirs do not have the ability (or the desire) to continue management of environmentally sensitive lands. How can the estate tax system provide incentives to keep these lands intact and still provide for conservation management?

One solution is to provide additional incentives for private landowners to place their land (or an interest in their land) in conservation ownership. Currently, to qualify as a tax-deductible gift, a donor must give a qualified real property interest (which includes conservation easements) to a qualified organization (a governmental unit or publicly supported charitable organization), and the property or easement must be donated exclusively for conservation purposes. In addition, the donor must make the gift of land or easement prior to his or her death. The estate (or heirs) may not make the gift unless the will specifically gives them the authority to do so.

Many groups throughout the country acquire land and/or interest in land for the proposes of conservation. These range from major national groups to a large and rapidly growing number of local land trusts. Collectively, these organizations have already made a significant contribution to land conservation. The land trust movement has now grown to over a thousand organizations nationwide, and they continue to form at the rate of one per week.

Proposal

To bolster donation incentives, the estate tax law should be changed to explicitly allow the estate (or heirs) to do what the decedent could have done before death: namely, to allow the estate to make a tax-deductible gift of land or an interest in land to a qualified organization. This change would not only allow the estate to reduce the value of the taxable estate and thereby decrease the amount of taxes payable by the estate, but would also ensure that the land ended up in conservation ownership or with conservation restrictions.

A second, more attractive proposal, would be to go one step further and provide that any gifts of land (or interest therein) with endangered species habitat from an estate to a qualified conservation organization would give the estate a tax *credit* rather than a simple deduction. Not only would this reduce the amount of the taxable estate, but would also provide a credit against the tax owed.

Discussion

Either of these ideas—but particularly the tax credit idea—is attractive because it reduces the tax burden on the heirs, keeps the land from being broken up, and provides for stewardship of the land. This proposal is also appealing because of its voluntary nature. The heirs can decide if they want to keep the land and restrict it with a conservation easement, or give it in its entirety to a conservation organization. In addition, to the extent the heirs wish to keep

the land (rather than donating it entirely), this provision allows them to donate a conservation easement and continue to hold and use the land consistent with that easement.

Finally, to the extent that the estate donates the land, the conservation entity—not the private landowner—is responsible for the management costs associated with the endangered species.

A potential problem with this proposal is the cost to the U.S. Treasury. Especially in the case of a tax credit, the costs will be high, a dollar-for-dollar loss to the federal government. On the other hand, the amount of income to the U.S. Treasury from the federal estate tax was $10.3 billion in 1993 and, of that amount, roughly $1.7 billion was derived from the value of real estate in decedent's estates.

Federal Tax Credits for Endangered Species Management Practices on Private Lands

Problem

Federal land ownership is concentrated mostly in the Western United States. State and other governmental entities own and manage land in varying concentrations around the country. These governmental lands are managed with a variety of objectives and, very often, providing endangered species habitat is an important element in management considerations on such properties. However, since the distribution of these public lands is highly varied around the country, such sites are often inadequate to provide habitat to protect and, especially, to recover endangered species. The importance of private lands to provide habitat for endangered species is therefore an important consideration.

Although some private landowners are interested in providing endangered species habitat on their properties, many are concerned about potential legal burdens. In order to successfully encourage private landowners to implement management measures to support endangered species, landowners first need assurances that they will be protected from undue legal obligations. "Safe harbor" type provisions are a critical element required to allow private landowners and/or land managers to use such habitat-improving practices.

Once landowners are offered the necessary assurances related to their efforts to provide habitat for endangered species, government and society should provide some financial incentive for the landowners to implement these practices. One way of providing such an incentive would be to provide a federal tax credit.

Proposal

An "Endangered Species Habitat Tax Credit" would work like the existing Reforestation Tax Credit. Since management activities associated with providing endangered species habitat

needs are often not cost-effective from the landowner's perspective, a federal tax credit would provide the landowner with a direct and fairly immediate financial benefit. Similar to efforts under the Agricultural Conservation Program (ACP) or Forestry Incentive Program (FIP), a list of such activities could be developed by the NRCS, U.S. Forest Service, state forestry agencies, or extension service in each given state. For example, prescribed burning in pine timber types of the Southern Coastal Plain states would be expected to appear on such lists for these states because of the potential benefits to species such as the red-cockaded woodpecker and others. It should be emphasized that landowners would not need to have a documented presence of endangered species on their properties to qualify for the tax credits.

