ENDANGERED SPECIES PROTECTION

OVERSIGHT HEARING

BEFORE THE

COMMITTEE ON RESOURCES
HOUSE OF REPRESENTATIVES

ONE HUNDRED FOURTH CONGRESS

SECOND SESSION

ON

EXAMINING THE EXPENDITURES OF AGENCIES THAT PARTICIPATE IN THE EFFORTS TO SAVE ENDANGERED AND THREATENED SPECIES

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ENDANGERED SPECIES PROTECTION

WEDNESDAY, APRIL 17, 1996

HOUSE OF REPRESENTATIVES
COMMITTEE ON RESOURCES
Washington, DC.

The Committee met at 11:03 a.m. in room 1324 of the Longworth House Office Building, the Honorable Don Young (Chairman of the Committee) presiding.

OPENING STATEMENT OF THE HON. DON YOUNG, A U.S. REPRESENTATIVE FROM ALASKA; AND CHAIRMAN, COMMITTEE ON RESOURCES

The CHAIRMAN. The Committee will come to order. Good morning.

I welcome all of you to this hearing on the funding of the Endangered Species Act of 1973. The purpose of this hearing is to examine the expenditures of the agencies that participate in the effort to save endangered and threatened species.

In this election year, this Congress has been accused of gutting programs to protect endangered and threatened species. But, the record clearly reflects that this Congress and the American people have made an enormous investment in protecting and conserving our wildlife resources.

The Secretary of Interior has been telling the American people that this Congress only provides about $40 million each year to protect endangered and threatened species. Those of us who have been working on this issue these many years know that we have made a substantially higher commitment in terms of funding.

In 1993 alone, the Federal and state governments spent more than $233 million to protect endangered species versus the statement of the Secretary of $40 million. There are over 20 Federal agencies that spend tax dollars to protect endangered and threatened species.

Total spending for ESA by the Federal and state governments is expected to exceed $3.6 billion dollars for the seven year period from 1991 to 1997. I want to restate that—$3.6 billion dollars. Congress appropriates over $6 billion to the Department of Interior each year to protect our natural resources.

Of that amount, the Fish and Wildlife Service receives $1.1 billion to protect wildlife. The Fish and Wildlife Service is required to report each year on actual expenditures on the Endangered Species Act.

According to the official Fish and Wildlife Service, those reports substantially underestimate the actual ESA-related spending. How-

ever, the reports themselves state that spending has increased from $43 million in 1989 to $291 million in 1992 and $233 million in 1993.

Again, I go back to the Secretary's statement of $40 million. It is an example of election year rhetoric.

The actual spending is far higher than even those numbers reveal. I've asked our staff to prepare an analysis of ESA-related spending. And, those documents are in your folders today.

However, again, the Secretary of Interior still poor-mouths the enormous investment being made by the American people in wildlife protection, giving them little or no credit for these expenditures. Frankly, I am truly sorry that the Secretary of the Interior, Secretary Babbitt, did not accept our invitation to appear today to make the argument for proper funding of the ESA, according to him. I understand that he is going hiking instead.

However, I am happy to welcome Mollie Beattie back. I am happy to have her here today, as I wished her a moment ago full speed and full recovery. She wished me the same thing. We both are achieving those goals.

This Committee had hoped to question the Secretary today about some of the public misstatements he has made. And, we have documentation of all those misstatements.

But, we will ask Ms. Beattie some of those questions and, most of all, we will ask her to take those questions back to him. I will assure you, he will be here before this Committee next week.

It is important that this Committee, as the authorizing Committee for the ESA, determine whether these funding levels are adequate to accomplish the goals of the ESA and whether the American people are seeing a return of this enormous investment in terms of recovery of listed species. Our questions today will be addressed to all witnesses before us.

Again, Ms. Beattie, we hope in the future that Secretary Babbitt will work a little harder to provide honest, factual information instead of political rhetoric to the people of America.

Are there any other opening statements? Mr. Kildee.

Mr. KILDEE. If he wishes, I will defer to Mr. Studds. If he has no comment, I—Mr. Studds——

Mr. STUDDS. I think the better part of wisdom is to retain silence here. I'm shocked at the generosity of my friend from Alaska with all the money he is spending on this. I am very touched.

The CHAIRMAN. Well, you had a lot to do to help me spend it.

Mr. STUDDS. I know. But, I was trying to think here if I had the alternative of taking a hike, which——

[Laughter.]

Mr. STUDDS. [continuing]—decision I would make.

[Laughter.]

Mr. STUDDS. There are hikes and there are hikes, as the gentleman knows.

The CHAIRMAN. Well, if the gentleman would yield, there are many people who have told me to take a hike, too.

[Laughter.]

STATEMENT OF THE HON. GERRY E. STUDDS, A U.S. REPRESENTATIVE FROM MASSACHUSETTS

Mr. STUDDS. The gentleman said that. I certainly did not.

I want to join the Chairman in our warmest welcome to Mollie. We are delighted to have you here. We really are.

I think you probably have a renewed feel for the importance of the statute in question. We all do.

It's very nice to have you back. It really is.

And, I'm going to—you may not believe this, Mr. Chairman, but I am going to refrain from saying anything that would, by the remotest interpretation or stretch, be considered political rhetoric. I think it's very kind of you to hold a hearing on the Endangered Species Act and—this endangered Endangered Species Act.

And, I will keep quiet and see what they have to say.

The CHAIRMAN. The gentleman from New Jersey.

Mr. SAXTON. No.

Mr. STUDDS. Actually, I think we should report the bill, looking around the room.

[Laughter.]

The CHAIRMAN. The gentleman from Michigan.

STATEMENT OF THE HON. DALE E. KILDEE, A U.S. REPRESENTATIVE FROM MICHIGAN

Mr. KILDEE. Well, needless to say, our views on the Endangered Species Act are not quite parallel, Mr. Chairman. And, I find it one of the best congressional Acts on the books and am anxious to make sure that it structurally is not changed in its authorization, that it's—every bill—no bill is written on Mt. Sinai, certainly on Capitol Hill.

But, I really think that the bill that was reported out, I think, last October from this Committee had serious deficiencies. And, I want to make sure that we take care of those deficiencies in any authorization bill and to make sure also that sufficient appropriations are made for this bill.

Thank you, Mr. Chairman.

The CHAIRMAN. I thank the gentleman. The gentleman from Maryland.

STATEMENT OF THE HON. WAYNE T. GILCHREST, A U.S. REPRESENTATIVE FROM MARYLAND

Mr. GILCHREST. Thank you, Mr. Chairman. Tonight, I'm going to a baseball game in my District. It's a brand new stadium and it's called the Shore Birds. And, it's a minor league team.

And, my staff encourages me to do that instead of just going home and spending a pleasant evening with the family, I should do it with the Governor, another Senator, whatever. But, they encourage me because it's part of America's best past time, America's greatest past time—baseball.

Well, this brings me into a conversation about the Endangered Species Act. To me, America's greatest past time is hard work, knowledge and friendship. That's why we have succeeded where other countries have failed.

And, in an issue such as important yet, unfortunately, as volatile, misunderstood, sometimes approached from an extremist per-

spective, this issue of biological diversify for this country, in my judgment, must be approached with people who are interested in it from all perspectives with hard work, knowledge and friendship. And, at that point, I think we will—all of us, collectively and together, regardless of our perspective—succeed in this endeavor, because it will be useful for future generations.

And, I applaud you, Mr. Chairman, and the former Chairman of this Committee, for working together for so many years to bring us to this point. Thank you.

The CHAIRMAN. The gentleman from California, Mr. Pombo.

STATEMENT OF THE HON. RICHARD W. POMBO, A U.S. REPRESENTATIVE FROM CALIFORNIA

Mr. POMBO. Thank you, Mr. Chairman.

I would just like to say that I look forward to this hearing. Over the past couple of years, we've heard a lot about funding on endangered species. I look forward to the opportunity to hear from the Administration witnesses and the other witnesses on exactly how the money is being spent, whether or not it is being done in the best possible manner and what direction we go from here.

So, thank you very much.

The CHAIRMAN. Thank you. The gentleman from Oregon, Mr. Cooley.

STATEMENT OF THE HON. WES COOLEY, A U.S. REPRESENTATIVE FROM OREGON

Mr. COOLEY. Thank you, Mr. Chairman. I appreciate you holding this hearing.

I want to say that I agree with my fellow colleagues that it's important to have these hearings and see how well we are doing and what we can do to bring a balance into the Endangered Species Act before it's renewed.

Thank you.

The CHAIRMAN. Thank you. The gentleman from California, Mr. Dooley.

STATEMENT OF THE HON. CALVIN M. DOOLEY, A U.S. REPRESENTATIVE FROM CALIFORNIA

Mr. DOOLEY. Thank you, Mr. Chairman. I appreciate you holding this hearing.

I look forward to the testimony of the Administration witnesses but also of the second panel, which will include some folks from local agencies and also from the private sector, because we spend a lot of time focusing on the governmental cost of ESA. But, oftentimes I think we are overlooking where the direct impacts of the ESA lie in terms of the cost to our private sector as well as to our local communities.

And, while Secretary Babbitt has made statements in the past that it's only costing Americans 16 cents per person to implement the ESA to achieve its objectives, I guess one of the things that I'm most interested in is if this is an Act that we are trying to meet some societal objectives, regardless if it's 16 cents or $5 a person, as policymakers we have to be concerned with how we allocate those costs among all people. And, hopefully with a reform that will

ultimately be enacted through this body, we will ensure that we are not burdening a select few with the cost of implementing the ESA.

And, I thank you for having this hearing.

The CHAIRMAN. I thank the gentleman. The gentleman from Michigan, I would just like to remind this hearing is on statements made by the Secretary of Interior primarily that have been absolutely untrue and outright lies.

And, I just want to make sure that everybody knows how much money is being spent by the agencies themselves. And, this is what we are trying to find out, why these statements are being made, are they just political intent, are they outright—is he knowledgeable or is he unknowledgeable about this issue.

And, that reminds me, I usually swear in the Administration witnesses. I look at this table and I see most of you I've dealt with before. I don't think there is any need of that.

But, I'm going to suggest one thing. If I find, in fact, any of your testimony is not true, the next time you will be before this Committee very quickly you will be sworn in.

The first witness is the Honorable Mollie Beattie, Director of the Fish and Wildlife Service, U.S. Department of the Interior. And, she is appearing on behalf, unfortunately, of the hiking Bruce Babbitt.

Madam Secretary, you are up.

STATEMENT OF MOLLIE BEATTIE, DIRECTOR, U.S. FISH AND WILDLIFE SERVICE, DEPARTMENT OF THE INTERIOR

Ms. BEATTIE. Thank you, Mr. Chairman. And, thank you for your warm welcome back.

It is, indeed, a pleasure to be here, especially when I consider that the alternative is the neurological unit at Johns Hopkins Hospital. So, I'm very glad to be here today.

The Department of Interior, Mr. Chairman, has worked tirelessly over the last three years to improve the effectiveness of the Endangered Species Act and to identify and resolve problems with its implementation and administration. We have taken dramatic steps to implement and administer the ESA in a manner that conserves species, recognizes the needs of private landowners and achieves these benefits in the most cost effective manner.

We have searched the attic, closets and basement of the Endangered Species Act and found many under-used authorities that have allowed us to resolve or avoid conflicts between species, conservation and other equally important needs of our society. We have used them successfully to resolve a set of past problems which we agree deserve attention.

We are, however, discouraged that these concerted and successful efforts seem not to be reflected in continued attacks from some Members of this Congress which do not reflect this progress nor are reflected in this Committee's legislative proposal, H.R. 2275, which would effectively repeal the Act. We, therefore, have begun to wonder whether some congressional criticism of the Act is meant to be constructive or whether it is really an ideological attack on the fundamental premiss, which is strongly supported by the American people; and, that is that the conservation of species and ecosystems

is an ethical imperative, a critical element of a desirable future for people and the planet and an economic necessity.

In support of this last point that the conservation of biodiversity is both economically feasible and necessary, I would ask to have introduced in the record three recent reports—"The Impact of Endangered Species Listings on Home Building and the Real Estate Industry;" a summary, "The Myths of Jobs vs. Resources: Environmental Protections and Economic Growth," from the California Senate Office of Research; and "Economic Well-Being and Environmental Protection in the Pacific Northwest, A Consensus Report by Pacific Northwest Economists."

Let me illustrate the mixed message we feel we are getting from this Congress. Over a year ago, working with a variety of interests, including the Western Governors' Association, we developed a 10 point plan for responding to a set of problems which we agreed were in need of attention, as I said.

For example, in the past, the Endangered Species Act did not do enough to prevent endangerment, which is a much easier and much less costly challenge than reversing it. We agree that historically this was one of the Act's major shortcomings.

So, for three years, we have put a great deal of time and resources into keeping so-called candidate species from approaching the endangered species list. Between July of 1994 and July of 1995, at least 15 candidate conservation agreements have been made with various cooperators, at least 20 more in progress.

We are emphasizing working with partners to identify candidate species and to plan candidate conservation. By being anticipatory and cooperative, we believe, and we know, we can preclude the listing of many species.

However, just as we begin to count successes in these efforts, this Congress has severely curtailed the funds available for them, providing only $2.7 million reduced by more than one-third from 1995. In the 1996 appropriations bill originally passed by the House, no money was provided for candidate conservation.

For our own and our sister departments, the funds for these discretionary, preventative measures, as opposed to mandated regulatory actions, will necessarily be first to be cut in the current round of budget reductions. We are perplexed by a mixed message that at once asks us to amend the problem and then withholds the means to do so.

The message regarding the importance and economy of prevention rather than cure has been further muddied by the congressionally-mandated moratorium on the listing of species. One hundred eighty-two candidate species and 243 species already proposed for listing are caught in limbo under the moratorium.

It is likely that without attention or protection, they will continue to decline. At the same time that Congress expresses concern about the cost-effectiveness of the Act, it seems to be making sure that the Act will take significantly more time and money and effort to recover these species when authority and funding are restored.

The moratorium means less flexibility and certainty that we are able to provide to those affected and assures increased cost and chaos. We will suffer.

A second historical problem of the ESA was its failure to provide certainty and incentives to private landowners. Although we've made great progress in investigating and providing incentives to landowners for habitat conservation as well as in removing doubt and uncertainty about their responsibilities under the Act, Congress has severely confined our continued efforts in this direction.

Regarding the issue of certainty for landowners, we have required, since July of 1994, that all final listing rules include specific language defining actions to be considered as illegal take of a species. For example, when a freshwater mussel was recently listed, the Fish and Wildlife Service announced that farming and mining in North Carolina and Tennessee would not violate the ESA.

With the moratorium, the Congress has left landowners and species in limbo relative to allowable activities should the species be listed. At present, we can neither work to prevent the listing nor provide information about what would be required if we cannot prevent the listing.

Third, and finally, an example of our success in overcoming past problems is an expanding role of the states and tribes. In July of 1994, we published a very comprehensive policy that outlined how states and tribes would be involved with all steps and phases of the Endangered Species Act implementation.

In 1996, we asked for $27 million to assist with this effort. The Congress' funding proposal is for $8 million.

We have, and continue to make, improvements if you will let us—and can continue to make improvements if you will let us, Mr. Chairman. If not, the legacy of the 104th Congress may be the destruction of one of our nation's most important and precious environmental laws and the impoverishment of our natural heritage.

Thank you, Mr. Chairman.

[Statement of Ms. Beattie may be found at end of hearing.]

The CHAIRMAN. I thank you, Madam Secretary. The next witness is the Honorable Sherri Goodman, Deputy Under Secretary of Defense for Environmental Security, U.S. Department of Defense.

Ms. Goodman.

STATEMENT OF SHERRI W. GOODMAN, DEPUTY UNDER SECRETARY OF DEFENSE FOR ENVIRONMENTAL SECURITY, U.S. DEPARTMENT OF DEFENSE

Ms. GOODMAN. Thank you, Mr. Chairman and members of the Committee. I would ask that my testimony be submitted in the record in full. I will summarize it for you.

I am pleased to be here today. As you may know, the Department of Defense is steward for over 25 million acres of land in the United States. This land is necessary to support the testing of weapon systems and the training of people so that our armed forces are equipped and ready to face any military challenge.

To have the ability to deploy and fight successfully anywhere in the world, our armed forces must train in a wide variety of climatic and terrain conditions. Accordingly, training areas are located throughout the United States in grasslands, in deserts, coastal areas, forests and tundra.

Our training lands are rich in natural resources and are often in pristine condition because they have been spared commercial and

other types of development. In some instances, these areas are the last remaining strongholds of species that have suffered from habitat destruction and other degradation.

Over 400 species that are considered threatened or endangered can be found on lands managed by the Department of Defense. Today, I would like briefly to describe how the Department manages and maintains its testing and training lands to support the military mission, our primary purpose, while at the same time protecting endangered species found on these lands.

Our military activities are planned to ensure the highest possible degree of safety. For example, buffer or safety zones are established around artillery or aerial bombing impact areas.

These buffer zones, in which no activities are usually permitted, also benefit wildlife and particularly endangered and threatened species. For example, the protected red-cockaded woodpecker thrives in the buffer zones of Eglin Air Force Base, Florida, and of many other military installations in the southeastern United States.

Each year, we put a considerable amount of effort into monitoring the migratory patterns and nesting habits of birds, including those which are listed as threatened and endangered. Why?

This information is invaluable to our military planners, since it assists them in selecting low level flight training routes with reduced potential for bird strikes and the resultant loss of air crews and aircraft. One of the first things our military planners did when they went to plan for Desert Storm in Southwest Asia was to understand the migratory patterns of birds.

This behavioral information also assists in selecting ground maintenance procedures around runways which discourage the nesting of birds in inappropriate locations. For example—and, as you will recall, Mr. Chairman—the Air Force's Bird Aircraft Strike Hazard Program is aimed at minimizing collisions between military aircraft and birds. This information is vital.

In September 1995, an AWACS aircraft departing Elmendorf Air Force Base in Alaska struck a flock of Canada geese. The aircraft crashed and all 24 crew members were killed.

As a result of this accident, the Air Force has improved its preparations for the bird migration season and developed a more aggressive program to detect and deter geese from runways around our military installation. This program has also had the effect of reducing adverse effects on bird populations.

Also, in the interest of safety, the Department conducts controlled burns. These burns destroy unwanted underbrush, recycle nutrients and promote healthy, natural habitats. These can be vital to the survival of some threatened and endangered species.

The Department must manage land in a manner that can support sustained training activity. This is an important consideration for the Army, whose training needs, especially for heavy armor are particularly hard on the natural terrain.

However, if training and associated land maintenance are not carefully planned and managed, the land would soon deteriorate, becoming incapable of providing realistic training. So, our second goal, in addition to safety, is providing realistic training for our troops.

The Army, recognizing this requirement, has implemented a land management program called Integrated Training Area Management or ITAM at some 60 of our Army installations. ITAM balances the needs of training with the ability of the soils and vegetation to recover.

Many actions taken to ensure a realistic training environment also benefit vegetation and wildlife.

In recent years, the Department has been taking new management approaches that increase the flexibility to use land inhabited by threatened or endangered species. One approach to manage natural resources is to treat them as part of an ecosystem.

Land management plans and species recovery plans are developed based on a full understanding of resources and habitat throughout the region. The plans balance the responsibility for supporting protected species among all major Federal landowners.

In addition, the plans ensure future development does not interfere with mission capabilities and is compatible with measures to support and protect endangered or threatened species. This approach to land management is being used in the Mojave Desert where five extremely important training, testing and logistics installations are located. The Mojave Desert is where our troops trained for Desert Storm.