The federal government currently offers landowners financial incentives to implement certain management activities on their properties. Such assistance may occur in direct forms, such as financial support to retire erodible crop lands through the CRP, or other financial support to effectively manage commercial crops of timber through the Stewardship Incentive Program (SIP), ACP, or FIP. Although most of these types of programs are currently under review in the Farm Bill reauthorization, they clearly represent federal efforts to encourage some type of specific management practice on private lands. In addition, the Federal Tax Code allows for a 10% Reforestation Tax Credit, which is directly tied to management activities related to establishing commercial stands of timber. A combination of the provisions under these programs may encourage private landowners to provide more endangered species habitat.

There are a number of management activities that could support endangered species habitat in specific circumstances. Some of these activities may only have the potential to benefit endangered species habitat under certain conditions. Such activities might not appear on state authorized activity lists but could qualify for a tax credit if they are approved as such in a government authorized agreement or management plan such as a cooperative agreement with the FWS or a Stewardship Incentive Plan.

Confirmation that the management activity actually occurred on the landowner's property could be established either through a management plan and/or letter provided by the local forester representing the state forestry organization.

Discussion

The ESA has committed the United States to the protection and recovery of endangered and threatened species. Public lands play a key but limited role in this process, and should be supplemented by the efforts of private landowners. Landowners should be offered assurances of legal protection as they participate in such efforts in addition to financial support through federal tax credits.

An "Endangered Species Habitat Tax Credit" program would provide a mechanism for society to share the financial burden of individual private landowners in providing endangered species habitat, and fairly direct financial support for these efforts to the landowner.

Possible problems associated with such a program include debate over which management practices should appear on the authorized state-level "lists" and verification of the implementation of such practices. The fact that many species are currently listed without existing recovery plans would make the development of these lists a more difficult task. Human resource needs for the verification process could also be an issue of concern. A basic approach to both of these issues has been suggested in the program description above, however, and is based on elements of similar management assistance/support programs. There would also be a direct cost in federal tax revenues, but this could be tempered by varying levels for the proposed tax credit and the fact that ultimately, implementation of these habitat-encouraging measures should lead to the recovery of species. This would ultimately provide some government cost-savings benefits.

Tax Credit for Property Taxes Paid on Land Subject to an Endangered Species Conservation Agreement

Problem

The burden of local property taxes serves as a disincentive for many landowners to use their land in ways that benefit endangered species. For local property tax purposes, land is typically assessed according to its "highest and best use" value. Thus, the landowner who voluntarily forgoes the use that would maximize profits faces a double economic burden: the opportunity cost associated with foregoing that use and the property taxes incurred as if the land were put to a more profitable use. Many jurisdictions have differential assessment schemes, whereby certain types of land (typically farmland and forest land) are assessed at their actual use value rather than their highest and best use value. Even under these schemes, however, the farmer or forest land owner who accommodates endangered species is treated no differently from those who do not. While property tax rates vary from jurisdiction to jurisdiction, they function as a deterrent to the maintenance of natural habitat on which many species depend.

Proposal

For land subject to an endangered species cooperative agreement, the tax code should allow a tax credit (rather than the deduction allowed under current law) against the federal income tax for local property taxes paid on such land.

Discussion

The values of the credit would offset, at least in part, the costs (including opportunity costs) associated with managing land to meet the needs of endangered species. Thus, it would create an economic incentive for more landowners to manage land in that manner. Landowners are highly sensitive to property tax concerns. In jurisdictions that allow

assessments based on actual use, a high percentage of eligible landowners often agree to the requirements necessary to receive the tax preference.

Like any form of tax relief, this proposal would reduce federal revenues. The amount by which such revenues would be reduced cannot be determined at present, however. There is also the potential that the "cost" to the Treasury of securing endangered species conservation benefits from two otherwise identical landowners would vary because of the differing tax rates in the two jurisdictions. If this is a problem, however, it is not one that is unique to this proposal. Because local property taxes are deductible under present law, the same potential "discrepancy" already exists.

Deducting Costs Associated with Endangered Species Habitat

Problem

As a result of the 1986 Tax Reform Act, most nonindustrial private forest landowners are unable to deduct costs inherent in the establishment and long-term maintenance of private forests. Examples of these costs include the following: erosion reduction activities; intermediate treatments (i.e., prescribed burning; wildlife habitat creation and modification); and more. Landowners may deduct these costs if they can show they meet certain passive loss rules. However, most landowners do not qualify and must capitalize these expenses to the year income is realized from the investment, often twenty to eighty years into the future.

Landowners have the option of investing their money in the stock market, certificates of deposit, individual retirement accounts or other areas where they can expect a return of some significance. Because of this, most landowners find spending money on endangered species, let alone forest management, prohibitive because of little or no economic return.

Proposal

Private landowners should be able to deduct annual management expenses including the costs for enhancing endangered species habitat.

Discussion

If given the right incentive, landowners would provide benefits to the environment, the public, and endangered species, if it were economically feasible. One type of an incentive is the ability to deduct from their total income expenses related to endangered species habitat management. Landowners would have the satisfaction of knowing they are providing society, the environment, and endangered species major benefits while simultaneously reducing their overall tax burden.

Federal Land Resource and Assessment Team

Problem

Federal lands managed by the Department of Interior, Department of Agriculture, Department of Defense and other agencies play a key role in providing endangered and threatened species protection and recovery. These properties vary, however, in terms of their relative importance in providing endangered species habitat. Some of these federal properties are valuable lands from the standpoint of economic productivity and could be managed more intensively for resources such as timber, mining, range, or other agricultural purposes without significant negative impacts with regard to biological diversity, or endangered species habitat in general.

Many private lands around the country provide critical endangered species habitat for an assortment of endangered species. In many cases, the habitat needs of these endangered species directly conflict with the management goals and objectives of the private landowner or land manager. In some cases, restrictions associated with the legal requirements of the ESA could create a crippling financial burden to the private landowner.

These two circumstances provide the basis of a potential opportunity for the federal government to redeploy real estate assets in a way to help meet goals of endangered species protection and recovery. Such a program could occur through the effective trading, sale and purchase of the properties outlined above.

Proposal

A multiagency "Federal Land Resource and Assessment Team", including participation from the private sector, should be formed to coordinate an integrated effort to identify federal properties which have limited endangered species habitat value or potential. The Federal Land Resource and Assessment Team should also consider other non-habitat values but use them in a lower priority formula in making the overall assessment. These properties should also ideally have some special potential for their values in terms of real estate, timber, mining, grazing or other agricultural purposes.

Tracts of privately-held property which have special functions or potential in terms of providing endangered species habitat should be identified. First priority should be to attempt to trade low value federal properties, from the standpoint of endangered species habitat potential, for private lands with high quality endangered species habitat. The result should be to reduce the disproportionate burden and pressure placed on private property owners to conserve endangered species. The mechanism around such exchanges should be closely scrutinized for effective, timely, and mutually beneficial transactions. Private landowners should be allowed to participate on a willing seller basis.

Failing to achieve a local exchange with such low priority federal properties, the next step would be to put such tracts up in a competitive bidding process. Minimum acceptable bids should be developed and funds generated from such sales should be placed in state level "pools" based on the amount of funding generated from such sales in each state. Funds would then be redeployed by actively purchasing key private tracts from an endangered species habitat standpoint by using that state's "pool."

An additional provision of this program would be that up to twenty-five percent of the dollars generated from the federal land sales could also be used to enter into permanent restrictive covenants with willing private landowners to help ensure that their properties, while remaining in their ownership, will continue to provide endangered species habitat. These covenants would be specific to each ownership and might include restrictions related to land use changes, management regimes, or other negotiated specifics as appropriate for the circumstances.

Discussion

The "Federal Land Resource and Assessment Team" should effectively be used to redeploy our limited federal land assets in the most effective way possible to support endangered species habitat needs. The proposal should be revenue neutral, with the exception of costs associated with an assessment and manage exchanges/sales/purchases. There are likely to be some federal revenue enhancing benefits, in fact, because of certain federal properties with tax generating income potential will pass to the private sector.

A potential political problem will be encountered with the possibilities of moving federal land assets from location to location around the country. However, by first attempting to emphasize the local trades, and then pooling funds raised on a state-by-state basis, transfers of federal assets from states with large amounts of federal land to those with small federal land bases will not occur under this concept. This has the downside of limiting opportunities in states with limited federal land bases.