DOD is working closely with other Federal agencies, including the Department of Interior and with the State of California, to develop a data base that will ultimately support the development of a desert-wide management plan. In some instances, DOD, in order to increase its operational flexibility—and this is our third conservation goal—has taken action to help a species thrive.

These actions, while modest in cost, have been extremely effective. For example, efforts by the Marines to increase the number of mating pairs of the endangered Least Bell's vireo at Camp Pendelton in California have been so successful that the Fish and Wildlife Service has determined that the establishment of a critical habitat area there is no longer necessary. In addition, the Marines now have greater flexibility in their use of these sensitive lands, such as riverbeds, since the Service has determined that, given the size of this vireo population, a few inadvertent takings would be acceptable.

There is a similar success story at Fort Irwin, home of the Army's National Training Center in the Mojave and of the desert tortoise. This tortoise is extremely vulnerable to predators in its infancy.

Accordingly, the Army, at modest cost, is raising tortoises in a protected area until their shells are hard enough to provide protection against predators. Each year, the Army releases more mature tortoises than are killed by its training activities, thereby providing a net benefit to this endangered species at minimal cost.

The CHAIRMAN. Ms. Goodman, how much more do you have?

Ms. GOODMAN. I have just a very little bit more, Mr. Chairman.

The CHAIRMAN. OK.

Ms. GOODMAN. The Department makes investments each year that ensure that the military mission can be performed with limited or no impact on threatened or endangered species. In some in-

stances, there have been actual benefits to the Department for protecting endangered species.

Recently, the Navy installed propeller guards on its tugs at the Naval Submarine Base, Kings Bay, Georgia, to protect the manatee. The Navy soon discovered that these guards are effective not only in protecting the manatee, but the guards also increased the operating efficiency of the tugs.

In summary, the Department has been able to meet the provisions of the Endangered Species Act, while at the same time conducting necessary training and testing to ensure that we are able to meet any military challenge. We've been able to effectively meet our stewardship responsibilities to protect these endangered species without adversely affecting the military mission.

It has not hurt our military readiness. Our challenge is to continue to protect threatened and endangered species on military installations while we conduct increasingly realistic military training and maintain our military readiness.

DOD has risen to this challenge by managing its 25 million acres of land through a comprehensive integrated stewardship program that ensures our activities do no harm to threatened or endangered species. The proof of our success can be seen not only by the thriving populations on military installations but also by the high state of the readiness of today's military forces.

Thank you, Mr. Chairman.

[Statement of Ms. Goodman may be found at end of hearing.]

The CHAIRMAN. Thank you, Ms. Goodman. The next witness is Major General Stanley G. Genega, Director of Civil Works, U.S. Corps of Engineers, Department of the Army.

Major.

STATEMENT OF MAJOR GENERAL STANLEY G. GENEGA, DIRECTOR OF CIVIL WORKS, U.S. ARMY CORPS OF ENGINEERS

Maj.Gen. GENEGA. Thank you, Mr. Chairman. It's a pleasure to be here and have the opportunity today to describe for you the expenditures and activities of the U.S. Army Corps of Engineers to conserve the endangered and threatened species in connection with our Civil Works activities.

The Corps began to track its national expenditures for implementing the Endangered Species Act in response to the 1988 amendments to the Act. I will summarize our responsibilities, expenditures to date and then provide an example that demonstrates our commitment to the effective implementation of the Act.

The Army, through the Corps Civil Works Program, has planned, developed and currently maintains some 12,000 miles of waterways, has constructed 8,500 miles of flood control levees and 383 reservoirs and has constructed and operates 75 hydroelectric power facilities. The Corps has stewardship responsibilities for nearly 12 million acres of land and water at over 460 projects nationwide.

The annual Corps response to the Department of the Interior has been standardized to include expenditures in the following categories: all costs related to consultation under Section 7 of the Act; all costs for Corps involvement in recovery teams and recovery plans; all costs associated with incidental take provisions issued with the Act's biological opinions; all costs incurred for studies, re-

search, observers and monitoring required by the Act; and, finally, all costs for mitigation.

In the first year of detailed accounting, Fiscal Year 1989, the Corps expended slightly more than $4 million for activities related to the Act. Since then, the Corps can demonstrate a continuing and increasing level of expenditure to ensure compliance.

My detailed statement has great detail on all of those expenditures.

To summarize, in Fiscal 1990 and 1991, our expenditures were in the range of $7 million to $8 million. From 1992 to 1994, the expenditures were in the range of $30 million to $50 million.

And, in Fiscal 1995, the Corps spent approximately $95 million implementing the Endangered Species Act. We estimate in Fiscal Years 1996 and 1997 expenditures of $120 million and $145 million, respectively.

Since Fiscal Year 1992, approximately 75 percent of the annual expenditures for compliance with the Act have been for salmon recovery efforts in the northwest. The remaining 25 percent is across all the other activities.

I would now like to highlight a Corps activity, the maintenance of the Federal coastal navigation system in the southeastern United States, that demonstrates our commitment to effective implementation of the Act. A 1990 study by the National Academy of Sciences estimated that our hopper dredges were killing as many as 500 loggerhead sea turtles and up to 50 Kemp's ridley sea turtles annually.

The Corps South Atlantic Division restricted hopper dredging in those navigation channels to the period of December through March. We began an intensive research effort to develop new technologies to protect sea turtles and to determine the seasonal distribution of sea turtles.

Through our research efforts, we have developed a hopper dredge draghead designed to deflect the sea turtles while not affecting the dredging production rates. Our damage to turtles has reduced dramatically to single figures in a given season.

Another endangered species, the right whale, was found to be at potential risk during that window which was designed to protect the sea turtles. The offshore areas of northern Florida and southern Georgia are the only known calving areas for the right whale in the entire north Atlantic.

To protect these whales, we conduct observation flights over the waters. And, when right whales are sighted, dredge operators are instructed to slow down. Not a single right whale has been imperiled in well over 1,000 trips to the deposition areas for the dredge materials.

In conclusion, Mr. Chairman, the Corps has been making diligent efforts, utilizing state-of-the-art equipment and technologies, to efficiently and effectively understand, protect and restore endangered species and the communities and ecosystems to which they belong.

That concludes my statement, sir. I would be happy to answer your questions.

[Statement of Major General Genega may be found at end of hearing.]

The CHAIRMAN. Thank you, Major General. Excuse me. I saw the first word "Major," Major General.

The next witness is Rolland Schmitten, Director of the National Marine Fisheries Service, U.S. Department of Commerce.

Rollie.

STATEMENT OF ROLLAND A. SCHMITTEN, DIRECTOR, NATIONAL MARINE FISHERIES SERVICE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, U.S. DEPARTMENT OF COMMERCE

Mr. SCHMITTEN. Good morning, Mr. Chairman, and members of the Resource Committee. I very much appreciate this opportunity to review the implementation and administration of the Endangered Species Act by my agency, with a particular focus on the cost to administer the Act and our efforts to prevent species from being listed. I've submitted my written testimony, and I will just summarize some of the key aspects from that testimony.

The Endangered Species Act is one of the main reasons that I came to Washington, D.C. Not only do I support the Act, but I support the necessary changes to the Act that will make it more efficient.

I believe as strongly today as when I left the other Washington that Americans value their environment. In particular, they want clean air and water and places relatively untouched by humans. And, certainly, they value the wild species that reside there. A lot of Americans and American businesses equate a healthy environment with a healthy lifestyle with a healthy economy.

Poll after poll continue to show that not only do Americans desire a healthy environment and associated wild species but are willing to pay for that privilege. There are many legislative tools that provide the American public with a clean environment, but only one primary tool that gives protection to wild species. And that is the Endangered Species Act.

It has been often described as the single most significant law to protect species in the world. However, like much other legislation more than 20 years old, the Act is long overdue for changes that not only will help restore and preserve species but will make it more efficient too.

The most significant improvement to the Endangered Species Act will be that it becomes more proactive in protecting species before they become threatened or endangered so as to avoid listings rather than ambulance chasing after species whose very low populations require them to be listed as threatened or endangered under the ESA. The wait for listing not only drives up costs but more often lengthens the period of recovery.

Last March, the Department of Interior and the Department of Commerce, jointly, offered a 10 point plan outlining administrative steps to improve the management of the Act. I think key among those steps are the following three: one, allowing the public, especially our states, a bigger role in the process; second, providing certainty, at least predictability, to private landowners who encounter endangered species on their land; and, third, requiring peer reviewed science for decisionmaking.

One of the more important proactive tools to avoid listing is the Habitat Conservation Plan, the HCP. This is a tool which, in conjunction with Fish and Wildlife, we are initiating in many parts of the U.S. in partnership with the private sector to protect species.

The HCP gives the private sector the certainty it needs to make business decisions for the future. It also gives the agency the assurance that, in a watershed or an ecosystem basis, species are protected.

I view this as a win/win approach, where previously gridlock and lawsuits have surrounded our listed species. To illustrate the magnitude of our involvement with HCPs, we currently have 29 listed species the agency manages. We are involved in 35 proposed HCPs, representing nearly 6 million acres around the United States.

Just a brief comment on costs to maintain listed species. It's extremely difficult to put a price on the environment or wild species. The Act does not engage in establishing the value or the worth of threatened or endangered species but simply directs what actions are to be taken to list and recover species. In fact, costs are only mentioned in two places in the Act. Both of those are in Section 4, the Creation of Critical Habitat and in recovery plans, where we are to estimate both the time——

The CHAIRMAN. Rollie, let me interrupt you. This hearing is on your cost and what it is costing you and where you are spending the money.

I don't need to have the philosophy of this Administration. I want to get to the roots of where the Secretary has been saying it only costs $40 million.

I have already heard each one of you say it has been costing—in fact, I've got the record here. The Corps of Engineers, this last year, $94 million. The Department of Defense, $19 million.

If I can get down to where you are, Rollie, it's a considerable amount of money. The National Marine Fisheries Service, $21 million.

So, let's talk about where we are spending the money and how you are spending the money and if, in fact, you are being shortchanged. I don't want to hear the philosophies.

Mr. SCHMITTEN. Mr. Chairman, my very next sentence was going to——

The CHAIRMAN. Well, I'm waiting for those sentences.

Mr. SCHMITTEN. 1996, our cost was $21.2 million. In 1997, our cost is $23.5, of which nearly half of that is for northwest salmon.

I would note that in managing costs, it's important that we take the most cost-effective approach in utilizing the public dollars and also that we—I think, as Mr. Dooley commented—that we spread the cost of recovery equitably among constituents, so no one sector bears a disproportionate burden of the recovery.

Those are just a few examples of our administration of the ESA. We are constantly aware of costs associated with the management of the ESA. And, we continue to examine and reexamine how to be a more effective manager. Mr. Chairman, I do appreciate the opportunity to be here.

[Statement of Mr. Schmitten may be found at end of hearing.]

The CHAIRMAN. Thank you, Rollie. The next witness is Jack Ward Thomas, Chief of U.S. Forest Service.

Jack.

STATEMENT OF JACK WARD THOMAS, CHIEF, FOREST SERVICE, U.S. DEPARTMENT OF AGRICULTURE

Mr. THOMAS. Good morning, sir. I will be as brief as possible and maybe we can publish the whole thing in the record.

Our threatened and endangered species program exists to assure protection and conservation of species and the ecosystems on which they depend while providing and contributing to the sustenance of other uses, such as forage for livestock, trees for wood products, recreation opportunities, including hunting and fishing, wilderness and bountiful clean water for on-forest and downstream use. To this end, consideration for threatened, endangered and sensitive species is interwoven in all of our activities.

We have four major administrative operations in the Forest Service—the National Forest System, Research, State and Private Forestry and International Forestry. Each one of those areas has responsibilities in implementing ESA.

In order to meet the diversity goal in the regulations pursuant to the National Forest Management Act, to that end, we have both a threatened and endangered species program, pursuant to ESA, and a sensitive species program, pursuant to the National Forest Management Act. We don't track these programs separately. We track them as a single entity since many of the protection and mitigation measures, habitat restoration and enhancement projects and research and inventory work overlap.

Some portion of every program in the Forest Service is related to protecting species diversity while providing human benefits. Therefore, the costs reported today for the threatened, endangered and sensitive program does not include all expenditures for maintaining these species under such programs as range, fire and forest pest management.

In addition, because of the integrated nature of our work, there is a budget line item for ecosystem planning, inventory and monitoring, which also includes some expenditures that benefit threatened and endangered species.

Our goal is to implement and administer the threatened, endangered and sensitive species program in an effective and efficient manner.

Section 7 consultations have been streamlined dramatically cooperatively with the Fish and Wildlife Service, the National Marine Fisheries Service, the Bureau of Land Management and the EPA. Early involvement of these agencies in the planning phase of development have led to much shortened timeframes for consultation with significant savings.

Nationwide, in terms of Forest Service operations, I know of no backlog in consultation, which is a dramatic improvement in efficiency over the last 18 months.

In FY–1995, $20.5 million were expended to manage threatened and endangered species out of a total appropriation of $23.6 million, which included the sensitive species protection. An additional $11.5 million was spent to protect sensitive species which came from other programs as needed to implement forest management activity.

Research costs for threatened, endangered and sensitive species were $9.6 million. The specific budget line item for threatened, endangered and sensitive species comprises less than 5 percent of the Forest Service 1995 budget.

However, all directly attributable costs of about $44.7 million out of a total of $3.06 billion are about 11 percent of the Forest Service budget total.

I would make the point in closing that about one-third of all the species currently listed occur on national forest and grasslands. Now, I expect as human population pressure and development increase, the Federal lands will become increasingly important to the survival of those species.

We are moving toward an ecosystem approach to management in order to better simultaneously meet the objectives set forth in the laws that direct our action. And, I would point out that if you look at the confluence of all of those laws, we will probably be in approximately the same place as we would with or without the Endangered Species Act.

We hope by maintaining and restoring ecosystems that the productivity of the land will not be impaired and those systems upon which plant and animals and human beings depend will remain functional. This is where the multiple benefits come from over time.

Without those natural functioning systems, those benefits are at extreme risk. I feel that investments made today provide long-term benefits and will cost less in the long run.

And, I would be happy to answer your questions.

[Statement of Mr. Thomas may be found at end of hearing.]

The CHAIRMAN. Thank you, Jack. The next witness is Jack Robertson, Deputy Administrator, Bonneville Power Administration, U. S. Department of Energy.

STATEMENT OF JACK ROBERTSON, DEPUTY CHIEF EXECUTIVE OFFICER, BONNEVILLE POWER ADMINISTRATION, U.S. DEPARTMENT OF ENERGY

Mr. ROBERTSON. Thank you, Mr. Chairman. In the interest of time, I am going to try to boil down my testimony and ask that the whole testimony be submitted for the record.

Again, my name is Jack Robertson, Deputy CEO of Bonneville. Bonneville was created to market power from the Federal hydroelectric resources in the Columbia River Basin. Bonneville's operations are completely funded by revenues and sale of energy and transmission services.

Under the 1974 Federal Columbia River Transmission System Act, Bonneville deposits revenues from energy and transmission sales into the Bonneville Fund at the U.S. Treasury and is responsible for repaying the Federal investment in the northwest hydro system with these revenues.

Bonneville does not receive annual Federal appropriations. The Federal investment, which Bonneville is responsible for repaying, does include investments made by other Federal agencies such as the Corps, the Bureau, the U.S. Fish and Wildlife Service in hydroelectric facilities including measures designed to mitigate for Federal hydroelectric development damage to fishery resources.

In 1980, the Northwest Electric Power and Planning Conservation Act was signed into law. That law, as well as other statutory directives, requires that Bonneville provide mitigation to fish and wildlife resources damaged as a result of Federal hydroelectric development within the Columbia Basin.

The Act also establishes the Northwest Power Planning Council, two representatives for the governors of each of the four northwest states—Oregon, Washington, Idaho and Montana. The Council is entrusted with the responsibility of developing a fish and wildlife program that protects and enhances fish and wildlife in the Columbia Basin.

The Region's 13 tribes believe the program helps fulfill U.S. treaty and trust responsibilities. Bonneville is required to act consistent with the program developed by the Council.

The Council has adopted a series of fish and wildlife programs, the most recent of which was adopted in December 1994. Consequently, Bonneville has fish and wildlife mitigation responsibilities that extend beyond those required under the Endangered Species Act.

Prior to 1990, the Council program included significant measures designed to improve the health of salmon as well as other fish and wildlife. Despite these actions, particular salmon stocks continued to decline.

In 1990, the first petition for listing of a Columbia Basin salmon stock was received by the National Marine Fisheries Service. By 1993, NMFS had decided to list three Columbia salmon stocks as threatened or endangered—Snake River sockeye, Snake River spring/summer chinook and Snake River fall chinook.

In addition, in 1994, the U.S. Fish and Wildlife Service listed the Kootenai River white sturgeon as an endangered species. During the petition process and following the listing decisions, the Council developed new fish and wildlife programs that incorporated additional measures for salmon and sturgeon recovery.

Starting in 1993, NMFS issued the first of several biological opinions identifying measures that are necessary to avoid threats to the continued existence of the species. There is significant overlap in the measures called for in the NMFS biological opinions and the Council program.

Since 1991, Bonneville's fish and wildlife expenditures—getting to your point, Mr. Chairman—have increased dramatically. These increases, along with dramatically decreasing prices from alternative electric power suppliers in 1994 and 1995, led Bonneville customers to consider buying electric power from entities other than Bonneville.

In order to help assure a healthy Bonneville and a recovery of dwindling salmon runs in the northwest, Administration officials developed a plan for identifying the actions necessary for the fishers while limiting the exposure of BPA ratepayers to increasing fish and wildlife costs. Those discussions resulted in an October 1995 letter from the Office of Management and Budget Director, Alice Rivlin, to Senator Mark Hatfield that established expected BPA funding levels for all its fish and wildlife mitigation responsibilities and fallback mechanisms should the court orders lead to additional costs for Bonneville.

Under the agreement, Bonneville will, over the next six years, provide an average of approximately $250 million per year in direct expenditures and will incur an average of approximately $183 million annually in power costs and foregone revenues. These annual power costs and foregone revenues could range from approximately $90 million to $280 million, depending on weather and water conditions and the prices of alternative electric power supplies.

The Administration believes that with these funds, one, adequate measures will be taken to protect ESA-listed salmon and sturgeon stocks in the Columbia Basin; two, the hydroelectric operations prescribed in the NMFS and U.S. Fish and Wildlife opinions will be met; and, three, the implementation of the Council plan will proceed unimpeded; and, four, Bonneville will be able to continue to repay the Treasury, which was about $1 billion last year alone, for Federal appropriations provided to other Federal agencies for fishery activities that mitigate damage caused by Federal hydroelectric facilities.

BPA's submittal to you of March 14th identifies estimated costs incurred by BPA that are required by ESA. In addition, in an attachment, it identifies the total expenditures Bonneville is making for fish and wildlife activities under its statutory obligations.

These total costs, estimated to average $435 million over the six years, Fiscal Year 1996 through Fiscal Year 2001, are based on the Rivlin to Hatfield letter mentioned earlier and are consistent with the estimates provided to you by the power Council. There are essentially three types of fish and wildlife mitigation actions that create costs for Bonneville.

These are, one, operational changes to the hydro system designed to increase river velocity or improve dam passage; two, direct expenditures by Bonneville for measures such as fish hatcheries; and, three, expenditures made by other Federal agencies for which Bonneville has the responsibility to repay.

It's important to note that in the absence of ESA, Mr. Chairman, many of the costs identified by Bonneville as required by ESA might still be undertaken as a result of Bonneville's obligations under the Northwest Power Act or other statutes.

So, in conclusion, I would just say that Bonneville recognizes there are other variables involved in mitigation recovery, such as harvest, habitat and hatcheries. Others, such as fishermen, are paying in terms of reduced catches.

However, Bonneville believes the costs of fish and wildlife mitigation for the Federal hydroelectric system are appropriately borne by the beneficiaries of that system.

The Administration is proud to have reached an agreement which should provide adequate funding to mitigate for damage done by Federal hydroelectric facilities to the Columbia River fish and wildlife resource, including threatened and endangered species within the system, while also limiting the exposure for northwest ratepayers.

And, with that, Mr. Chairman, I conclude my testimony.

[Statement of Mr. Robertson may be found at end of hearing.]

The CHAIRMAN. Thank you, Mr. Robertson. I am going right down the line.

Ms. Beattie, what is your—what's the President's request for endangered species money for Fish and Wildlife this year?

Ms. BEATTIE. Mr. Chairman, I believe it's $83 million.

The CHAIRMAN. Eighty-three million. What is the request from the Defense Department?

Ms. GOODMAN. Mr. Chairman, the Department of Defense does not make a specific request for work to protect endangered and threatened species.

The CHAIRMAN. But, you spent $21 million last year or a little over——

Ms. GOODMAN. In Fiscal Year 1995, we estimate we invested approximately $19.5 million to protect threatened and endangered species. That is——

The CHAIRMAN. What is your estimate——

Ms. GOODMAN. That is less than .1——

The CHAIRMAN. I am asking what is your estimate for this year?

Ms. GOODMAN. I don't yet have an estimate.

The CHAIRMAN. Well, you spent $19 million last year. Are you going to spend more this year or less?

Ms. GOODMAN. I would think it would be approximately the same, if not a little bit less.

The CHAIRMAN. We will put down $21 million. OK. Major General?

Maj.Gen. GENEGA. Sir, we expect about $120 million.

The CHAIRMAN. One hundred twenty million dollars. Rollie?

Mr. SCHMITTEN. Twenty-three point five million.

The CHAIRMAN. Twenty-three point five million. Jack?

Mr. THOMAS. It's $22 million, Mr. Chairman, directly. But, as I pointed out earlier, it will probably, by the time we add research and other items in, the direct line item for it is about $22. It's down a bit.

But, in total, I would suspect about $40.

The CHAIRMAN. Forty. And, Jack?

Mr. ROBERTSON. Mr. Chairman, as you know, it's difficult to pull the ESA costs out of our overall $435 million program that includes costs associated with the Northwest Power Planning Act as well. But, when we estimated this for the Committee, we thought it would be, as best we could determine, about $265 million in fiscal year 1996.

The CHAIRMAN. Two hundred sixty-five million.

Mr. DEFAZIO. Mr. Chairman, before you add it up, could you yield, because I think there will be a problem with the math? I think this is an important point. And, I'm not trying to be mischievous here.

The CHAIRMAN. Pardon?

Mr. DEFAZIO. Could you yield for a moment, because I think that——

The CHAIRMAN. Ms. Beattie has—she didn't bring in the BLM, the Bureau of Reclamations to that. You have that, too, don't you?

Ms. BEATTIE. Mr. Chairman, forgive me. I gave you a Fish and Wildlife Service number and you were asking a departmental question.

The CHAIRMAN. Departmental number, because this is what the Secretary keeps referring to as $40 million a year.

Ms. BEATTIE. Great. If you can just hang on for one minute, we will make an addition here.

The CHAIRMAN. OK. Peter.

Mr. DEFAZIO. Thank you, Mr. Chairman. Mr. Chairman, I would just like to point out—and perhaps the panel could clarify here—the Corps is reporting a number, but in their own testimony they say that 73 percent of the number that is related to northwest salmon is being reimbursed by BPA users who are reporting a number at the far end of the table.

So, part of the number being reported by the Corps is being paid by BPA power users. And, I don't know how many of the other numbers across there might also—what other agencies might receive some reimbursement from BPA.

So, I want to make sure we don't get any double counting here, because we are paying our share in the northwest.

The CHAIRMAN. Yes. I am hoping that will be clarified. I don't think there will be double counting in there.

The two of you can talk to that. Is there double counting there?

Maj.Gen. GENEGA. Sir, I will have to check those exact numbers. I believe I may show a portion of my dollars—a portion are directed——

The CHAIRMAN. OK. I want the exact figures, because again I want to stress the purpose of this hearing is the outright lies of the Secretary saying we are only spending $40 million a year on the Endangered Species Act.

And, if I total this up, it's about $645 million this year. And, the estimates, if I'm not mistaken, at the end of three years it will be—excuse me, by 1997, it will be $3.622 billion.

And, I want to stress this, that this is the type of information that we are trying to achieve from each agency, what this Act is actually costing. We are not arguing whether it's beneficial or not. We are not arguing whether it's the right thing to do or not.

What we are arguing is we do not like, and I do not like, as Chairman of this Committee, to have an Administration of this caliber lying to the general public. And, he's lying, lying, lying.

And, he will be here next week. And, he will be under oath. And, he better have the answers

I'm not finished yet.

Ms. BEATTIE. Mr. Chairman, can I give you——

The CHAIRMAN. Yes, go ahead, ma'am.

Ms. BEATTIE. May I give you the——

The CHAIRMAN. Yes.

Ms. BEATTIE. [continuing]—departmental number?

The CHAIRMAN. Yes.

Ms. BEATTIE. Roughly $199 million.

The CHAIRMAN. One ninety-nine million?

Ms. BEATTIE. Right. And, I'm also advised—I was not present—that the $40 million or $45 million number is a number for recovery, that the discussion was about the recovery budget.

The CHAIRMAN. Well, all I know is just what he is accusing the Congress. He says it's only costing 16 cents per voter. This is the type of information he's putting out.

Now, Rollie, before I jumped on you awhile ago, the thing that got me is what you were saying is what is in our bill. I'm not arguing about our bill.

Peer review, rewarding, identification, all of this is in our bill. How many of you read our bill, by the way?

Have you read it, Rollie? You read it?

Mr. SCHMITTEN. Yes.

The CHAIRMAN. Have any of you critiqued the bill and offered back to the Committee what you think should be improved upon it? Or, have you been told not to do it? Or, have you been asked to do it?

Well, I'm asking you to do it. And, let's start with you, Mollie. What's wrong with our bill?

Ms. BEATTIE. I'm sorry, sir. You are talking about——

The CHAIRMAN. What's wrong with our bill, because you mention in your testimony——

Ms. BEATTIE. [continuing]—H.R. 2275?

The CHAIRMAN. Yes.

Ms. BEATTIE. We believe it—do you mean, what's wrong with it in terms of——

The CHAIRMAN. Well, what's wrong with it? In fact, it has more funding in that bill for ESA than presently exists today.

Ms. BEATTIE. It's our understanding, Mr. Chairman, that that is an authorization, not any kind of an appropriation.

The CHAIRMAN. Well, that's the whole ESA Act itself. We can't do anything.

This is what's in the Act itself. It's authorization under the original Act. And, we appropriate money under the appropriations process.

But, under the—our bill, we actually authorize a higher number of dollars to be spent on what we all think is very, very important. What I am asking you, and what the Secretary is going to be asked, no one has ever told me what's wrong with our bill.

Ms. BEATTIE. Well, we——

The CHAIRMAN. All I've ever heard is it's a terrible bill, because Don Young and Richard Pombo wrote it.

Ms. BEATTIE. Well, certainly——

The CHAIRMAN. That's all I hear from the Sierra Club. That's all I hear from Friends of the Earth. That's all I hear from all the rest of them.

But, no one has ever said what's wrong with the bill. In fact, I talked to the Secretary at the beginning of this session and I said, "Bring down some suggestions on how we can improve this Act, where people hate the administrations right now and," not this Administration, every administration, "how it has been implemented."

I've never got that.

Ms. BEATTIE. I think we would be happy to provide you with some of our substantive criticisms. Many of them have to do with the effect on the scientific base of the Act.

The CHAIRMAN. Again, I'm just saying this has been used as a political ploy when there is a definite need for improvement upon that Act. I heard Jack Ward Thomas say that. I heard Rollie say it. In fact, I've heard every one of these agencies say it.

Even Ms. Goodman here, in fact, talks about the Defense Department. Has any of the other agencies ever told you you couldn't do something at the Defense Department because of the Endangered Species Act?

Ms. BEATTIE. Have any of the other——

The CHAIRMAN. No, no. I'm talking about Ms. Goodman now.

Ms. BEATTIE. Oh, I'm sorry.

Ms. GOODMAN. Mr. Chairman, the current Endangered Species Act does provide for a national security exemption. The Department of Defense has never sought such an exemption.

The CHAIRMAN. So, you don't have to list anybody if you don't want to? But, you have been—you've been——

Ms. GOODMAN. We could seek an exemption under the Act, but we have never seen the need to do so.

The CHAIRMAN. OK. Now, secondly, who participates in endangered species cataloguing of those species on military bases?

Ms. GOODMAN. Each of our military installations participates. They have——

The CHAIRMAN. I mean, anybody, any other agencies or is it just you? Is it in-house?

Ms. GOODMAN. We work very closely with the Fish and Wildlife Service at all of our military installations that have threatened and/or endangered species.

The CHAIRMAN. All right. I'm out of time. And, Richard Pombo, would you take the Chair, please?

And, you can continue this questioning.

Mr. POMBO. I recognize the Ranking Member, Mr. Miller.

Mr. MILLER. Thank you, Mr. Chairman. I guess this hearing is about the allegations of the Chair, whether or not the Secretary of the Interior is a liar or not.

And, those are obviously very serious charges. And, I don't think that the testimony to date supports those charges.

But, let's just—let me ask a couple of questions here. In the figures—apparently this is all going to depend upon these figures that are developed or have been developed.

Mr. DeFazio just raised the question about the figure reported by the Corps, what amount of that is reimbursed by BPA with respect to the Columbia River operations system, what amount is reimbursed by BPA. The Northwest Power Act requires you to reimburse up to what amount?

Mr. ROBERTSON. Which is, on average. We reimburse the hydro power cost associated with dams about 78 percent. Mr. DeFazio's point is a good one.

We do add reimbursable costs into our cumulative——

Mr. MILLER. And, those costs are driven by the Northwest Power Act?

Mr. ROBERTSON. That's correct.

Mr. MILLER. When you apply—and let me ask you both, the Corps and—because I don't know whether it applies both to the Corps and BPA. When you apply costs to maintenance of species or recovery programs, all the regimes that you operate under there, you apply a cost of power revenues foregone and the purchase of substitute power; is that correct?

Mr. ROBERTSON. Yes.

Mr. MILLER. Do you do that when you reduce flows for irrigation and/or navigation?

Mr. ROBERTSON. No.

Mr. MILLER. I see. So, the critters get charged, but those who use the river system and those who require you—the laws that have been written for you to withhold water for navigation or withhold water for irrigation so you can do time of release do not get charged?

Mr. ROBERTSON. Under the Acts, including the Northwest Power Act, we have a responsibility to determine the crediting mechanism for fish and wildlife, to include, for example, purchased power that we get from California, for example, in order to mitigate for those flows. So, we are trying to comport with the laws of——

Mr. MILLER. No. That's what the law requires you to do.

Mr. ROBERTSON. That's correct.

Mr. MILLER. But, the allegation that is made that, you know, somehow the Secretary is a liar here might be suggestive that maybe Congress is cooking the books, because we have skewered the accounting system against that. And, I would assume that if I went down to the Central Valley Project I might find the same thing.

I don't know whether that's true or not. I think they are here later or something.

I don't know when you put on the books, the Colorado River system puts on the books, releases for environment if those are costs or releases—where they hold for irrigation late in the year, whether that's a cost or not. I don't know.

But, I think when we make allegations about somebody's lying, we ought to know how the figures are, in fact, arrived at, whether we are—I think in one of the memo's we've been given the background for this hearing, in fact, the moneys from BPA to the Corps have been double counted. I don't say you've done that, but I think in putting these figures together. These are very serious charges.

And, in fact, I think the other thing that would be helpful for us to know—and maybe you can help for the hearing next week—and that is to what extent are these costs driven by other statutes. Some of these costs are driven by statutes creating the refuge system, creating obligations within the refuge system.

They are driven by the Central Valley Project Improvement Act. We have obligated that project now to do certain things outside of ESA or in accordance with or compliance with state obligations that are there and state sense of responsibility is there.

What, if any, of these costs are driven by state acts, proposals or projects, where you are responding to state highway systems or to state tidal land decisions?

I mean, I think this is important, because the notion that you are going to lay all of this off on ESA and if there is not a dollar for dollar accounting that somehow the Secretary is a liar, I think completely—it's my impression that this would completely mischaracterize how this law is administered in conjunction with a whole other set of bodies of laws that have grown up in the forestry industry, in the Bureau of Reclamation and in the Power Acts, in the Refuge Acts. You know, I think that we've got to take a look at that.

The biggest figure—since I came to the hearing—that has been on the table is the BPA, the $265 million. What would you be spending, you know, just under the Northwest Power Act?

Mr. ROBERTSON. As I indicated in my testimony, Mr. Miller, there is a significant amount of costs associated with the Northwest Power Act and the Planning Council's Fish and Wildlife Program that is designed by the four northwest governors.

Mr. MILLER. Right.

Mr. ROBERTSON. But, we did our best, because it's an integrated hydro system and if you pull a piece apart——

Mr. MILLER. Well, that's——

Mr. ROBERTSON. We did the best we could to kind of figure out from this which were ESA-dominated costs versus costs associated with the Northwest Power Act and the——

Mr. MILLER. But, pardon me. I am running out of time, and I don't mean to characterize you.

But, I mean, I think that's the point. These are integrated systems. The CVP, the Colorado River system, the refuge system of this nation, the shorelines of this nation, the tidal lands, these are all integrated systems.

In some cases, they run across states. And, the fact of the matter is that they are integrated.

And, the fact is in many of these instances the Congress has come in with independent actions—I assume they are representing the constituents of their states and their districts—and directed these entities, these various power authorities and others, to take better care of the environment and have given you the costs and, in some cases, given you the money to do that. The Northwest Power Act and the Planning Councils came long after ESA.

Am I right, Peter? Isn't that correct? Because there was concern in the northwest about the loss of these species.

The Central Valley Improvement Act came long after the initiation of either the Central Valley or ESA, but we directed costs and we directed expenditures. And, so I think it's a little disingenuous to suggest that all environmental costs end up on the back of ESA or even the administration of ESA ends up on the back of ESA, because you are directed to do things that are in conformity with or in spite of ESA under these various authorities.

Thank you, Mr. Chairman.

Mr. POMBO. Mr. Hansen.

Mr. HANSEN. Thank you, Mr. Chairman. In regard to the validity of some of the things that the Secretary has said, let me point out, if I may, respectfully, and that is Mr. Hefley passed a bill called H.R. 260 some time about national parks, which most of the people from the Department agreed on in the 103rd session of Congress.

Now, I have a list of everyplace the Secretary has been going. In fact, I happen to have every statement that he has made.

And, he talks about the closing of national parks all on through his statement. And, I would sure like to see somewhere in H.R. 260 that it closes one national park.

In fact, on Page 13, it specifically states it closes no national parks, only the same way it has been done. And, if anybody wants that list of the Secretary standing up and whipping up the crowd

to a frenzy about these crazies, they are closing national parks, I would be happy to do it.

And, I am looking forward to having the Secretary come in, because I intend to go through that list point by point, park by park. And, let me unequivocally state there is no park closing bill, regardless of what Secretary Babbitt or President Clinton has said.

Now, call that what you want, but somewhere along the line, I have a very hard time saying that is truth of the first way.

Ms. Beattie, if I may ask you a question, a lot of people around here have talked for a long time and we've spent a lot of time in this Committee trying to modify the Endangered Species Act. For some reason, some people get the impression that if a bill is passed around here that it has come from the hands of Moses and it cannot be changed, one comma.

I personally feel that Mr. Pombo and Chairman Young have done a very good job. And, the Committee has worked very diligently on this.

I haven't seen from your group anything saying where you agree or disagree with the bill that has now passed this Committee regarding the Endangered Species Act. Is there such an animal?

Have you given us some suggestions on it? And, who did you give it to?

Ms. BEATTIE. Mr. Chairman, I believe that we—and, Congressman, I believe that we did provide testimony, a hearing at which I was not present, but Assistant Secretary George Frampton spoke to the bill and, I believe, provided a fairly detailed critique.

Mr. Chairman, may I also read—maybe I can clear up a little confusion on this $40 million number and perhaps go back to the question. I've got a letter from Assistant Secretary Frampton to Chairman Young, dated April 1st.

He says, "For Fiscal Year 1995, Service appropriations to carry out programs for the recovery of listed species were $39.7 million." That may be misleading, because recovery under the Endangered Species Act has a capital "R." It is actually a sub-line item. It has a formal meaning.

This paragraph may look like we simply mean the recovery of endangered species is the whole program. But, $39.7 million was the recovery—essentially the line item. That's not quite technically true, but the line item.

One other paragraph. In the same letter, the Secretary says, "Based on the published Federal and state endangered species expenditure reports, for Fiscal Years 1989 to 1993, which identify expenditures that are reasonably identifiable for the conservation of threatened and endangered species by Federal and state agencies, about $861,800,000 was expended during the five year period."

So, I think the distinction here is between a total number and a $40 million number quoted as one sub item of the endangered species budget. And, that may have led to the confusion.

That letter is April 1. And, I believe all members have it.

Mr. HANSEN. How many—let me ask you this question.

Mr. POMBO. Not taking from your time, Mr. Hansen, I would like to request that he be given the additional time. The quote that I believe the Chairman referred to that came from the Secretary was that—and this is from the Secretary, "Never mind that this Act is

working, having saved 99 percent of all listed species. Never mind that it effectively protects hundreds of plants and animals from grizzly bears to whooping cranes to greenback cutthroat trout. Never mind that it's doing so well, costing each American 16 cents per year."

That was the quote that came from the Secretary. And, I have read Mr. Frampton's letter, but I believe that the letter is different than what the Secretary said.

So—and I will yield back to Mr. Hansen.

Mr. HANSEN. Thank you. Let me just state that regarding the information that Mr. Frampton has, I haven't seen it as one of the senior members of this Committee.

And, I really think this Committee worked very diligently. I don't think one of us came up with anything we really wanted.

This was a composite of what we felt should be changed. Every law, you work with it awhile and you see that it has some necessary changes.

And, I think this is what happened in this Act. I am a little disappointed in the Administration for not coming up with something to say, "Look, we disagree."

I've had call after call in to Mr. Babbitt and Mr. Kennedy. And, Mr. Kennedy has returned most of my calls, as Jack Ward Thomas does. And, we can sit down and resolve things.

But, I kind of—when I get this stonewalling bit, it kind of irritates me a little bit. I would kind of like to know why it's so doggone hard to do an HCP.

In the state that I represent, down in southern Utah, we have the desert tortoise. And, that little county of Washington County put millions of dollars in it.

They came back here, spent hours and hours with George Frampton. I went down with them twice. And, it took us years to get it done at a cost that would, in effect, break most of our little counties and cities in America.

Why is it so very difficult? And, we really didn't change it much from the first to the last.

I mean, where is all this red tape coming from?

Ms. BEATTIE. Congressman, it's difficult, because it's new. When we first came to this job and the idea of actually using HCPs, we had, I think, about 20 in place. We now have 150 in place and 200 applications in our in-box.

And, so we are getting good at it. Any time you take time to involve all parties to be very careful about—to provide long-term plans that provide certainty, it's going, in the short run, to cost more and save money in the long run.