Endangered Species Habitat Trust Fund: An Alternative to Traditional Land Exchanges

Problem

Faced with growing deficit problems and budgetary constraints, Congress is making large cuts—and even eliminating—traditional programs that fund acquisition of endangered species habitat. At the same time, there is a growing feeling that if endangered species habitat is to be preserved and protected, the brunt (or at least a more equitable share) of the costs should be borne by the federal government rather than individual landowners. A third reality, and one that is diametrically opposed to the need to address the deficit and preserve habitat, is the desire by the current Congress to keep level—or even decrease—taxes.

Creating additional funding sources to purchase high-quality endangered species habitat would not only provide additional protection for endangered species but would also help relieve the burden and pressure placed on landowners to conserve endangered species on their private property.

Proposal

The Dialogue Group recommends the creation of an Endangered Species Habitat Trust Fund (Habitat Trust) as a pilot program to generate new funds to be used exclusively for endangered species habitat protection. Also, it could address on a small-scale, pilot basis some of the institutional barriers and problems that currently exist within the current land exchange system.

Although there is a system in place to handle land exchanges, there are a number of problems that keep it from being as efficient and useful for endangered species habitat protection as it could be. A pilot program should address (as much as possible) the problems of the current land exchange system that make it ill-suited to produce more resources for habitat protection, including:

- the length of time needed to complete a land exchange;
- the reluctance of agencies to transfer land outside of the agency (especially to other agencies with different missions);
- the difficulty in timing an exchange;
- county revenue issues (such as payments in lieu of taxes);
- the amount of time needed to complete the public review process;
- the difficulty in maximizing the value of the government land;
- the difficulty in determining a fair market value on the land to be acquired and land to be exchanged;
- the prohibition on interstate transfers absent legislation;
- the lack of trained personnel needed to complete an exchange and the associated high cost of the transaction; and
- the difficulty of identifying public land with low ecological value and private land with high ecological value.

The five main objectives of the Habitat Trust would be to:

- work with the Department of Interior, to target potentially developable, high-value lands within the Department of Interior's surplus land portfolio, to enhance their value, prior to sale, and to aggressively market these properties in order to generate significant funds for habitat protection;
- minimize valuation and timing issues existing under the current exchange system;
- reduce problems associated with interagency and interstate transfers of property;
- provide a new source of funding for endangered species habitat protection; and
- identify and purchase inholdings and other properties with high habitat value for acquisition.

Discussion

The Habitat Trust would operate as a separate, innovative complement to the current Interior land exchange system. The Habitat Trust would be set up as a nonprofit corporation whose Board of Directors would be appointed by the Secretary of the Interior.[2] The Board of Directors, in turn, would be responsible for hiring the staff of the corporation.

The mission of the corporation would be to maximize return on the disposition of Interior Department assets identified as surplus lands with little or no ecological value and where there is no other compelling public purpose to be served by retaining federal ownership of the land. The return on each property could be maximized by aggressive marketing methods combined with planning activities such as master planning, zoning, and limited development. The key function of the Habitat Trust would be to sell assets in a commercially prudent manner. The Habitat Trust's objective would be to bring market forces to bear on the transaction rather than being tied on to the current noncompetitive land exchange system.

Ideally, the surplus land to be handled by the Habitat Trust would be extremely low in ecological value and extremely high in potential development value (i.e., isolated parcels surrounded by commercial development).

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[2]For example, the corporate status and appointment procedure could be similar to that of the National Fish and Wildlife Foundation. Although a separate legal entity from the Department, the Secretary would have the ultimate authority to appoint and replace the Board of Directors for the corporation. The day-to-day operation of the corporation would be performed by the President of the Corporation and its employees.

Acronyms

ACP	Agricultural Conservation Program
CRP	Conservation Reserve Program
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FACA	Federal Advisory Committee Act
FIP	Forestry Incentive Program
FLPMA	Federal Land Planning and Management Act
FWS	Fish and Wildlife Service, U.S. Department of Interior
HCP	Habitat Conservation Plan
NEPA	National Environmental Policy Act
NFMA	National Forest Management Act
NMFS	National Marine Fisheries Service, U.S. Department of Commerce
NRCS	Natural Resources Conservation Service, U.S. Department of Agriculture
RLF	revolving loan fund
USDA	U.S. Department of Agriculture

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Because this would be a pilot program, the scale should be kept small—perhaps 10 to 15 projects per year generating up to $300 to $400 million per year in land sales. During this pilot phase, careful review and analysis should be performed to test whether the pilot program is meeting its stated objectives.