We just, as of yesterday, finished essentially an HCP in southern California. It was approved by the County Board of Supervisors in Orange County by a 5/0 vote yesterday.

And, here is a letter from a development company in southern California. The Irvin Company has been a participant, because it seemed to hold a promise of a better way to achieve meaningful environmental protection in concert with continued economic prosperity.

An HCP offers several advantages. Comprehensive planning of multiple species and habitats before they are in crisis; in other

words, preventative medicine. Coordinating overlapping, Federal, state and local regulatory processes.

Now, that kind of thing is important to do. And, it doesn't come cheap. It takes time. Voluntary local consensus building and greater certainty for the environment and the economy.

Mr. HANSEN. The problem with your HCPs is when you finally get one resolved, you move into a lot of private ground. And, the few I have watched, that's what it was a result of.

And, in Washington County in the State of Utah, they have agreed to buy a lot of private ground. If I take that and extrapolate that out over the number of areas where HCPs are pending, you don't have enough money in the budget.

You don't have enough money in your budget to take care of what you have agreed to do on the private ground in the State of Utah. How do—this is kind of nonsense.

What's going on?

Ms. BEATTIE. Congressman, I can tell you that we are making them work and that it's an eminently sensible approach to say, "Look, this habitat here, let's keep the economy going on this habitat here and let's save this habitat over here." It—and you are going to——

Mr. HANSEN. Ms. Beattie, what I'm saying is an HCP is sitting there and finally we agree on this is private ground where we happen to have an endangered species and this is public ground. And, we finally start drawing lines and saying this will be here.

But, we can't just say to those people, "Well, you've owned the ground for 40 years. Take off, guy, you don't deserve it anymore." We have to pay them.

I mean, that's just basic law, so to speak, eminent domain in the counties and the cities. We do that all the time.

Just in this one instance, I don't think it will be 20 years before those people are paid off. And, what do they do in the interim period?

I mean, you've got—you are talking millions and millions of dollars right there in that little county.

Ms. BEATTIE. Congressman——

Mr. HANSEN. Now, I go over to the Mojave area. You start going into the areas around the Grand Canyon. You go to the areas in the south.

I just don't know where you are going to come up with that kind of money.

Ms. BEATTIE. Well, with your permission, I would love to provide you with some of the funding mechanisms that we have used to make these HCPs work around the country. And, many of them are very creative. And, we have many successes.

Mr. HANSEN. Well, I guess my time is up. But, I would like to send you some questions. And, I would really appreciate it if you would respond to them.

Ms. BEATTIE. I would be more than happy to.

Mr. HANSEN. Every time I send a question to Mr. Babbitt, I don't get a response lately. But, I would like to have some of you folks respond. And, I would appreciate it.

Thank you, Mr. Chairman.

Mr. POMBO. Thank you. Mr. Kildee.

Mr. KILDEE. Thank you, Mr. Chairman. To Ms. Beattie, could the moratorium, an additional listing of endangered species, not only lead to possible extinction of some species but also to a greater cost to the taxpayer in saving certain species because of the greater endangerment?

Ms. BEATTIE. Yes, Congressman. I think the number I have here is 243 species are being held in limbo. These were already proposed for listing in addition to another 182 candidates species.

Of that 243, I believe the number is about 160 that we are worried about may get very close—are getting closer to the brink. They have significant threats facing them, significant ongoing threats facing them, from which they are now not being protected.

And, the basic theory of the Endangered Species Act expenses is that the longer you wait the more it costs. The longer you wait, the less certainty you can offer landowners, the less kind of cooperative long-term planning you have time to do.

It's the old theorem that the lack of planning always costs more. And, if we have to wait until the species has gone over the edge and try to pull it back on, it takes more effort, more money and, I would say, more chaos.

Mr. KILDEE. What was the—I wonder just what the purpose of the moratorium was. Was it to save dollars or was it some problem with the concept of biological diversity?

Ms. BEATTIE. I can't speak to that, Congressman.

Mr. KILDEE. I probably should ask the person who put the moratorium on. But, it would seem to me that it wasn't the question of trying to balance the budget, as was in the Contract With America, trying to balance the budget.

But, it would seem to me that when you put a moratorium on something like that, it's really a misconception or a lack of agreement with the idea that biological diversity is very important.

Ms. BEATTIE. That would certainly have a negative effect on biological diversity. I can't speak to whether that was the intent.

But, if it were either to reduce costs or improve certainty, it has had the opposite effect.

Mr. KILDEE. Thank you very much.

Mr. MILLER. Will the gentleman yield?

Mr. KILDEE. I will be glad to yield to the gentleman.

Mr. MILLER. On that point, I think already in California we have seen a case where the moratorium—where we have small businesses that are associated with recreational fishing and some of the commercial fishing interests who have sought the listing of the salmon but have been now told by the court that because of the moratorium, while it should be listed, they cannot list it. And, I think the point made here by Ms. Beattie is that the longer we wait the more expensive it gets.

These people actually believe—and I think with some pretty good intuition here, given the history of these fisheries—that they are going to lose their business opportunity and their investments if, in fact, we don't take steps now to try to save these fisheries. But, that's all being put off under the moratorium.

So, it's not about saving money. It may be saving some administrative dollars somewhere in the governmental organizations, state and local governments.

But, it's costing private people a lot of money, because what they can't either arrive at is the certainty of knowing where they are going and getting on with these actions so people can, in fact, utilize their business opportunities, their land or otherwise. And, so, you know, it's having its effect.

It wasn't a free moratorium. And, unfortunately, in this case, it's hitting a lot of relatively marginal and small family businesses that caters to tens of thousands of people who enjoy recreational fishing and create that industry in parts of the west coast.

I thank the gentleman for yielding.

Mr. KILDEE. Thank you. I yield back the balance of my time, Mr. Chairman.

Mr. POMBO. Mr. Saxton.

Mr. SAXTON. Thank you, Mr. Chairman. Mr. Chairman, from the testimony today, I think everybody in the room can agree that the Federal Government alone spends significantly more than $40 million a year on endangered species matters.

And, so, at least for right now, I would like to get past that and just say that we spend a significant amount of money, whatever it is. And, we ought to be about trying to figure out how to spend that in the most efficient way that will benefit everybody who is interested in this issue and, in fact, the endangered species as well.

It seems to me that the reauthorization ought to proceed with that in mind and that there are, at least, two major concerns. One was exemplified in the "Philadelphia Inquirer" a month or so ago.

And, there are a group of people who are very concerned about making changes to the Act to take care of these concerns that were expressed in this article. And, that is that—the headline of the article said that more species are disappearing today than at any time since the dinosaur disappeared.

That was the headline. And, the article went on to explain why that was happening and gave examples.

And, there is another group of folks who are equally concerned about this Act, because they think it doesn't work very well for them in their areas. And, there is a legitimacy to that, as well, because many people have suffered grave economic losses because of the way this Act operates.

Now, in listening to the testimony this morning, I heard, and particularly Rollie Schmitten began to talk about how to change the Act to solve these kinds of problems. And, that's what I think we ought to be doing.

Now, Ms. Beattie, let me just ask you. Rollie mentioned prevention. If, in fact, we were able to prevent species from becoming threatened, much less endangered, it seems to me that that would be a good exercise. It would certainly cost the Federal Government less, I would think.

Do you have in mind any ways that we might look at legislation that might begin to accomplish that?

Ms. BEATTIE. Yes, we do. The 10 point plan that we put out last year, just a little over a year ago, included mostly administrative changes that would move us toward higher certainty at lower costs, better conservation, et cetera.

Mr. SAXTON. Entering into agreements with landowners that——

Ms. BEATTIE. Yes.

Mr. SAXTON. [continuing]—they might agree to voluntarily?

Ms. BEATTIE. Exactly, which is largely what the Habitat Conservation Planning covers. There were also in that 10 point plan several improvements toward the end that you just mentioned, Congressman, and other improvements which, again, we agree need attention that really require a legislative change.

And, I could give you some examples. They involve some sort of technical explanations of the Act, which are——

Mr. SAXTON. Thank you.

Ms. BEATTIE. [continuing]—fairly——

Mr. SAXTON. Let me move on to another question, because my five minutes will just fly right by. I spent several days last week out with Ms. Cubin in her district, talking with her constituents about predator control. And, of course, you can't talk about predator control without talking about the Endangered Species Act.

And, it seems folks in Wyoming don't like this Act at all, as you probably know, or at least most of them don't. And, one reason is that we have protected the grizzly bear to the extent that many ranchers think they are going to be out of business because of predation that happens because of the recovered grizzly bear.

And, yet it continues to be an endangered and protected species. It seems to me that there ought to be some changes to the current law with regard to the de-listing process.

Now, Mr. Pombo has suggested some very dramatic changes, I think. Maybe they move in the right direction. Maybe they move too far.

But, it seems to me that there would be more public support if we could do something to streamline the de-listing process.

Ms. BEATTIE. I agree with you. In times, Congressman, of short budgets, the de-listing process sometimes doesn't get as much of our attention as many other emergencies that are facing us.

We have worked very hard to turn that around recently and to work on as many de-listings and what we call up-listings, going from endangered to threatened, which has much more flexibility in terms of how you can deal with those species.

Mr. SAXTON. let me just move on to another subject that's near and dear to my heart. And, that is peer review.

It's not required under the current law, as I understand it. Do you believe that there should be more expert scientific attention paid to these issues and would that help the bill to work better?

Ms. BEATTIE. I will say that we would welcome a legislative change that reflected the fairly thorough peer review through which we put our decisions now. Because the law doesn't require it doesn't mean we haven't been doing it.

And, we have been doing it fairly assiduously and fairly carefully. We seek out all experts on an issue and ask them to look at our decisions and to make recommendations to us.

Mr. SAXTON. Well, thank you. Once again, Mr. Chairman, I think we have established that there is a significant expenditure on behalf of endangered species.

And, I think that the Chairman should be commended and you should be commended for helping to bring this matter to light. And, I would just like to say that the issues that I just discussed with Ms. Beattie are issues that I know you are concerned about and

that I'm concerned about and that Mr. Gilchrest is concerned about, and I'm sure others are concerned about.

And, I think we can find some common ground here if we work together, as Mr. Gilchrest suggested in his opening statement.

Thank you.

Ms. BEATTIE. Thank you, Congressman.

Mr. POMBO. Mr. DeFazio.

Mr. DEFAZIO. Thank you, Mr. Chairman. I would like to go back to the point I raised when the Chairman was in his initial interrogatory, which is the double counting.

I mean, you all are members of one Administration. And, I would hope that by next week, apparently when the Secretary is coming, that the Administration could come up with a unified number that doesn't double count.

But, let's—I mean, at this point, now, General, have you had an opportunity to review that issue?

Maj.Gen. GENEGA. Sir, I don't have the number. I would like to submit that for the record.

[The information may be found in letter of April 22, 1996, at end of hearing.]

Maj.Gen. GENEGA. I—my numbers do include the reimbursement from BPA. I'm certain of that.

I just don't know the amount. But, I will submit it for all those years.

Mr. DEFAZIO. OK. And, Mr. Robertson, then your numbers would reflect the reimbursement to the Corps of Engineers?

Mr. ROBERTSON. Our overall numbers do reflect our reimbursement historically to the Corps of Engineers, that's correct.

Mr. DEFAZIO. All right. There's at least one clear instance of, you know, millions of dollars of double counting here.

And, I would like to make certain that we, as much as possible, get those things clarified.

To Mr. Robertson also, to follow up on Representative Miller's question about the other things which are or are not counted, my understanding is the number you have given us here reflects power foregone and power purchased. And, you are saying—I thought I heard you say, but it would seem to me to contradict, that you have somehow culled that down and these numbers are attributable mostly to ESA as opposed to the Northwest Power Act requirements?

Mr. ROBERTSON. The total amount of our budget for fish and wildlife, as I indicated, is $435 million. And, of that amount, about $183 million, on average, is for power purchases or for foregone revenues, which is basically spill at each of the Federal projects.

In the breakout that we sent the Committee, as of March 14th, we do include both power purchases and foregone revenues as one of the expenses. They are included as an ESA-related expense.

And, they are tabulated because of the calculus specifically in 1996 at $195 million together.

Mr. DEFAZIO. But, at another point in your testimony, you said that you had tried to discern what was attributable to the Northwest Power Act and what was attributable to ESA.

Mr. ROBERTSON. Right.

Mr. DEFAZIO. Now, you are not saying that all your so-called foregone revenues and power purchases are attributable just to the Endangered Species Act?

Mr. ROBERTSON. Well, the biological opinion that was put together by NMFS since 1980 has increased the number—the river has changed dramatically as a result of the biological opinion. And, that has changed the shape and course of our power purchase responsibilities and our spill as well.

Now, coincidental with that—so beginning in about 1992, as we went through biological opinion review under the ESA, we did change flows and spill significantly. And, we tried to capture that reality in the numbers.

There was, coincidental with that, changes associated with the Council Plan under the Northwest Power Act, most recently in 1994. And, they also incorporated changes of spill and flow.

And, so the fundamentals are that since the law requires that we act under both of those Acts, we are significantly adding those costs. And, your question is why is it counted ESA versus under the Northwest Power Act.

Mr. DEFAZIO. Yes.

Mr. ROBERTSON. The answer is that it's related largely to biological opinions. If the Northwest Power Planning Council changes their fish and wildlife program numbers discussed, and the ESA didn't exist, those numbers would drop.

Mr. DEFAZIO. But, the Council plan, as I understand the Council plan, and I'm somewhat a student of this, I think would engender most of the same costs.

Mr. ROBERTSON. I think that's fair to say under the present plan.

Mr. DEFAZIO. So, I think that the statement earlier that you had culled down to things that were mostly attributable to ESA is not entirely supportable here. And, in fact, we would say that even if the ESA were repealed or the Pombo/Young version of ESA were put into effect, you would still have a significant number of those costs.

And, also in terms of——

Mr. ROBERTSON. As long as the Power Council didn't change——

Mr. DEFAZIO. Right. And, since they are charged with recovery and since we've gone from salmon too numerous to count to salmon that we can individually name, I don't think the Council is going to immediately—if I could ask Ms. Beattie just for reference, where do most of the Columbia River salmon go?

Are they north turning or south turning? Are you aware?

Ms. BEATTIE. A trick question.

Mr. DEFAZIO. Well, Rollie, do you want to answer that? You know that?

Mr. SCHMITTEN. Yes, Mr. Chairman. Most of them are north turning.

Mr. DEFAZIO. North turning?

Mr. SCHMITTEN. Yes, sir.

Mr. DEFAZIO. Where do they go?

Mr. SCHMITTEN. They go both off of the north coast of Vancouver Island, then off the southeast portions of Alaska, out into the Bering Sea and make a cyclic turn and ultimately come back at the end of four years.

Mr. DEFAZIO. So, could we intimate that some of those salmon are perhaps caught by an Alaska-based fisherman?

Mr. SCHMITTEN. Yes, sir.

Mr. DEFAZIO. OK. I wish the Chairman was here. We want to make sure that he's aware of that.

[Laughter.]

Mr. DEFAZIO. If I could return to Mr. Robertson for a moment, I believe also, when I chaired a subcommittee oversight on BPA a few years ago, it took me—after three attempts I did finally get a number from BPA regarding foregone revenues because of irrigation and summer navigation.

Are you familiar with that number? If not, I can provide it.

Mr. ROBERTSON. I think it was about $150 million to $300 million, depending on the alternative costs.

Mr. DEFAZIO. That's correct. OK. Thank you. I would just like to point out that, I mean, we have a disturbed river system. We have the dams.

And, yes, if you ran the dams only for hydro power and excluded irrigation and excluded summer navigation and excluded fish and fish recovery, we could have cheaper power. But, I don't think that even my colleagues on the other side of the aisle would advocate that we do away with the irrigation and the navigation in order to have a pure market-based power rate.

And, they probably might not even go so far as to advocate we shouldn't run it totally to the detriment of the salmon. But, maybe not.

Mr. ROBERTSON. Just to add to the point, Mr. DeFazio, since we've submitted that information to you a couple of years ago, those numbers, we think, have gone down somewhat. They are still significant, obviously, but they are based on marketplace alternatives for power. And, as you know, those alternative marketplaces have gone down almost by half. So, the number is smaller but it's still significant, we think.

We would be happy to provide an updated number for you.

Mr. DEFAZIO. All right. Well, the marketplace—of course, marketplace power but also river conditions have changed. And, so this year I would assume that your estimates of foregone revenues due to spill, since my understanding is you are in a condition where you are spilling more than, in fact, people want to spill because of the high river conditions, that those numbers would come down, too.

Mr. ROBERTSON. Right now, river conditions are 134 percent of normal. It's a huge water year.

And, so we are spilling uncontrollably at this point. The river is only 40 percent controlled by the dams. So, there are a lot of control questions and spill questions that relate to natural runoff.

Mr. MILLER. Could we put the fish power out to bid and see if maybe we could get a better deal?

Mr. POMBO. Mr. Gilchrest.

Mr. GILCHREST. Thank you. Just a quick, off the record comment to Mollie. I took my son to Castleton and Johnson.

If we took the Fish and Wildlife budget dealing with ESA, I would suppose that we—and you don't have to tell us now, but the $39 million for recovery, there's also, I'm sure, line items for de-

listing for habitat conservation costs, for research. All those items could be specifically given to us.

Ms. BEATTIE. Absolutely. Some—de-listing is, in fact, the same line item as listing, which is why at the moment we have almost $2 million worth of de-listings to do, which we can't do because the entire listing crew has been put in mothballs because of the moratorium. So, the de-listings just sit there. We don't have anybody to do them.

And, my point is that the de-listing and the listing are the same line item. But, yes, we can give you all that information. Recovery is a line item, et cetera.

Mr. GILCHREST. I would like to ask a rather generic question and have each of you respond to it in the time that's remaining. Basically, what would you say are the benefits to the areas that you serve as far as the local people in those regions are concerned and, I guess to a larger extent, the Nation as a whole as a result of your expenditures directly related to the Endangered Species Act?

We spend a lot of money, whether it's Fish and Wildlife, the Department of Defense, Corps of Engineers, NMFS, National Forest and so on. We spend money as a result of the law.

Can you tell us, as a result of your activities, what are the direct and indirect benefits related to those costs?

Does anybody want to——

Ms. GOODMAN. The direct benefit is that we in the Department of Defense are able to provide realistic training because we maintain the natural habitat. The indirect benefits are that we provide safe operations in terms of preventing bird strikes against aircraft, and we also provide flexibility in our training by working cooperatively with the Fish and Wildlife Service to recover species on one part of a military installation in order to allow for greater flexibility in training in other parts of the installation.

The larger and very important indirect benefit is that our military is there to defend America. And, part of defending America means defending where we live, where we work and where we play.

And, that's the natural habitat. That is part of our military, part of our American heritage.

So, we take that as part and parcel of what the Department of Defense mission truly is.

Mr. GILCHREST. Thank you.

Maj.Gen. GENEGA. Sir, I would say it enables the Army Corps of Engineers to get the job done, to get our contribution to the economic security of this country in navigation, hydro power and flood control in a fashion that preserves the environment and thus ensures that frankly our grandchildren and great, great grandchildren are still going to be able to get those jobs done with a healthy environment.

Mr. GILCHREST. Thank you.

Mr. THOMAS. I could say that, one, is—again, as I said to begin with, I'm not sure this Act is costing us anything that we would not be obligated to do under other Acts that tell us how we should manage the people's lands. For example, to quote from the Endangered Species Act, "to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved."

Those are the same ecosystems that people depend on to provide over the centuries a flow of goods and services.

I would also point out that, according to the Multiple Use Sustain Yield Act, it says that our objectives are to be accomplished without impairment of the productivity of the land, with consideration given to relative values of various resources and not necessarily the combination that gives the greatest dollar return or greatest unit output.

So, basically, I think that this, along with the other Acts under which we do, is to preserve those ecosystems of which these are a symbol. And, then why do we do that? In order to retain the ability to produce goods and services that all the American people require.

Mr. GILCHREST. Thank you very much.

Mr. SCHMITTEN. Mr. Gilchrest, I think the direct benefit, from our point of view, is that no species have gone extinct. Under our management, the great whales, the fin fishes and others will continue in existence for future generations to enjoy.

I think indirectly it certainly reflects what I hear the public saying in its support for the environment and species that are there. Many people, certainly in the northwest, identify the health of the environment also with the health of the species.

And, bald eagles and salmon from the northwest are good indicators of species. And, so I think that we do provide a good service.

Mr. GILCHREST. Thank you. With your indulgence, Mr. Chairman, there's two more.

Mr. Robertson?

Mr. ROBERTSON. Thank you. Just briefly, I'd like to make a point about salmon as a life long northwesterner.

In the northwest, salmon is literally a religious issue. For example, salmon is essential to tribal rights and to the religion of the tribes. In all of the years that I've been involved in the fish issue, nobody in the northwest doesn't want to bring back salmon as quickly and effectively as possible because of jobs, because of religious objectives and because salmon is part of a way of life.

No one wants to see salmon disappear.

We have done many, many direct things with our fish program beyond flows and spill regimes that we talked about earlier. These include predator control programs, law enforcement programs, hatchery development programs, and research programs. We worked together with NMFS to save the sockeye of Red Fish Lake early before it went extinct.

We have wildlife improvement programs throughout the region as a result of what we have funded. And, at Bonneville we are proud to have accomplished these things.

I just want to re-stress that the funding for this comes from northwest ratepayers, through Bonneville. It doesn't come from U.S. taxpayers.

We think there are specific breakthrough accomplishments that have occurred as a result of our actions that have been excellent for the future of the ecology of the northwest.

Mr. GILCHREST. Thank you very much. Ms. Beattie.

Ms. BEATTIE. Congressman, I've heard people mention benefits that are not up to me to judge, because whether they are locally valued or not is not up to me. But, benefits such as open space.

I will say, however, that economic activity that is driving species of plants and wildlife over the brink of extinction is probably, by definition, unsustainable. So, perhaps the conservation of species offers a foundation for a sustainable economy and a sustainable future for people.

Mr. GILCHREST. Thank you.

Ms. BEATTIE. And, finally, I would say that it allows local people not to have to look at their kids some day 20 years from now and say, "There used to be something here called a salmon. There used to be something here called a grizzly bear, but it was too much trouble and too much money for us to save."

Mr. GILCHREST. Thank you all very much. Thank you, Mr. Chairman.

Mr. POMBO. Mr. Dooley.

Mr. DOOLEY. Thank you, Mr. Chairman. And, just in prefacing my questions, I would say I think it's unfortunate that we are spending so much time worrying about the accuracies of some statements of either the Secretary or anyone else.

Obviously, any member of Congress spends a great deal of time trying to put the best spin on a lot of issues and messages that we are trying to send out there. And, I think the issue at hand here is really what are the policy changes we need to be considering.

I think that there is no question we are spending a lot of money within the Administration on the implementation of ESA. I guess what I'm also concerned with, though, is that there is an associated cost that is also being incurred by other public agencies and private individuals that is directly related to the implementation.

I know that the Administration was concerned about one of the aspects of the Pombo/Young bill in terms of compensation to private property owners as it would relate to additional costs which could not be absorbed by the agency. What I would be more interested in, though, is that there's other tangible and hard costs that other agencies, non-Federal Government, are engaged in in terms of additional consultant fees mitigation fees that are being requested.

Is there any effort on the part of Fish and Wildlife, Ms. Beattie, to try to account for any of these costs that are associated with ESA implementation by Fish and Wildlife?

Ms. BEATTIE. I'm sorry, Congressman. Are you talking about those incurred by people who would not be here today with a total?

In other words——

Mr. DOOLEY. Well, we have some people that are going to be testifying in the next hearing, someone with the Kern County Water Agency.

Ms. BEATTIE. OK.

Mr. DOOLEY. And, you know, a case in point would be when they are being asked by Fish and Wildlife for what are ongoing operations and maintenance that there might be the occurrence of an endangered species, that they are being asked by Fish and Wildlife to have an offset of maybe a 20 to one in terms of acres.

Does the Fish and Wildlife Service keep any type of accounting on what the request and what has been agreed to by other agencies, both public and private, non-Federal, in implementation of the ESA?

Ms. BEATTIE. We keep an accounting for other Federal agencies and down to the state level but not below. I can tell you that one of our proposals in the 10 point plan is to involve all impacted parties in finding the least cost means to recovery.

So, that is one of our proposals. That may, in fact, give us an opportunity to keep a better accounting below the state level.

But, that is one of our newly instituted policies. And, it would help us to that end.

Mr. DOOLEY. And, I think that's something that I think we call be receptive to, because one of the things I think we are all getting at here is how can we ensure that we are going to maximize the expenditures, both by the public and the private sector, in terms of getting the greatest results, which goes also I think to the cost benefit as well as some way to quantify the benefits.

Major General, I just had another instance in my district which showed a little bit of difficulty in maintaining some consistency within administrative agencies in terms where the Army Corps is in charge with managing the flood flows and flood storage within Lake Isabella in Kern County, which we had a problem earlier this year because of the habitation of a southwest willow fly catcher within the basin, the lake basin, itself actually in willow trees that were planted, as directed by the Fish and Wildlife.

We had a situation there when the Army Corps filed their plan for the normal operations of the reservoir, which would be consistent with the flood control obligations, is that it triggered basically a consultation which ran the risk of not allowing that reservoir to be filled for the flood control. Obviously, it could impose jeopardy downstream.

You know, you have projects throughout the United States. How often is this a situation which you are finding yourself in?

And, are you finding yourself in a situation where you are having more difficulty resolving these issues now than you were five years ago? I mean, your budget obviously is showing you are spending a lot of money doing something a lot more than you did five years ago.

Maj.Gen. GENEGA. Well, sir, I think it's fair to say that we are spending more energy on those kinds of things today. But, I would think that that—I would say that that is a result of the general heightening and the awareness of the American people to those kinds of issues.

And, certainly we are spending more effort than five years before that or five or 20 before that. But, I think we are able to resolve those problems.

We are able to achieve some balance, albeit a different balance than what we had five years ago or 10 years ago. But, we have been able to resolve them in most cases.

Mr. DOOLEY. I guess this gets back to the whole issue, though, in terms of what I think is critical in the allocation of the costs of providing for the societal benefit of the protection of species. And, how do we ensure it?

I mean, it's obviously general fund dollars when it's administrative costs. But, sometimes we are asking private property owners, as well as some entities which are representing a very special or

smaller constituency, to bear the primary financial burden in providing for the preservation of species.

And, I think that's what some of us are concerned with in terms of reform. How do we share this burden?

And, I guess that is what brings me to my final question for you, Ms. Beattie, is that I have some concerns with what was the administrative proposal that would, in fact, exempt landowners of less than five acres?

Once again, while you can make some arguments in terms of the aggregation of a land mass that could allow for maybe an effective mitigation, restoration or recovery, but at the same time you are once again limiting the number of people and those property owners who are going to be making a direct contribution to the recovery of a species. And, in fact, you are then once again allocating the burden of recovery to an ever smaller group of individuals.

And, I guess, I just question how is the administration—when on the one hand you believe that economics shouldn't necessarily be a factor yet you introduce a policy such as limiting blanket the consideration of any landowner of less than five acres?

Ms. BEATTIE. Let me start, Congressman, with your first point, which was how to share the burden. We have a number of proposals, a number of ideas, we would like to explore, which are really ideas for giving landowners incentives, which is different than compensation. But, it's certainly very workable.

The instinct to take care of wildlife is already usually in landowners. If you can give them an incentive to go with it, then that's probably the least cost way to do it.

We have a number of ideas on that one. On the—and I would be happy to come over and tell you what we've thought about with that.

The question about the five acre exemption, we felt, first of all, compelled to go with something like that, because we discovered in the law that—and this only has to do with threatened species. And, we discovered in the law when a species is threatened, there is immediately a presumption that destruction of habitat will be a violation.

That presumption—and that is not—the law does not require that. The presumption can be that what you are doing is OK unless we tell you.

And, so we felt compelled to give landowners that kind of a—since the law was not behind us on that and it had just been assumed over the years, we felt compelled to give some landowners an exemption. And, there had to be a breakpoint.

How do you define, you know, who does and who doesn't? So, there had to be a breakpoint.

And, that seemed like a good one. We looked at percentages of ownerships below and above certain thresholds.

In terms of then putting the burden on an ever fewer number of landowners, we are then at least talking about larger landowners, which spreads it a little thinner. And, again, if we can come back to looking at incentives for landowners, maybe we can cure both problems.

Mr. POMBO. Ms. Cubin.

Ms. CUBIN. Thank you, Mr. Chairman. Dealing with this Endangered Species Act, as well as the Young/Pombo version of the Endangered Species Act, reminds me of four blind people who were asked to identify an elephant. And, two of them are on the front of the elephant and two of them are on the back and everybody is telling the truth as they see it but certainly not getting the same result.

And, I think that goes a long way in explaining why there are such vast differences in how people feel about the Endangered Species Act and whether or not it is productive and whether or not it's worth the money that has been spent on it.

I think you all realize that the particular problem that Wyoming has in dealing with many Federal programs, whether it's with—not programs, agencies, whether it's the Park Service, the Forest Service or Fish and Wildlife, whatever, has to do with the ownership pattern of the land in Wyoming. It's—it originally was checkerboard with every other section being owned by the Federal Government.

This was after the Homestead Act expired with every other section being owned by the Federal Government. And, the in between ones were private property.

So, that is what—and, of course, that has—you know, it has changed a little bit through the years. But, there's still Federal property that is totally isolated by private property and vice-versa.

So, that, I think, goes a long way in describing the problems that Wyoming people have in dealing with the Federal agencies. And, my request, to you all—and I know that you do it as much as you can, but to please take those special circumstances into consideration when dealing with problems that constituencies run into, whether it's with the Endangered Species Act or whether it's with forest plans or whatever, because it is a real, real difficult situation for everyone.

I don't have, but I would love to have, a copy of the 10 point plan that you talked about that you developed last year for improving administration. I would like to have that very much.

I actually have way more questions than I have time. I want to ask a little bit about the grizzly bear.

What is the population goal for the grizzly bear? Do you know right off?

Ms. BEATTIE. In terms of numbers?

Ms. CUBIN. Yes.

Ms. BEATTIE. I can't tell you, Congressman. But, I will be happy to provide that. I knew all those once.

The—one goal is to have three populations at a certain size. And, the reason we want three populations is because—I believe it's three, is because that gives us redundancy in the system so if you lose one to disease or predation or something.

Ms. CUBIN. Yes.

Ms. BEATTIE. So, that is our goal. And, we are very close with two at the moment.

Ms. CUBIN. Do you know if the same plan—do you plan to do the same thing with the wolf?

Ms. BEATTIE. Yes. The plan is similar, in that it calls for a certain number of packs in each of a few areas. And, we will then con-

sider the wolf recovered. That's considered a self-sustaining number.

Ms. CUBIN. So, you don't consider the grizzly recovered at this point?

Ms. BEATTIE. It's getting very close but not quite, in our estimation.

Ms. CUBIN. How many times has the—I believe, and I might be wrong on the numbers, but I believe that in the beginning, the plan for recovering the grizzly said when 250 grizzlies are alive and well. And, that happened.

And, then it went up to 350. And, then it went up to 500. And, it has been increased many, many times.

Why was that? I mean, because what it seems to me is that the plan changed over time rather than—or the administration changed over time——

Ms. BEATTIE. Or the finish line moved.

Ms. CUBIN. I don't know what caused it. What caused that?

Ms. BEATTIE. There are some technical reasons. It had to do with learning new things about the grizzly bear.

And, I would be happy to provide those for you. I can't tell you off the top of my head, but they were biological sorts of—biological information coming from research or new understanding that made us think again.

The grizzly bear is obviously a reclusive species that's hard to study and not as reclusive as I know some people wished, but——

Ms. CUBIN. Yes. In fact, people up there on the North Fork or the Park's Fork don't let their kids walk to school, because there are so many grizzlies in the Coyote area. People who live out in the foothills, we call them, but back here in the east they would call them mountains.

But, the foothills in Park County, you really are not safe to be back in there, because in that area there are so many grizzlies. And, I mean, I do know this to be true, because I've been up there myself.

But, anyway—so I would really appreciate knowing why the goal changed——

Ms. BEATTIE. I would be happy to do that.

Ms. CUBIN. [continuing]—through the years. And, also related to the wolf—and I'm sure that you all are aware that I was opposed to the introduction of the wolf. They are there.

So, it certainly is a waste at this point. I mean, I don't want to see a lot more money poured into the reintroduction of the wolf, but certainly I hope it works now since they are there and we've spent the money anyway.

So, I would like the same sort of analysis on the wolf. What changes do you foresee or—I mean, that's the problem, is that there is no certainty for the people that live on that land.

And, so—and the distrust, not just for Federal agencies but for the Congress, distrust for the President, distrust for government, because it seems we change rules after the game starts. And, then my constituents say, "Hey, this isn't fair." And, it's hard to justify that it is.

So——

Ms. BEATTIE. I would be happy to get you the information on the grizzly bear and reassure you that it was on the basis—if things change, it was on the basis of scientific evidence, not on the basis of——

Ms. CUBIN. Politics.

Ms. BEATTIE. [continuing]—politics. Right.

Ms. CUBIN. I hope.

Ms. BEATTIE. On the wolf, we don't foresee any changes. We also agree that we hope we never have to do another reintroduction, that the last one will bring the species up and off the endangered species list so it can go back to the states to manage and save us a great deal of effort.

But, we don't, at this moment, foresee any changes in that program.

Ms. CUBIN. As was expected, the population of the coyote is down because of the predation of the wolf. And, I think that's probably what all biologists planned.

And, certainly I'm not sad to see that happen. But, you know, it is worrisome that the larger animals now will be--I'm talking domestic animals—more threatened by the wolf than they were by the coyote.

And, that has always been a problem that I wanted to avoid and I would like to resolve, you know, when those things occur. I don't think that—I think that preserving a species is good for the public. And, I would say it is.

Then—and I don't know of anyone that disagrees with that. I mean, I don't think anybody, on whatever side you are on, wants to see species vanish off of the face of the earth.

But, if it is for the public good, then shouldn't the whole public pay for it? I mean, shouldn't it be the responsibility of everyone instead of just those people who happen to own private land right next to federally owned land?

So, you know, it's kind of a rhetorical question. Just a couple of more, Mr. Chairman, and then I will be quiet.

Sometimes—one more minute? OK. Sometimes the ESA regulations force other government agencies to have to take a certain action based on the ESA.

When there is a conflict, when you disagree, who should win? And, is there a process for deciding?

I mean, I assume right now that you have the ultimate say because the ESA is the biggest law I know of.

Ms. BEATTIE. In answer to your first question, we should win.

[Laughter.]

Ms. CUBIN. Right, always.

Ms. BEATTIE. In fact, that's not in our interest, to win.

Ms. CUBIN. All right.

Ms. BEATTIE. Our interest is to have a decision made that is of mutual benefit and protects our mutual interests, which they are.

We have a very detailed process that is called consultation, which is also a line item under the ESA, a very detailed process, now detailed in a handbook of how to make those consultations, how to resolve conflicts. And, I hope my colleagues will agree that nine times out of 10 we do.

Ms. CUBIN. So, you—if you couldn't, then should—do you think that it would, in any way, be good to have a third party arbitrate that disagreement between two different agencies?

Ms. BEATTIE. I'm sure there are a number of means we could use where there is a deadlocked conflict, which is a real rarity.

Ms. CUBIN. The reason I'm talking about this is because unplanned money spent out of, say, the Department of Agriculture or Forest Service or something like that, that Fish and Wildlife mandates that, you know, a big portion of money come out of somebody else's budget, it surely would be easier keeping track of how much we do spend on endangered species or preservation if we could do that.

So, I will be thinking along those lines, too. I don't have any further questions.

Well, I do, but you won't let me ask them. Thanks.

Mr. POMBO. Ms. Chenoweth.

Ms. CHENOWETH. Thank you, Mr. Chairman. Ms. Beattie, I wanted to say that I'm very glad to see you back. You are a courageous woman and leader.

Ms. BEATTIE. Thank you.

Ms. CHENOWETH. And, you are a fine example for many women in leadership. It's good to have you back.

Ms. BEATTIE. Thank you.

Ms. CHENOWETH. I wanted to ask the General a couple of questions. General Genega, in 1991, the Corps of Engineers spent about $7.5 million directly on the Endangered Species Act. And, in 1995, you spent $94.8 million on the Endangered Species Act. And, that's a 1,300 percent increase in your expenditures.

How many species have been directly recovered as a result of the Corps of Engineers' activities?

Maj.Gen. GENEGA. I think it's fair to say that I could not take credit for any species recovered as a result of those expenditures. But, we participate with the other agencies, some or all of the other agencies, at the table here in recovery efforts for particular species.

We—in preparation for this, we don't account for the dollars in that particular way. We don't account for them by recovery plan and our dollars toward that.

We are embarked on a fair amount of research right now trying to go back a couple of years and see if we can reconstruct that. But, I think it would not be fair for me to take credit for any recovery plan by the actions of the Corps independent of the others.

Ms. CHENOWETH. Do you still regard your first priority as being that of navigation in commerce—hydro power and flood control, as you mentioned earlier?

Maj.Gen. GENEGA. Yes, ma'am.

Ms. CHENOWETH. Where do those priorities line out in terms of your management of the Corps?

Maj.Gen GENEGA. Well, I would say those are our priorities. Those are the Corps' missions.

Now, we do those in a different fashion today than we have in the past. And, that's in response to various laws like the Clean Water Act, like the Endangered Species Act and the Safe Drinking Water Act and on and on, though we do them in a slightly different fashion.

But, I come to work everyday committed to, as do some 27,000 other employees on the Civil Works side of the Army Corps of Engineers, delivering our responsibilities under navigation and flood control and hydro power.

Ms. CHENOWETH. General, in 1994, the Corps was appropriated an overall amount of $208 million to carry out its duties. And, in that year, roughly $52 million was spent on the Endangered Species Act.

In 1995, however, the Corps was appropriated $192 million for its overall mission. And, yet, it spent $95 million on the Endangered Species Act.

I don't understand the difference between 1994 and 1995, in that it appears that the priorities may have changed to the degree that in 1994 25 percent of your expenditures went toward ESA and in 1995 it appeared that nearly 50 percent or over 50 percent went toward the Endangered Species Act. Now, that concerns me, because there are other priorities, too, such as navigation, hydro power and flood control.

And, how many of these cuts were directed at the other priorities? It had to be—there had to be other priorities that didn't have the attention that ESA had.

Maj.Gen. GENEGA. Yes, ma'am. I will have to get with you, I suspect, afterwards to see the source of those figures that you gave.

My appropriation from the Congress under the Energy and Water Act for the entire Civil Works for 1995 was about $3.4 billion. And, you mentioned a number of—so, the $95 million expenditure is against that $3.4 billion as opposed to the number that you used.

I'm not sure of the source of those numbers.

Ms. CHENOWETH. Well, these were duties in recreation. These were appropriations for recreation.

Maj.Gen. GENEGA. I see.

[See letter of April 29, 1996, at end of hearing.]