Decisions about which high value endangered species habitat to purchase with the funds generated by the Habitat Trust would be solely within the purview of the Department of Interior with some provision made for public input and review.

The Keystone Dialogue on Incentives for Private Landowners to Protect Endangered Species

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STATEMENT OF RANDY SCOTT, PLANNING MANAGER, SAN BERNARDINO COUNTY (CALIFORNIA) PLANNING DEPARTMENT

INTRODUCTION

My name is Randy Scott; I am the Planning Manager for the San Bernardino County Planning Department. My office is located in the County Government Center, 385 North Arrowhead Avenue, San Bernardino, California. Among other duties, I am responsible for environmental impact review of County projects and private development projects which require County permits. In this capacity, I review on a regular basis situations that involve development and endangered species conflicts.

I was personally involved with the endangered species issue that is described In more detail below and I would like to take this opportunity to share some of my experiences with you relative to the ESA so you will be aware of the local concerns.

THE DELHI SANDS FLOWER-LOVING FLY

- On September 22, 1993, the U.S. Fish and Wildlife Service emergency listed the Delhi Sands Flower-loving Fly. In doing so, the Service significantly impacted San Bernardino County with a number of projects, with the greatest impact affecting the County Medical Center Replacement Facility.
- Very little is known about the fly. It is currently believed to be restricted to 7 sites in southwestern San Bernardino County and northwestern Riverside County. All known colonies occur on private land within a 10-mile radius. Nothing is known about the habits of the fly in the larval stage. The adult emerges only from late July through mid-September and is thought to have a life span of up to one week.
- The listing of the fly created an endangered species-land development conflict that resulted in the preparation of a habitat preservation, enhancement and impact avoidance plan for the San Bernardino County Medical Center Replacement Facility. The plan was completed in cooperation with the U.S. Fish and Wildlife Service in order to obtain a determination from the Service that the project would not constitute a taking under Section 9 of the ESA. This determination meant that a Section 10(a) permit and a formal Habitat Conservation Plan would not be required.

THE SAN BERNARDINO COUNTY MEDICAL CENTER REPLACEMENT FACILITY

- San Bernardino County is in the process of replacing its existing Medical Center with a new facility that would provide better medical care for the citizens of the county in a seismically safer facility. Work on the project has been in progress for many years with final site selection occurring In 1990. The County Medical Center Replacement Facility is located in the city of Colton within San Bernardino County on a 76-acre parcel. A study was conducted on the site during the summer of 1993 to determine the presence or absence of the fly. A total of eight sightings, representing seven or eight individuals of both sexes, of the fly were made. All sightings were made near the southern boundary of the site. The amount of existing suitable habitat on the site was estimated to be no more than two acres. The balance of the site proposed for Medical Center development was not suitable habitat. It was not verified that each sighting represented a separate individual fly.
- The County concluded that its original Medical Center layout and design proposal, prepared prior to the September 22, 1993 listing, would have had an adverse impact on the Delhi Sands Fly and would have required incidental take authorization under Section 10(a) of the ESA if the Medical Center design were not modified. Because the Medical Center's financing and construction schedules were well underway at the time the Delhi Sands Fly was listed endangered on September 22, 1993, the County concluded that the delay associated with obtaining a Section 10(a) permit would effectively terminate the project. A delay in, or termination of, Medical Center construction could cause a public health crisis in the County.

IMPACTS TO THE PROJECT

- As a result of the field studies and recommendations of County staff consultants, a resolution for habitat preservation acceptable to USFWS was developed for the site. It included:
  - Avoidance of the entire Delhi sands area identified as occupied or suitable habitat by moving the Medical Center complex footprint 250 feet north from the original design location and moving parking out of the occupied area. The

resulting Medical Center footprint leaves a rectangular area 8.35 acres in size which encompasses the 1.92 acre occupied Delhi Fly habitat as a preserve.