Ms. CHENOWETH. And, I also wanted to ask Mr. Schmitten, in 1991 the National Marine Fisheries Service spent $3.6 million on the ESA. In 1995, there was $21 million that we have—these are the figures we have gotten in our office.

And, that's an increase of over 700 percent. What—how many species were recovered as a result of that 700 percent increase?

Mr. SCHMITTEN. Let me first explain where the cost came from. In 1990, we received the first ever Pacific Northwest salmon listing petition. That has increased to probably over two dozen petitions since then.

The first final listing of salmon species in the Pacific Northwest occured in 1991. At that point, our cost did significantly increase because we went to managing the species.

As far as recovery, we have not lost any species.

Nothing has gone extinct once we have taken over. And, we have implemented actions in the recovery plans for the species. So, we have not lost anything for the public.

I'm sorry, I need to also answer your question. Recovery is measured by the recovery team in the life cycles.

And, it's estimated that it will take 12 years for a full recovery.

Ms. CHENOWETH. Mr. Schmitten, we have not had one sockeye salmon return to Red Fish Lake. And, yet we have built huge amounts of paper.

We, in Idaho, are becoming increasingly impatient with the National Marine Fisheries Service. Whereas, we all would like to see the salmon returned to our lakes and rivers and streams, the mission is not being accomplished and yet the taxpayers are putting out enormous amounts of money.

We are becoming increasingly impatient about that. I—Mr. Chairman, I would ask for just two more minutes and then I have to leave.

Mr. Schmitten, when you were in front of our Committee before and then when we had one of your representatives, Mr. Bellmore, in front of our Committee, I asked about a rancher who isn't even adjacent to a stream or a river where salmon had historically been present. His water rights were taken, as far as his ability to use his water rights, the Yantash Ditch project.

I have asked and asked and asked. You have assured me a response on this. And, it has not been forthcoming.

Mr. Bellmore referred me a response on this. It is important to Idaho to know where your stand is on appropriated water rights.

And, so I would again urge, in front of this Committee, that we begin to work together and that I would like to see the response that has been promised by you to this Committee, not just on that issue, I mean that particular case, but because your agency's activities have interfered with appropriated water rights. And, then——

Mr. SCHMITTEN. May I answer that? I think I have a good answer for you.

Ms. CHENOWETH. Sure. Yes. I have one more question to Mr. Robertson, but——

Mr. SCHMITTEN. OK. I reviewed the Yantash Ditch because we've talked about it. And, each issue that you and I have discussed, I think we have worked to a resolution that we are both happy with.

Ms. CHENOWETH. That's not the case. And, I know you are back here in Washington, D.C.

But, we could spend all of my time and yours, too, talking about that one case. But, I would like to work with you in private on it.

Mr. SCHMITTEN. We reached an agreement with the landowner in the Yantash Ditch. The flows that he requested are the flows that we will have in our consultation.

I think it's something that all the parties are pleased with. And, I wanted to announce that to you today.

Ms. CHENOWETH. Thank you. There still is a problem with the acceptance of the Weir, so we are not through this problem yet.

But, Mr. Robertson, I did have a quick statement to you. And, then I wanted to ask you a question.

You mentioned the religious issue that the tribes have expressed. And, whereas, I believe all people in America should be free to worship as they please, the First Amendment of the Constitution, you know, guards the government against and prevents the government from any establishment of religion, a government religion.

And, when we see government agency heads talking about this, we are getting perilously close to the establishment of a religion

and tax dollars going to further the programs of people who want to engage in an object of worship. Conservation is one thing.

And, object of worship, we are getting perilously close to danger. And, when children cannot have—or students cannot have prayers in school or they may not even have their baccalaureate service where there is no administrative activity, they may not have their own prayers at baccalaureate, then, I think that we need to guard against that. And, I have spoken out on that issue. I will continue to, because I don't think tax dollars should go to support a religious practice.

You have been around for quite awhile. You have a good reputation.

But, I remember when the Northwest Power Act came into being. Did you ever envision that the Act itself would be so tipped toward the mitigation enhancement of fish and wildlife and tipped away from your agency being able to provide a constant and low cost source of power to the users up in the northwest?

Mr. ROBERTSON. Well, Mrs. Chenoweth, I would just say a couple of quick things. One is that I certainly didn't mean to bring government closer to involving itself in the religious question in response to your first point.

Ms. CHENOWETH. Thank you.

Mr. ROBERTSON. I was trying to make a point about how emotionally important salmon are to the northwest generally and, of course, specifically to the ceremony of some religions. But, that was really the only point.

The point you make about the Act is that Bonneville has to balance its purposes, just like the Corps has balances in its mission, and others do, as well. And, fundamentally, the Act was driven by what was perceived to be an energy shortage at the time, and to assure low cost electric energy for the northwest.

But, it did introduce the issue of mitigation directly for damage done to fish and wildlife by the hydroelectric system.

Now, as to your point, the energy market has changed radically since 1980. It has almost turned on its head. Now low cost energy is the course of the day and Bonneville is in competition to meet that market.

And, that was not true in 1980. So, to deliver our mission, we have to balance all of our costs, including fish and wildlife.

And, to sum up quickly, because I know your time is short, I would honestly say the amount of fish and wildlife we are paying for right now is larger than I would have imagined. I think it's larger than most people would have imagined in 1980. On the other hand, given the arrangement we put together last year with the Administration for the 10 year stability of our fish and wildlife costs, we think we can manage our mission, sell low cost power to the northwest and continue to meet the obligations for fish and wildlife and other public purposes.

And, a number of your constituents in Idaho, I hope, will sign up for that power shortly.

Ms. CHENOWETH. Thank you, Mr. Robertson.

Mr. POMBO. Mr. Hastings.

Mr. HASTINGS. Thank you, Mr. Chairman. Mr. Robertson, I want to clarify a few of the statements that you made in response to

questions from Mr. Miller and Mr. DeFazio so I can understand this also.

You have—you say there is a cost of roughly $435 million in costs. Part of it is direct and part of it is from foregone lost of revenues.

And, you conceded, I think if I heard you correctly, to Mr. DeFazio that part of the foregone revenues is, in part, because of the Northwest Power Planning Council and in part to ESA. You haven't broken that out apparently?

Mr. ROBERTSON. We have. There is—of the $435, there are two big categories.

Mr. HASTINGS. Right. That's——

Mr. ROBERTSON. One is direct costs, which are $252 and then the $183, both foregone revenues and——

Mr. HASTINGS. I'm talking about that $183.

Mr. ROBERTSON. Right.

Mr. HASTINGS. And, you conceded to Mr. DeFazio that part of that could be attributed to the——

Mr. ROBERTSON. Yes.

Mr. HASTINGS. [continuing]—Northwest Power and the ESA. Have you broken out—because of how the Northwest Power Planning Act is written and ESA, have you broken that out, the difference?

Mr. ROBERTSON. It's difficult to do that breakout because of the integration of the hydro system and the overlap of those two responsibilities. We did start, I think, responding to the biological opinion and changing river operations in 1992 in response to the listings that were mentioned earlier by Mr. Schmitten.

And, that did begin to change the hydro system. And, the Northwest Power Planning Council came along with that and made its recommendations as well.

Under the Northwest Power Planning Act, we are to act consistent with the Council's recommendations. And, the standard under the Endangered Species Act is, I think, legally somewhat higher.

[The following was received in reference to the above:]

BONNEVILLE POWER ADMINISTRATION'S EXPECTED ANNUAL FISH AND WILDLIFE COSTS TO THE FEDERAL COLUMBIA RIVER POWER SYSTEM

Bonneville is able to estimate the amount of energy lost at the mid-Columbia projects as a result of operations for fish and wildlife with computer models. However, the ability to identify foregone revenues separately from additional power purchases (the two components of total net costs) is dependent upon knowledge of the affected utility's energy loads relative to its energy resources. Thus Bonneville can make the differentiation for itself, but is not able to do so for other utilities. This task can best be accomplished by the affected utility itself. At the mid-Columbia projects there are more than ten utilities affected.

Mr. HASTINGS. OK. Does that figure include the loss of revenue that the Big Columbia PODs would have?

Mr. ROBERTSON. No, it does not.

Mr. HASTINGS. Any estimate of how much that would be?

Mr. ROBERTSON. I can try to get that for the record. I don't have one in front of me.

Mr. HASTINGS. Just—I know. Get it for the record. But, for the record here, make a rough guess and we can amend it later on.

Roughly, what would you think?

Mr. ROBERTSON. Of the hydro portion alone?

Mr. HASTINGS. Yes, hydro only.

Mr. ROBERTSON. Oh, boy.

Mr. HASTINGS. Ten percent, 15 percent?

Mr. ROBERTSON. Maybe that, 15 percent. But, I wouldn't want to put it in the record.

Mr. HASTINGS. OK. Let's just be on the low side. Fifteen percent more.

So, now we are over $200 million in foregone revenues. There's no caps on the Big Columbia PODs, so they don't enjoy what you have.

Now, the Chairman has been getting very antsy when we go over five minutes. And, I don't want to irritate him.

Now, the $250 million direct cost, how much—that is different now. That is direct cost.

How much of that—and Mr. Miller has kind of gone into this a bit and then his time ran out and he didn't get to pursue it. And, you were going to answer that, I thought.

How much of the $250 million direct cost is attributable just to ESA? And, how much is a mix between that and Northwest Power Planning Council?

And, how much is Northwest Power Planning Council? How do you break that down?

Mr. ROBERTSON. The way we broke that out for the Committee was that $57 million of direct program expense and approximately $13 million in capital were related to the Endangered Species Act, in addition to the $190 or so million related to foregone revenues and power purchases.

Mr. HASTINGS. So, you are looking at roughly—my figure then is roughly 70—about 25 percent roughly, a little bit more than 25 percent, of the direct cost is attributed to ESA?

Mr. ROBERTSON. That's what we've done for the Committee.

Mr. HASTINGS. Now, does this figure include the Big Columbia PODs?

Mr. ROBERTSON. No.

Mr. HASTINGS. So, the Big Columbia PODs, then, is another cost. And, if 15 percent—I don't want to hold you to the 15 percent.

But, if it's true on foregone revenues, that should be probably pretty close to what direct costs would be. I know, for example, that the Big Columbia PODs, everyone of them, are doing a fish bypass system, which is because they think it's good policy.

I see the Corps of Engineers is just starting to do that on one of the dams, on the Snake River. I don't know if you are doing it on other dams.

But, these are the type of costs that are direct costs that are attributed to ESA. Is that a fair statement?

Mr. ROBERTSON. If you are talking—I would like for Mid-Columbia PUDs to speak for themselves, but they have made changes. In fact, in some cases, they have made changes that we are trying to replicate on the main stem, because we think they may be highly beneficial to fish and bypass operations.

And, they have experienced those costs under their licenses.

Mr. HASTINGS. OK. General?

Maj.Gen. GENEGA. I believe that's an accurate statement, sir.

Mr. HASTINGS. OK. How many dams have you tried these fish bypass systems on?

Maj.Gen. GENEGA. Sir, we have fish bypass systems on probably close to half our dams across the——

Mr. HASTINGS. I'm talking about the surface collectors, which is a newer technology.

Maj.Gen. GENEGA. Yes, sir. We are just getting into the surface technology business literally within the last year or year and a half.

Mr. HASTINGS. It's interesting that the Big Columbia PODs on the five dams they have, they have three surface collectors that I am aware of right off the bat. OK.

One last thing. I know this is—because of these costs, these are spread out over the ratepayers.

Do you have—have you broken this down to what it costs, say, an average resident, the irrigators, the DSIs, what impact that has had of these costs you are talking about, the full $435 million?

Mr. ROBERTSON. The $435 million represents, in simple terms, about 20–22 cents on every dollar generated by sales of power go toward fish and wildlife mitigation. So, basically, if you are buying Bonneville power, 22 cents of the power dollar you pay is going for fish and wildlife mitigation.

Mr. HASTINGS. And, finally, Mr. Chairman, I will just make one—the fact that I brought up the Big Columbia PODs and Mr. Robertson obviously couldn't accurately estimate what their costs are, that ought to be in the record. And, I would like to have unanimous consent to add that to the record in addition to this testimony so that we can put it in there to reflect the true costs there on the Columbia River.

Mr. POMBO. Without objection.

Mr. MILLER. Mr. Chairman, if I might just have a couple of seconds here to make a statement.

Mr. POMBO. You are given two seconds.

Mr. MILLER. Your generosity overwhelms me.

[Laughter.]

Mr. MILLER. I think this has been a very important panel, because my impression is that we are looking at the Department of Defense, a subsection here of the Corps of Engineers, the Forest Service; and, not represented at the table, but the Bureau of Reclamation; and, the Bonneville Power Administration, all of whom got their charters a long time ago when the world was very different. And, what they are now are multi-purpose agencies.

Secretary Goodman said that, in fact, the mission is much more encompassing now than maybe we traditionally thought of it. Those of us who are struggling with base closures and cleanup, as you are within your budget, recognize the horrible decisions that were made many, many years ago when we were ignorant about the ramifications of those decisions and the costs of cleaning those up.

More and more of the military construction budget is going back to clean those up, as opposed to providing housing and services for our personnel.

You had one charge at the outset of Bonneville Power—regulate that river, develop the power and try to develop some navigation.

The Central Valley Project, up until a few years ago, was really not a multi-purpose agency. It was water delivery to one constituency, the State Water Project in California.

These are not sins. This is the way we looked at the world in the 50's and the 60's.

The Corps of Engineers, I came to office arguing with you. A year and a half ago or two years ago, on a bipartisan basis with business, labor and environmentalists, we came up with a dredging plan for San Francisco Bay, because we all do business different today than we did before.

And, all of these agencies were involved. It used to be about how many board feet you could get to market—the only question asked.

But, the fact of the matter is, all of those single-purpose missions would be unacceptable today if you never had the Endangered Species Act. The people in the northwest are not going to stand for the eradication of their forests.

We are not going to stand for the eradication of the delta environment. And, it goes on and on and on.

And, I think the purpose here is we can argue over whether or not the Secretary of the Interior was precise. But, the mission is somewhat more imprecise.

And, the mission is a lot about learning as we go along. And, budgets do jump as listings take place and we find ways to avoid them—habitat conservation areas and other arrangements such as that.

And, I think this has been very instructive, because whether or not we are going to use the Secretary's statement to try to impeach the Endangered Species Act or get rid of the Endangered Species Act or whatever the options are, the fact of the matter is that what we know is that the American public supports it overwhelmingly because they've seen an improvement and a diversity brought to their communities that maybe they, in fact, weren't even aware of before.

It's certainly reflected in the northwest and certainly reflected in California where we now have many competing interests and a lot more people not only that are entitled to, but you can't keep them from the table where these decisions are being made. Years ago, hell, on this Committee you didn't have anybody west of the Mississippi.

And, the decisions were made in the 17 western states, as they used to start every speech in this Committee. Today, Mr. Markey is from Boston. And, it goes right on down the road, because other people want say in how we develop and how we administer the public lands and resources.

And, so, you know, you are caught in a transition. It has been a long transition since endangered species, since the environmental movement, since the Earth Day at the beginning of the 70's.

But, the fact is, that's where the Nation is going. And, all of your agencies have recognized this.

Now, we can beat up on you until the cows come home. But, the fact of the matter is that that's where the Nation is going.

It is about the protection and the enhancement of the resources of this country. And, that doesn't preclude the utilization.

And, that doesn't preclude the commercial exploitation. And, I mean exploitation in the sense of activity, not in derogatory terms.

That can all be done. But, it's done when you put together forest plans or you put together dredging plans and you no longer just say, "How big a ship are we bringing in here." You have got to know a lot of other things and take a lot of other views from city councils and boards of supervisors and water agencies and all the rest of them.

And, I think that's what this panel has illustrated. We can talk about costs but, you know, in California we spent almost more than $1.5 billion just building the San Luis unit. They have paid back $60 million.

Nobody asked what was the cost. But, now when all of a sudden we want to talk about some multi uses and protecting the environment and doing some other things, we are absorbed with costs.

Nobody has asked those navigators on the river how much they could pay in fees. We know that's all subsidized, whether it's on the Columbia or the Mississippi or the Hudson or anywhere else.

And, nobody is asking people to pay back all that money for those dredgings. But, if we dredge, we make a decision because somebody wants to protect the environment and all of a sudden we become very cost conscious.

And, I think the realism of the administration of your agencies is that it comes—you know, the incoming is coming from everywhere. You get it from everywhere when you go to make decisions.

That's a kind of democracy. And, there is a cost associated with that.

And, there is a whole array of values out there about the environment or about economic activity or what have. And, those today have to be taken into consideration.

You didn't have to take them into consideration when I first came to this Congress. You didn't have to take them into consideration when you were building the Central Valley Project or the Central Utah Project.

But, you know when we changed the Central Utah Project? Because the people in Utah overwhelmingly voted to change it, not because the Congress voted but the people in Utah changed.

Why are we changing the project in Arizona? Because the old way went bankrupt and the state has changed. And, tourism looks a lot more attractive and retirement developments.

What's going on in Nevada? Ten percent of the water generates 90 percent of the jobs. Ninety percent of the water generates 10 percent of the jobs. That equation won't hold up in a modern society.

So, these are changes. And, the environment gets taken into consideration.

I want to thank you very much for your participation, because I think you gave us a real looking glass into the kinds of decisions and the kinds of constituencies that we would demand you respond to, because there are local constituents. They wear a lot of different hats, but they come from the areas that we represent.

And, I want to thank you very much for your participation on this panel. Thank you, Mr. Chairman, for the extra time.

Mr. POMBO. You are welcome. Well, I, too, want to thank you for your testimony and for your answering the questions that were presented to you in the best that you were able to.

And, I think George is right about one thing. And, so maybe this is a looking glass. Maybe this does open people's eyes a little bit.

You know, the statement that the Secretary made referred to—by, I believe what Ms. Beattie said, referred to one small part of Fish and Wildlife's budget. And, that was what he was saying was 16 cents per person.

But, when you look into the looking glass, you see that that is just one small part of your budget, which is one small part of the Interior budget, which is one very small part of the Federal budget, which reflected by all of you sitting there adds up to a considerable amount of money and a considerable amount of bureaucracy, a considerable amount of people that are involved.

When I have people in my district that want to plant grapes, they have to go to the Army Corps of Engineers to get permission to plant grapes on their property, who has to go through Fish and Wildlife to find out whether or not there is endangered species on that property. And, the Bureau of Reclamation is involved because of water issues that come in.

And, pretty soon, everybody that is sitting at that table, with the exception of Bonneville, who would love to sell power down my way, but with the exception of them, everybody there is involved one way or another. And, you know, when you get into an issue like endangered species, it involves all of the Federal agencies and it involves money from all of the Federal agencies.

And, what you bring to us is a very small part of the overall cost. The overall cost of the Endangered Species Act is many, many times the cost to the taxpayer, the cost that you spend through your agencies.

Mr. Dooley, in his questions and in his opening statement, pointed out that the cost to local government and private property owners is many times what even you spend. So, you know, there is a lot involved with all of this.

I would like to ask Ms. Beattie, if I may, ask you a question. We started with a list of candidate species of over 4,000 species. And, I don't have this in front of me right now, so I'm paraphrasing it.

But, I recently read a press release or a statement that came out of, I believe, your agency that said that after intensive research and investigation, you had narrowed that down to 243 species that were going to be put on the list or that were proposed to put on the list. Did you peer review all 4,000 some odd species to determine whether or not the science you had used was accurate?

Ms. BEATTIE. Mr. Chairman, we kept two tiers, basically two file cabinets, of candidate species. People write into us and say—you know, people, usually scientists, write into us and say, "We think such and such is declining."