- Long-term protection of occupied habitat and the preserve area will be assisted by the installation of fencing, vegetative barriers and erosion and runoff control structures. These measures are designed to prevent human activities and encroachment within the habitat preserve area. Regular policing of the preserved habitat area for litter and other human disturbances will be provided.
- The Medical Center will have no effect on dune-forming activity onsite. Erosion and sand migration, if any, of the occupied habitat area will be studied annually to determine whether steps are needed (e.g., wind barriers, and sand stabilizing structures) to maintain geologic integrity of the occupied habitat. This will be part of an ongoing site monitoring program developed as part of the mitigation plan and paid for by the County.

COST OF MITIGATION

- A total of eight individual flies may have been sighted on the project site during the field surveys. As of June 8, 1994, the total cost for mitigation had reached $3,310,199. Of the total, 41.8 percent can be attributed to land cost. The Habitat Preservation, Enhancement, and Impact Avoidance Plan accounts for $910,000 of the budgeted amount. The cost for redesign, engineering, construction, and direct cost per fly protected at that time was $413,774.25 ($3,310,199 + 8). Delays to the construction project totaled 3 months.

CONCLUSION

- The fly has been listed as endangered based on a very limited amount of untested data. The author of the listing package indicates that life cycle characteristics of the species is uncertain. The site specific data is inconclusive and cannot ascertain the total number of specimens on the site, or if in fact, the flies identified are separate individuals. The proposed mitigation affords limited protection to a small number of insects, protects a limited amount of habitat, and provides for ongoing research into the species itself.
- The existing County Medical Center admitted 15,500 inpatients per year (1993 Fiscal year) at an average cost of $6,695 per patient. Outpatients number 190,000 at an average cost of $140 per patient. A total of 494 inpatients or 23,644 outpatients could have been treated for the amount of money expended on the mitigation for the Delhi Sands Flower-loving Fly.
- The County's experience with the Delhi Sands Fly is just one example of the impact of the ESA on our financial resources. This was further emphasized by our efforts to provide mitigation for the fly within our Aqua Mansa Industrial Park. Cost to date for that project have exceeded $100,000.

OTHER SPECIES AFFECTING THE COUNTY

- A pending emergency listing of the San Bernardino kangaroo rat for which 39,000 acres of habitat has been requested could severely affect plans to redevelop Norton AFB and halt construction of the Seven Oaks Dam, which is part of the Santa Ana River flood control project, the largest federally funded public works project in the western U.S. including parts of San Bernardino, Riverside and Orange Counties.
- San Bernardino County is also participating in a multi-species conservation plan focused on the desert tortoise, a Federal- and State-listed threatened species which has had a profound effect on activities in the desert portion of San Bernardino County. The listing of that species in 1989, and the subsequently adopted designations of critical habitat and the recovery plan, together with the case-by-case Section 7 consultations have resulted in severe constraints on land use both on private and public lands.

San Bernardino Valley Multi-Species Habitat Conservation Plan

- As a result of the Impacts that various listings and proposed listings have made on projects within the San Bernardino Valley, Jerry Eaves, County Supervisor for the Fifth Supervisorial District has proposed the preparation of Multi-Species Habitat Conservation Plan (MSHCP) for the San Bernardino Valley. This plan is intended to preserve and protect covered species and the ecosystems on which then depend and to provide a comprehensive means to coordinate and standardize mitigation and compensation requirements so that public and pri-

vate actions will be regulated equally and consistently, reducing delays, expenses, and regulatory duplication.

- Initially, this plan proposes to address some 41 animal species and 32 plant species—a very ambitious effort that will also be very expensive. We currently expect our cost of preparation of the plan to be $1,815,000. This is very conservative in light of the dollars expended in Orange and Riverside Counties on similar-efforts. Funding this program is extremely difficult. The current economic climate of the area and the inability of cash-strapped local cities and the County to pay for plan preparation is a major hurdle in aggressively pursuing the plan.

Recommended Changes to the Endangered Species Act

- The National Association of Counties (NACO) has presented a comprehensive package of recommendations of changes to the ESA to Congress. San Bernardino County strongly endorses these recommendations. Our own experiences in the county have also produced some specific recommendations to change the ESA, some of which are covered in the NACO recommendations. The following suggestions would provide solutions to the difficulties created by a bill that inadequately provides sound environmental policy.

• *Require a study of the economic impact, determine the cost of recovery of listed species and develop a recovery plan before a species is listed.*

During the 1-year period of review for proposed listings, the Federal Government should prepare a detailed economic study that outlines the total impact on local government, jobs, housing availability and cost, essential public services, and the overall impact on the quality of life in the communities affected by the proposed listing. This study should be incorporated with an accurate, species-wide recovery plan that is completed and ready for implementation at the time of the listing. Along with accurately estimating biological factors and a definite time-line of milestones to recovery, the recovery plan should address the number of species required to sustain the population, allowable take, habitat required to support the population, total cost of acquisition of habitat and all other costs, direct and indirect, of preservation of the species. If it is subsequently determined that it is either biologically or financially impossible to recover the species to sustaining levels, then this should be recognized in the protection the species receives under the Act.

• *The Endangered Species Act must uphold all private property provisions of the 5th and 14th Amendments.*

The Endangered Species Act must recognize and fairly compensate landowners for all takings, even in the interim, of private property for endangered species protection. In current form, the Act places the burden of protection disproportionately upon the private landowners who have endangered species, or their habitat, on their land. Not only are the costs of protection placed unduly upon landowners, but often the value and use of their land is also denied without proper compensation or due process.

• *The benefits of protecting species are shared by all citizens, therefore all citizens should share the costs.*

The Federal Government should provide the funding for the protection it mandates under the Federal Endangered Species Act. The Endangered Species Act is a Federal law, with the goal of protecting the country's diversity of species. However, the financial burden of protecting these species where they occur on private land is now borne primarily by private landowners. In its current form, the Act serves as a disincentive for landowners to conserve threatened and endangered species or their habitat.

• *Improve the public notice process for proposed listings.*

The current practice of notifying the public about proposed listings in the *Federal Register* is inadequate. Few members of the public ever read the *Federal Register*. A better system would include public notices with maps of affected lands in general circulation newspapers in affected communities, automatic public hearings in areas affected by the listing, and mailing of specific notices to landowners identified as having the species or its habitat on their property. An Improved public notice process will foster greater understanding and cooperation in endangered species conservation.

• *Improve the requirement for "best scientific evidence available" in listings.*

There needs to be a check-list" of necessary studies completed before listing. The check-list should Include accurate estimates of the number of individuals

and the amount of habitat thought to exist. There should also be accurate information required showing the population trend of the species. Greater emphasis should be placed on surveys of all possible habitat in public ownership before determining the degree of threat to species.

• *Require independent "blind scientific review" of listing and delisting requests.*

A panel of private citizens and scientists should review all proposals. In current form, the Act does not require anonymous, critical review of scientific evidence presented for listings. Without anonymity, objectivity suffers within the close knit scientific community.

• *The Endangered Species Act should recognize that many species that occur in the U.S. occur on the fringe of their range and have always been rare within our boarders.*

Consideration needs to be given to the status of species in the entirety of their range, even if that includes Canada or Mexico. Political boundaries also should not be a factor in determining regional listings within the United States, nor should political boundaries factor in the taxonomic classification of species.

• *Responsibilities of enforcing the Endangered Species Act should be deferred to States.*

In States where their ESA laws are compatible with the Federal requirements, the Federal Government should defer enforcement responsibilities to the States. This would eliminate dual processing and enforcement as well as redundancies in permit compliance. This is particularly useful where Federal listings extend to private lands.

• *When differences arise involving the listings under the Endangered Species Act, provide a dispute resolution provision with specific timelines/milestones for a speedy remedy.*

Often environmental disputes end up in lengthy and costly legal battles where neither party is well served. Provide provisions under the act where both parties can have their disputes arbitrated/mediated in a timely manner. This will discourage individuals who are today using the court system not to protect species, but seeking any available legal means to discourage or delay development through lengthy and costly litigation. Bonding for plaintiff suits would also be encouraged.

I wish to thank you for the opportunity to share our concerns about the Endangered Species Act and its reauthorization. Hopefully, these thoughts will enable you to adopt a bill that will protect and preserve endangered species without creating the many problems that the current act has created. I have included a copy a detailed study prepared on the costs of mitigation for the County Hospital Replacement Project along with my written testimony.

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