If we can find some information, some backup to that, that indicates this is worth looking at from a scientific point of view, good scientific information, we will—or, we don't—let's start with we don't, we used to call it a Candidate 2. You know, we basically saved the letter.

And, we had a Level 2, which was the other file cabinet. And, we would put it in there and see if it—if something showed up in the future and maybe we would have some information that we kept on file.

We decided that this probably wasn't the most efficient system, keeping these two file cabinets and what we really—with our scarce resources, we really need to be focusing on that Number 1 drawer, making candidate conservation agreements with people and try to keep those off the list. Those are the ones with a good foundation of scientific evidence showing that the allegations about declining populations are true.

Mr. POMBO. So, are those—the ones in——

Ms. BEATTIE. We got rid of——

Mr. POMBO. [continuing]—Category 1, were those peer reviewed?

Ms. BEATTIE. Those will be peer reviewed if they are listed. We do ask scientists about them, yes.

We ask for scientific information on whether people have found, whether researchers have found——

Mr. POMBO. So, people have submitted scientific evidence to Fish and Wildlife and——

Ms. BEATTIE. For Candidate 1s so that——

Mr. POMBO. For Candidate 1.

Ms. BEATTIE. Right. Basically, what——

Mr. POMBO. Has anybody other than the scientist who prepared that outside of Fish and Wildlife looked at and determined whether or not it was accurate?

Ms. BEATTIE. On Candidate 1?

Mr. POMBO. Yes.

Ms. BEATTIE. How do we—do we gather up—the answer is yes. We get input from the states, input from any scientists who happen to know this species and look to see if there is a critical mass of information that says good scientific information and consensus that says, "Yeah, we think there is some concern over this species." We call it a Candidate 1.

Mr. POMBO. You and I need to talk about this.

Ms. BEATTIE. OK.

Mr. POMBO. And, I won't put you through this right now at a hearing. But, you and I really do need to sit down and talk about this, because what you are telling me is totally contradictory to what I believe is actually happening.

So, we do need to talk about this, because the—in order for you to do what you just said you are doing, I do not believe you have the budget nor do you have the manpower to achieve what you just said you were doing——

Ms. BEATTIE. Well, as I——

Mr. POMBO. [continuing]—because we are talking about several thousand species. And, if you narrow this down to 243, you are claiming that you did all the scientific data on these and going down to the 243 you are saying that you have the 243 ready to go.

Ms. BEATTIE. Mr. Chairman, let me state it differently. On the Category 2s, we simply decided that it was not efficient use of our time and money to be keeping track of them, because we don't have——

Mr. POMBO. And, what percentage of the total 4,100 or whatever is Category 2? Half?

Ms. BEATTIE. Three thousand eight hundred. And, on Category 1, I'm saying that we are not launching a research project out of the Fish and Wildlife Service. We don't do that pretty much in any case.

We rely on——

Mr. POMBO. So, the 243 are not exactly ready to go, because you have not done all the scientific data to verify that they are endangered or threatened?

Ms. BEATTIE. They—those 243 are proposed for listing. That's not the whole list of candidate species.

Mr. POMBO. I know. The whole list is 4,000 something.

Ms. BEATTIE. No, no. The whole list—we just got rid of 3,800 off that list, because we decided it wasn't efficient use of our time.

Mr. POMBO. Well, how many do you have on the candidate list now?

Ms. BEATTIE. One hundred eighty-two.

Mr. POMBO. Where did the 243 number come from?

Ms. BEATTIE. That's—those are the species that were proposed for listing when the moratorium came on, that were ready to go through the listing process when the moratorium was imposed.

Mr. POMBO. So, that's why there's two different numbers that have been released?

Ms. BEATTIE. Right.

Mr. POMBO. So, you have 243 plus 184?

Ms. BEATTIE. No, 183, something like that.

Mr. POMBO. Whatever.

Ms. BEATTIE. Yes. But, the candidate species, Mr. Chairman, are treated very differently.

At the time, we—I should also say that we don't do primary research. We rely on scientists who are known to have an interest in the species. We rely on peer reviewed literature, et cetera.

We are not launching a research project on 183 species of our own, using our own——

Mr. POMBO. That's a big part of the problem with the way the current Act is working, is that right there, because you allow the ability of someone with a vested interest in a species being listed to be the one who puts up the information. And, I do not believe it's being accurately peer reviewed nor is it being accurately challenged, in that there are things that end up on the list or the candidate list.

And, the candidate list is very important, because a lot of the things that you've talked about, that Mr. Saxton has talked about, would afford endangered species protection to those which are on the candidate list, because now we are talking about keeping them from becoming threatened or endangered so we are going to begin to afford protection to species which have not gone through the listing process or that vetting process. Even the very limited amount of peer review that you actually do, those species are even before that.

And, now we are talking about affording some type of protection to those. So, that candidate list is extremely important in what is on there.

So, in—I mean, I didn't want to get into all of this. But, what you are saying is important.

Mr. MILLER. Mr. Chairman——

Ms. BEATTIE. Mr. Chairman, I mean, it strikes us as sort of eminently sensible, since we've sat here and talked about costs all day, to try and put some effort into prevention.

Mr. POMBO. Oh, I agree with you. And, if you would read my bill, you would understand that I do agree with that and that that is important.

Mr. Miller.

Mr. MILLER. One of the—it may be related to this, but it's a concern that has been raised among my constituents in some cases, is the suggestion—and I don't know the accuracy of it, but the suggestion is that this process builds on itself. Somebody makes a recommendation. You take a look at this. You talk to other people who know about it.

And, you get a list of concerns saying, "Yeah, we think that this is a viable candidate." But, if you don't think that, maybe the door isn't as wide open for those who might—you know, the scientists who might think otherwise or other interested parties would, however you would want to classify them.

So, then, because there is sort of a—let's say, a positive file saying this should be a candidate or seriously considered or whatever, that that sort of stays on there. And, then all of a sudden, the Corps and others start moving in a direction that suggests they have got to take some actions with respect to a project or what have you, because this is a candidate.

But, what we really don't know, at that same time, is whether or not there is a body of evidence that suggests that is not the case, the suggestion being there is sort of not an affirmative call for evidence to the contrary.

Ms. BEATTIE. In terms of the candidate list?

Mr. MILLER. Yeah. And, then all of a sudden, restrictions and actions start flowing from the notion, "Well, we have an obligation, because this is really a strong candidate."

But, maybe that's not the case. That's the suggestion. I don't know if it's accurate or not.

Ms. BEATTIE. In terms of our peer review process, generally it is as thorough as we can make it. And, we do call for opposing opinions.

And, I could cite, for instance, in California a—I wish I could remember the name of the fish, but a dart or whatever was rejected under opposing opinions because some said that there were other populations.

Mr. MILLER. Is that the ordinary—excuse me for taking your time, but is that the ordinary course of, you know, the method of operation here?

Ms. BEATTIE. It certainly is in the listing process. And, I'm going to ask somebody behind me to kick me in terms of the candidate process. I'm not as familiar with it.

I can tell you, however, that I believe everybody seated to my left or their organizations have signed a cooperative agreement on candidate conservation. That has worked very well in terms of doing that.

It doesn't address your concern about whether or not we are able to—because we actually go to work on candidates, which is the point you are making, whether we do thereby stifle or not invite opposing opinions.

Mr. POMBO. Reclaiming my time, I think that that's part of the danger of what you are talking about. And, that is—I mean, this is not a quick fix. This is not an administrative fix. This is not something that you can, you know, wave an executive order over and change.

But, to do what you are really talking about doing requires a bill like H.R. 2275 to accomplish. And, I realize that there are things in there that you don't like and that we will disagree on.

But, it requires that kind of a fundamental change in order to achieve what you are talking about doing. I mean, all the things that you have brought up and that this panel has brought up are the same things that we battled with in trying to come up with a way to make the Endangered Species Act work.

It's the problems that people have brought up, that our constituents have brought up to us over the past several years. It's all of these things that fundamentally have to be changed.

Money is a big part of this whole equation. And, in our bill, we put more money into it, because we know that you are going to have to spend the money in order to do that.

And, the question is going to be whether or not we can make this thing work so it has the fundamental support of those that are being regulated so that we can go in and say this is a worthwhile project that needs to be funded.

Ms. BEATTIE. Congressman, to the change in the review of the peer review of—excuse me. The change in the peer review of candidate species could be done administratively.

Mr. POMBO. Well——

Ms. BEATTIE. We wouldn't need a——

Mr. POMBO. [continuing]—I would argue with you that what you are doing administratively is not peer review. It is better than what was being done, but it is not a true peer review nor is it an accurate way of determining whether or not the science you are using—I mean, when we sat down and tried to draft peer review language, I spent a lot of time with people in the Administration who are scientists asking them what is an accurate way to peer review this kind of science.

And, that's what we tried to reflect. And, I don't believe that what is currently happening could honestly be called peer review, in the same respect that these scientists told me, "This is what should be done to determine whether or not that's good science."

I mean, I am way over time. And, I would like to talk to you about that.

Ms. BEATTIE. I would be happy to.

Mr. POMBO. When you—I'm glad to see you here. And, when you've got an opportunity, I would like to do that.

And, to the rest of the panel, thank you very much for taking the time to come in and testify.

I would like to call up the second panel. I apologize for the length of the hearing up to this point, but it is an extremely important topic.

If the second panel would come forward. If you would take your seats, we could get started.

I want to apologize for the lengthy first panel. I do appreciate you being here. And, I appreciate you sticking around.

So, if you would like to start, the floor is yours, Mr. Mazour.

STATEMENT OF DAVID F. MAZOUR, CO-CHAIR, ESA TASK FORCE, NATIONAL WATER RESOURCES ASSOCIATION; ACCOMPANIED BY WILLIAM T. PITTS

Mr. MAZOUR. Thank you, Mr. Chairman. My name is Dave Mazour. I am with the Central Nebraska Public Power and Irrigation District.

And, behind me is Tom Pitts, with the Colorado Water Congress. And, we appreciate the chance and the opportunity to come here before you and testify on behalf of the National Water Resources Association.

Tom and I are members of the Association's Endangered Species Act Task Force. We are co-chairs.

And, NWRA, as you probably realize, represents 17 western states and water users in those 17 western states. Our members provide water for municipal, industrial and agricultural purposes. Our members seek to do that in an efficient and environmentally sound way.

Now, National Water Resources Association supports the goal of the Endangered Species Act. We feel that conservation and protection of wildlife species and, in particular, endangered species is a very worthwhile national goal.

We also feel that cost effectiveness and sound science are fundamental to the protection and a long-term enduring program. Unfortunately, we are seeing in our areas that people are losing confidence in the Act and, in particular, the way it's being implemented.

Some of our members have been saddled with Endangered Species Act requirements that are costing millions of dollars that are providing little or marginal benefits. We feel that the root cause of this problem is that all Federal actions are subordinated to the Endangered Species Act.

That involves Federal permits, Federal licenses which our particular district is going through, loans and, yes, even the operation of Federal dams. Operational plans are subject to Section 7 consultation.

It seems that the Endangered Species Act has given absolute power to the Fish and Wildlife Service and to Marine Fisheries. We find that it does not require some of the balancing of Federal responsibilities.

It doesn't require the application of sound science. And, most of all, it does not require the consideration of economic or environmental impacts.

We feel that really the American people and Congress are faced really with two choices. We can have an Endangered Species Act that is positive and constructive and one that permits economic activity to proceed in compliance and also with protection of threatened and endangered species or we can see one, on the other hand,

that impedes and thwarts the economic activity and puts a great burden of cost on our citizens with little or no benefit.

And, it's our perception that the latter of those two is what is happening right now.

In the testimony that I have provided in advance, there are some examples from six states of specific examples of ESA requirements and the costs associated with those. When the question was raised by Chairman Young on costs, Tom Pitts, my co-chair, did some quick arithmetic to try and tabulate those costs. And, we come up with a number of annual costs from those examples in those six states, and they don't include everything, but $800 million per year.

Capital costs are between $300 and $1.3 billion. I think there are two points from those examples.

And, I can speak to those in Nebraska, but I cannot speak to those very well in the other states. But, there are two points that I think would be raised when you look at those.

First of all, the costs are extremely, extremely high. And, secondly, the benefits, in many cases, are questionable.

And, what are we getting for the dollars that are spent? It seems that in Nebraska, in those two examples that I cited, because we are using recommendations of the Fish and Wildlife Service rather than subjecting the recommendations to a more thorough scientific scrutiny, we are getting less benefit for the habitat, less benefit for the species at a greater cost.

The districts have tried some things on an experimental basis for the protection of terns and plovers. Our work and our proposals work better, costs less, produce more for the species. But, yet they are resisted by the Fish and Wildlife Service.

In summary, I would like to say that the Endangered Species Act, we believe, can be rewritten in a way. The House bill is an extremely good bill.

We feel that changes in the Act need to address it from an institutional way so that institutionally it will facilitate good, sound decisions and the development of reasonable decisions that are based on strong science and find ways to institutionally change the bill so that it will promote cost-effective measures for the protection of the species. Currently, we don't feel that's occurring right now.

And, we would encourage this Committee to proceed with enactment of the ESA reform bill. Thank you very much.

[Statement of Mr. Mazour and Mr. Pitts may be found at end of hearing.]

Mr. POMBO. Thank you. Mr. Hunter.

STATEMENT OF JOE HUNTER, EXECUTIVE DIRECTOR, COLORADO RIVER ENERGY DISTRIBUTORS ASSOCIATION, SALT LAKE CITY, UTAH.

Mr. HUNTER. Thank you, Mr. Chairman. I would ask that my entire statement be submitted for the record. And, I will, in the interest of time, try to dramatically summarize here.

The Colorado River Energy Distributors Association represents more than 100 consumer-owned electric systems in Arizona, Colorado, Nevada, New Mexico, Utah and Wyoming. Combined, these

members distribute more than 80 percent of the electricity generated by the Colorado River Storage Project.

That project consists essentially of five Federal dams in the Upper Colorado River basin and the associated generators, transmission, et cetera.

As was discussed with the first panel, the implementation of the Endangered Species Act affects hydro power really in a couple of ways. The first way, which is perhaps the most easily identified, is when the Federal agencies—in our case, the Bureau of Reclamation—engage in Endangered Species Act research activities, recovery planning, et cetera, and ascribe those costs to their own budgets.

In fact, to the extent they are deemed part of the operation of the project, those costs are recouped primarily through the sale of power. In the case of the Colorado River Storage Project, power sales cover all of the costs of generating power, a portion of the joint costs and in excess of 90 percent of the costs of irrigation.

So, in essence, if the project incurs a cost in the name of endangered species recovery, protection, whatever, it finds its way, by law, into the rates that the people I represent pay for power and, more importantly, their consumers. So, you do have those direct costs.

The far more ominous costs, from our standpoint—and, again, you heard some of this in the discussion with the folks from Bonneville this morning—are the costs of lost generation. The most popular and most attractive option quite often, when we are talking about fishes, as we are usually in the Colorado River, is to re-operate the dams, to alter the way they are operated from historic operations to provide specific flows at specific times for the species.

Given the way most western river basins are operated, and particularly the Colorado River, whenever you make those kinds of changes, you will have an impact on the value and, in most cases, the amount of hydro power that is produced. There are very real costs attached to those changes.

And, in our case, particularly in the Colorado River, we frankly have very little input as to how those changes are made. We wait to see what the process produces in terms of an operational scheme. And, then we incur the cost.

I will give you a couple of examples. Right now, at Flaming Gorge Dam in northern Utah, which is part of the Colorado River system, the dam has been operated for the past several years essentially for the benefit of four endangered fishes.

There is a program called the Recovery Implementation Program for endangered fishes of the Colorado River. So, we have a hydroelectric dam that essentially has been operated for the benefit of those fishes.

First of all, we had to do several years of research to test various flows in order to prepare the biological opinion under which the dam would then be operated. The annual cost—and I have these numbers in my testimony—for that activity was about $5 million a year, the economic cost.

Then, we ended up with a biological opinion, which dictated the flows we are now operating under. The annual estimated cost of those flows will be about $2 million a year.

And, as I point out in my written testimony, 11 years and $45 million later, we still don't know how Flaming Gorge Dam is going to be operated in the future and what those costs will be.

Another example can be found at Glen Canyon Dam. A lot of you saw the publicity, I'm sure, related to the recent spike flow there.

I want to make it very clear that what I'm talking about right now is not that spike flow. What I am talking about are changes in the operation of Glen Canyon Dam that have been called for under a biological opinion that would require five years of research flows, that would essentially flatten the river according to season for the benefit, specifically, of the endangered fish.

This is separate and apart from the changes we've already undertaken at Glen Canyon Dam for other environmental values, including the spike flow that you saw a couple of weeks ago. Again, it's in my testimony, but the grand total of five years of such flows would be roughly $395 million, again costs that would find their way directly into the rates our consumers pay for power.

Thank you, Mr. Chairman. I will be happy to answer any questions.

[Statement of Mr. Hunter may be found at end of hearing.]

Mr. POMBO. Thank you. Mr. Stovall.

STATEMENT OF JOHN F. STOVALL, GENERAL COUNSEL, KERN COUNTY WATER AGENCY FOR THE ASSOCIATION OF CALIFORNIA WATER AGENCIES, BAKERSFIELD, CALIFORNIA

Mr. STOVALL. Yes, Mr. Chairman. Thank you. If you will forgive me a personal comment, it's quite a nice place you've got here.

I haven't heard anyone say that. But, for those of us from outside the Beltway, it's a very impressive place you work in and a very important task you are engaged in. I appreciate the opportunity to be here to discuss these things with you.

Mr. POMBO. Well, this place is as much yours as it is mine. So, enjoy it.

Mr. STOVALL. It sounds good. It's ours. It's ours.

I am here on behalf of the Association of California Water Agencies. I am actually counsel for the Kern County Water Agency and also the Chairman of the Legal Committee of the State Water Contractors. I am here today because I'm the Chairman of the Endangered Species Work Group for the Association of California Water Agencies.

The main point we would like to make and I think to leave you with relates to a statement that has been attributed to Yogi Berra, as a lot of statements have. One of his comments was, "It ain't over 'til it's over."

I think one of our main problems with the Endangered Species Act is you never know what the cost of a project you are engaged in is going to be. It really isn't over because the Endangered Species Act and the Federal agencies enforcing that Act can always ask for additional costs. In fact, in our area, the Endangered Species Act is often referred to as the mother of all unfunded mandates.

I think what you've heard today sort of emphasizes that. I've quoted a number of different examples of the costs that have been imposed on the California Water Agencies in my written testimony,

so I won't repeat those here but would be glad to answer any questions you might have about them.

What I would really like to focus on is this idea that local governments, such as our water agencies, make what we consider to be huge investments for the public good in our areas. In the case of water agencies, that's water supply projects and flood control projects. And, we have this continuing problem that the costs of those projects are never fully known, because there is this repetitive kind of process where wildlife agencies come in and ask for additional money. It's very difficult for us to deal with, because we create a funding structure to fund particular infrastructure improvements—and you line up the ways of paying for that—and then along comes another requirement that adds additional costs.

It's difficult for us to deal with those things. It's even more difficult for our constituents when they may be engaged, for example, in family farming, and those costs come along.

It's not only difficult if they can't pay those costs, they are forced to walk away from a family farm; it becomes a tragedy.

Yet we are here today seeking ways to break the kind of impasse that has developed around ESA reform. What I would like to emphasize is just a few key points. We have set out a number of other points in the written testimony, which I won't repeat here.

The key points I would like to discuss with you are. Number one, as important as this hearing is and as appreciative as I'm sure we all are of your interests in finding out what these costs are, it is reflective in a way of a failure of the system.

I was up here last year talking to a staffer on the—well, I won't identify the staffer—talking about the need for reform. His comment to me—it certainly wasn't anyone on this Committee— was, "Well, you can't expect us to legislate based on anecdote." That kind of irritated me at the time. But, in thinking about it, I became even more irritated, because it struck me: well whose responsibility is it really to keep track of these costs? It should be the agencies.

Rather than the kind of information that we are gathering now on the true costs, which are the costs to the public, the costs to local governments, of this Act, there should be a systematic way of keeping track of those costs. I noticed a fellow from the Corps seemed to have a pretty good way of keeping track of the costs that he incurred. It seems to me that the Fish and Wildlife Service should also keep track of those costs. There should be a record of the kinds of demands that they've made on public agencies and private persons for compensation in the way of land or money, or payments for trust funds, and the kinds of costs that are incurred in attorneys fees and consultants fees, so that those could be then scored by the Congressional Budget Office or the Office of Management and Budget so that all of those costs could easily be tracked.

I think we would be very surprised at what those costs are. I notice I have run out of time, so I will stop there. If there were one thing that came out of this hearing, I would certainly love to see that as a systematic way of tracking all of these costs, not just the salaries of the enforcer because that's a very minimal part of it. It's the impact on the people that the enforcer is dealing with that really is significant here.

[Statement of Mr. Stovall may be found at end of hearing.]

Mr. POMBO. I think that's probably a very good way to put it, in that you can't just determine the cost of a program by the salary of the enforcer. And, that's a big part of the problem.

Yes, sir, Mr. Sharp.

STATEMENT OF SAM SHARP, SUPERVISOR, IMPERIAL COUNTY, CALIFORNIA, REPRESENTING SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

Mr. SHARP. Mr. Chairman and honorable Members of Congress, I am Sam Sharp, Supervisor of Imperial County, southern California. I am here on behalf of the Southern California Association of Governments, SCAG, which is the metropolitan planning organization for a six county region and the largest council of governments in the nation.

I am a member of SCAG's 70 member Regional Council that is composed of county supervisors, mayors and city council members from the Counties of Los Angeles, Orange, Riverside, Ventura, San Bernardino and Imperial. I am a member of the Energy and Environment Committee.

And, I also represent SCAG as an appointee to the Governor's Committee on Biodiversity. And, I also sit as a Federal appointee on the Desert Advisory Council.

I am going to submit written testimony, and I just want to make some salient points here and move on.

The Energy and Environment Committee has devoted a great deal of time this past year reviewing the Endangered Species Act reauthorization issues. And, Mr. Chairman, I would submit that it is a region that is highly supportive of endangered species, but working through the committee assignments and finally on to the Regional Council, we found that there were multiple problems with the Act as it now is presented.

And, in our review and some testimony that we presented to you some months ago, in the Regional Council we had a vote of 57 to 2 to support our position on reviewing. And, the main issues, of course, were on the "take" of private property without just compensation and the peer review.

We have multiple problems with that, because we, in our own area, see abuses that the peers have never addressed in 10 years of our endeavor to get them to acknowledge that there is a problem with some of their original assessments.

We have counties, such as Riverside, where they have already put away $120 million for the mitigation of one rat, the Stephens' Kangaroo rat. And, that's not enough.

And, they are also faced with multiple other endangered species potential. We, in Imperial County, it's a low desert area. Much of our area is below sea level, but we also have a tremendous number of endangered species, potential.

And, we see contradictory Federal law right now that keeps these species from being able to return, such as the wild horse protection which covers the burro and the burro is in direct competition to the Big Horn sheep. We see the other species that have the same problem.

And, so we are hoping in the moratorium period that there are going to be some looks at those issues. But, we didn't see anything come about that, indeed, would have helped us out on that.

We believe that a multi-species habitat preservation approach should be the way. We find that if you take one potential species at a time—in our county alone, when you take out a half a million acres of farm ground that is intensively farmed, the Salton Sea which is, of course, available to some of the endangered species—we have 275,000 acres of military. We just—when you take the desert tortoise out, that potential area out and the desert protected area out, there's nothing left.

Imperial County has an unemployment rate right at this minute of 26 percent. And, it ranges to 33.7 percent.

We are highly dependent upon recreation to help us with our economy. And, we are also—25 percent of our property tax comes from mining and geothermal. And, these are being very drastically affected by the continuation of desert protection, the endangered species and whatever, the next one down the line.

And, we are extremely apprehensive about our economy. I see I am about out of time, but we do have an area that is supportive but they have some—as indicated by our vote at SCAG, they have some very severe reservations about the program as now presented.

And, we would certainly like this Committee to review our recommendations, because we will be so highly impacted by the Endangered Species Act. Fifty-eight percent of our private property has a potential of being listed under the Endangered Species Act. And, that's pretty drastic.

And, we certainly appreciate you are here today. And, we would certainly—we have an open space in conservation element that we will send to you and also that just became available today, a document from the Growth Management Institute.

And, it is the "Bio Life Conservation Economic Development Dialogue for the Southern California Area." And, we will certainly make copies and return them to you post haste.

[Statement of Mr. Sharp may be found at end of hearing.]

Mr. POMBO. And, I would appreciate that. I would like to have a copy of that.

Mr. Sharp, between you and Mr. Stovall, it's probably two of the most impacted areas in the country when it comes to endangered species and just the sheer number of species that you have to deal with. And, I know that cost has been a major factor in a lot of the decisions you've had to make.

As a local elected government official, you have had to determine what your development fees are going to be based upon what the costs are to the county of developing. It's my understanding that you have had to reflect some of the costs of endangered species in the price of new homes, in the price of developing in your area, as we have in mine.

Mr. SHARP. Mr. Chairman, we have to do that. Our county is in such bad financial shape that when we, last year, had to turn down an immunization program for infants because we did not have the match, you can see how drastic our situation is.

And, endangered species, I'm sorry to say, isn't that high up on the list when we have to make that kind of decision. There were five supervisors that went out of that meeting crying.

And, I will tell you. It's not good to be poor. And, when we see Riverside with $130 million already invested in one species and our entire yearly budget is only $150 million plus the part that we control is $21 million. So, there is not a whole lot there.

And, it is being passed on to development and the mines. And, hopefully, we won't push them out of the region because the expense of operation is getting such that——

Mr. POMBO. But, what you are telling me is it has impacted—it has impacted other parts of your budget as well. I understand in a county in California, a very small percentage of your budget is discretionary.

In my county, it's about 15 percent that is discretionary. The rest of it is Federal or state mandate, how you are going to spend it.

And, I would imagine that at Imperial that it's not much different than that, because we have similar unemployment rates and similar problems. So, I would assume that to be true.

So, that—the cost of implementing an endangered species program is a mandate from the Federal Government. And, that takes away from the discretionary spending that you have.

Mr. SHARP. You are right. And, Mr. Chair, in our—in the SCAG recommendation, we felt that we—as you mentioned, we are really on the cutting edge of the endangered species cost, as is Kern County. And, we strongly feel that if this is a national priority and a state priority that those two entities should be there with their checkbook and help us out.

It's very easy to live in a metropolitan area and be supportive of the Endangered Species Act, because there's very little expense that is going to be coming out of their pocket. And, if you want to become a member, we say, "Bring your pocketbook with you in the form of Federal support or state support."

As you well know, California has endangered species regulations that are even tougher than the Federal Act. And, so we really have a double whammy.

Mr. POMBO. In speaking with some of the guys that we are dealing with, the gnatcatcher on the coast, they told me that the private cost was going to approach $1 billion, not the state or local government nor the Federal Government but the private cost was going to approach $1 billion before they were done.

And, that would have to be absorbed into that economy in a very, very small region of the country.

Mr. SHARP. We see that. And, I don't have those figures for you, Mr. Chairman, but we see it in the small programs that we have going.

We are in the process right now of permitting a regional waste by rail project. And, this site is going to be on the footprint of an old mine—of a mine that's existing right now.

So, there is very little additional environmental work that should have been necessary. But, we watched—this has been going into the sixth year and we are looking at two more years, because one government agency won't sign before the other and the other one won't sign before that one does.

And, it just goes on and on. And, in the meantime, this is a facility that is needed by the metropolitan area of Los Angeles.

And, we are looking forward to using part of that money stream to take care of our environmental problems. But, until that happens, we don't have the money.

Mr. POMBO. Mr. Stovall, in your experience—and something that you said made me think of this. If the environmental cost, the endangered species cost, drives up the cost of irrigation water to the point where the people that are using it can no longer afford to farm, that's not included in any of these costs that we've talked about.

I mean, the actual costs may be very, very small when you look at it. But, that person just lost their ranch and all their future income and everything else.

And, that's not considered in any of these costs. And, quite frankly, we tried to find out what the national costs were on the private sector of the Endangered Species Act.

And, nobody has any idea.

Mr. STOVALL. I think that's absolutely correct, Mr. Chairman. We've had instances.

I think when you were out to Kern County, there was a fellow there who testified about the loss of his farm, as all of these impacts came down on him and finally he just couldn't do it anymore. And, it's that kind of tragedy that really isn't accounted for anywhere at this point.

Mr. POMBO. Your unemployment rates in your area have to be in the low 20's.

Mr. STOVALL. Right. We—in Kern County itself, actually because we have a large groundwater basin, we are a little bit under 20. But, along the west side of not only Kern County but also the neighboring counties, where they have no groundwater basin to rely on as a kind of regulating mechanism, those areas were experiencing certainly in the 20's.

I believe in Coalinga, in that vicinity, in the drought, we had unemployment rates approaching 40 percent. Our fear is that the Endangered Species Act not become a kind of permanent regulatory drought that impacts those areas to the same degree.

Mr. POMBO. And, that is directly attributable to the—I mean, we have always had a relatively high unemployment rate in the valley, in California. These very large numbers is what we've seen since the regulatory drought took effect and we had the problems with delivery of irrigation water.

And, from all of the implications that I've seen, that can be directly attributed to the Endangered Species Act and the way it was being implemented.

Mr. STOVALL. I think our studies have shown that—most of our water comes from the Bay Delta. That in a normal year—and I don't mean to sound disparaging of the agreement which was reached, the Bay Delta Accord, because it saved us a lot of water over what the agencies were actually demanding—but, in a normal year, we are looking at something around 350,000 to 400,000 acre feet of water that are taken out of the water supply from both the State Water Project and the Central Valley Project. And, that can translate directly into jobs.

Mr. POMBO. Translates directly into irrigation water for 100,000 to 150,000 acres of farm land.

Mr. STOVALL. That's right.

Mr. POMBO. Mr. Hunter, I believe in your testimony you made the comment of the Endangered Species Act takes precedence. Am I mistaken that you said that?

And, I've heard a lot of people say that, that it takes precedence over other Federal laws and Federal mandates and the missions of Federal agencies.

Mr. HUNTER. Well, whether it does or not, I don't know. But, it certainly is being implemented that way in the Colorado River Basin.

What I was referring to and would emphasize is that there are Federal statutes that govern the operation of Federal water projects, that identify what the benefits are, who the beneficiaries are, how they should be paid for. Our experience in recent years has been that riding in with the banner of the Endangered Species Act gives the Federal Government, particularly the Fish and Wildlife Service, the opportunity to essentially disrupt those priorities and those benefits.

And, as I said, we feel as though we have very little, if any, influence on those decisions that are made, even though the impacts, as I pointed out, are enormous.

Mr. POMBO. Do you feel that with the amount of dollars that you are talking about that it's costing the people within your coalition that you could do a better job of recovering species than what is currently being done?

Mr. HUNTER. Absolutely. One of the things that we do, CREDA, and I know a number of other entities like us do the same, we, in fact, employ our own researchers, our own biologists. The stakes are that high.

And, we continually question and recommend alternatives and debate the efficacy of some of the actions that are being taken. But, if I could take a little bit of liberty here, one of the problems I see, particularly as it relates to the use of power revenues—and I suspect it would apply to the use of water revenues as well—is that there is no discipline in that budget for the regulators.

In other words, we are viewed as a bottomless pit of funds. It's like, "Well, let's try this this year and see how it works and see what happens." And, we end up paying the cost.

There is no cost to the Federal Government of doing that. And, often there is no identifiable cost to anyone else.

It merely appears a couple of years down the road in your water or power rates. And, we would submit that if there were some limitations placed on that kind of activity that we would get better science, better recovery programs and probably better results with fewer dollars spent.

Mr. POMBO. So, you believe that there should be some type of cost accountability on the regulators?

Mr. HUNTER. Absolutely.

Mr. POMBO. Which, in Mr. Sharp's testimony when he talked about compensation of private property rights, that's what it's really all about, is some accountability for the cost of the actions that they are taking. I mean, they have openly gone out, as has Kern

County, and tried to establish an HCP, tried to work out a cooperative agreement that everybody could live under, that if there is no cost to the agency whatsoever of what they are demanding, then they can demand anything they want because it doesn't cost them anything.

There is no down side to them.

Mr. HUNTER. Right.

Mr. POMBO. And, unfortunately, under the current Act, I believe that's what is happening.

Mr. Mazour, when we talk about western water, there is—to the best of my knowledge, there is no one, no district or no one that is not operating without some impact from the ESA at this point, whether it is in terms of irrigation or whether it's in terms of production of power. For that matter, we have a number of them in terms of recreational and commercial uses as well, commercial shipping uses.

Would you have any idea what the direct cost is to the water agencies that you represent? Has anybody ever sat down and started saying, "It's costing my district this much and mine this much" and just actually gone through and figured out what that cost is?

Mr. MAZOUR. Well, we really haven't yet. But, in preparation for this testimony, our Association asked for some information from some of our members.

And, like I say, we received some responses back from examples in six states. And, the numbers get pretty high.

Now, it's somewhat difficult to tabulate the numbers, because there are—and you have spoken to this already. There are substantial numbers that come with the regulatory burden of getting through the loans or the permits or whatever that oftentimes don't show up.

And, those are the costs of the consultants, the lawyers, the staff time, the experimental studies. And, then those oftentimes never show up and you just get to the next part of direct actions hopefully for the purpose of protecting the species.

And, our experience in Nebraska is that some of those requirements and recommendations of the Federal agencies really don't do a very good job of protecting the species. And, they cost an awful lot of money. And, other alternatives work better.

But, in direct answer to your question, we have not tabulated. And, I imagine you would find that quite helpful.

Mr. POMBO. If you do have that opportunity to begin to gather that data, I would be interested in that. I'm sure that it would be quite an undertaking just to figure it out.

But, if you do, I would be interested in that.

Mr. MAZOUR. In about a half an hour, our National Water Resources Association Task Force will be meeting down the street a ways. And, we will bring that up and pass on to them the interest of you and this Committee in getting some more definite answers on that subject.

Mr. POMBO. The point of this hearing and the reason that we started down this track was that there has been a misconception or something that was put out that the cost of the Endangered Species Act was very small. And, we've all heard it likened to every-

thing from the cost of buying pizza in Washington, D.C., to the cost of one mile of freeway.

We've heard all of these examples of how much we spend on endangered species. The reality is it's much, much higher than anybody would ever admit.

And, I think that this hearing has pointed out that it goes in all reaches of the Federal Government. And, that is just the tip of the iceberg when you actually start getting into what we are spending.

You know, whether you are a power producing agency and you have a $265 million annual cost or whether you are an irrigation district that because of a loss of production that it's several hundred million dollars in your region, we are spending a huge amount of money. Even by the Federal Government's standards, we are spending a huge amount of money in trying to recover species.

And, quite frankly, we are doing a terrible job of doing it. I—regardless of which side of this issue you are on, everybody—when I ask that question, "Could you do a better job with the money that is being spent," everybody tells me yes.

I mean, whether you come from an environmental group, a local environmental group, or whether you come from an industry group, they all say yes, there's a lot better way to do it. If you are spending your own money, you can figure out a better way to have results.

And, when we look at changes, that's part of what has to be changed, is that the local people have to be brought in and you have to try to figure out a way to spend the money better than what we are doing.

Before I wrap this up, I just want to ask all of you. I did not hear in your testimony, in reviewing your testimony or in your answers to the questions or your oral statement, any of you say that you felt like you didn't care about the Endangered Species Act, you didn't care about wildlife, that you would just as soon do away with the Endangered Species Act. I did not hear any of you mention that you felt like we ought to gut the Endangered Species Act or repeal it.

Is that correct? Do any of you want to——

Mr. SHARP. Mr. Chairman, I come from one of the most conservative areas in the United States. And, those little farmers out there, they could care—almost care less what's happening anywhere else if it isn't agriculture.

But, they realize that Endangered Species is an Act that has merit. But, they also realize that they—that some of their farming practices are going to be in jeopardy because of the fact that endangered species, if they move into an area where they have not plowed under, they could lose the use of the land. The farmer up at Temecula is an outstanding example of that.

And, no, they are—they want the Endangered Species Act, but they want the information in properly. If I may give an example, we are desert, extremely dry, less than three inches of rain a year.

And, in the late 70's when the agencies were there doing the preliminary studies on flora and fauna, there was never any study done on rainfall. And, in those years, it was right after a 100 year rain and a 50 year rain and everything was blooming and everything was doing very well.

Seven years later, in the fifth year of a drought, they came back and did the second evaluation. And, of course, everything was in horrible shape.

And, we have gone to the agencies. And, supposedly it was passed on to the peers. And, there has never been any consideration.

If you turn the water faucet off in your own yard for a year, you are going to see a drastic reduction of plants, especially in your yard. And, here we have an area that it's nothing for some of those areas to go three years without rain.

So, we are just saying get your information correct and then make your decision. And, we don't think that they have done that up to this point.

Mr. POMBO. So, the message that you are bringing to Washington is that we need to make changes. You realize how important it is to protect species, how important it is to protect our fish and wildlife, but there are changes that need to be made in the current Act.

Mr. SHARP. Absolutely, Mr. Chair.

Mr. STOVALL. Yes, I concur in that, Mr. Chairman. I think many of our agencies are engaged in projects where they could actually be very beneficial to the environment, but they seem to get all balled up in this red tape and cost. It's really unnecessary.

One of the things that impacts us is the fear actually of increased mandates after we've done one of these projects. Folks I know down in the metropolitan water district and in our area would like to engage in projects that can have some significant environmental benefits and enter into an agreement with the enforcement agencies. Yet, they can never, under the current Act, guarantee us or assure us that if we lay all this land fallow and allow species to invade it, that if some species is listed in the future that they won't be coming back and knocking at our door and asking for more.

I think the project that Mr. Dooley referenced earlier on is an example of that. Where some of our agencies have done things to help the environment and they have wound up being penalized for it. That's not good for the environment either.

If we can avoid that kind of thing, I think that actually stands a chance of really providing some voluntary efforts to create environmental benefits.

Mr. POMBO. Thank you. I would like to thank all of you for coming and testifying before the Committee.

There may be further questions that members of the Committee may like to submit to you. Everybody on the Committee has received copies of your testimony.

And, if there are further questions, they will be forwarded to you in writing. And, if you could respond in a timely fashion to those questions, I would greatly appreciate it.

And, again, I appreciate you sticking around all day for us. So, thank you very much.

The hearing is adjourned.

[Whereupon, the hearing was adjourned at 2:37 p.m.; and the following was submitted for the record:]

STATEMENT OF MOLLIE BEATTIE, DIRECTOR, U.S. FISH AND WILDLIFE SERVICE, DEPARTMENT OF THE INTERIOR, BEFORE THE HOUSE COMMITTEE ON RESOURCES, REGARDING THE IMPLEMENTATION AND ADMINISTRATION OF THE ENDANGERED SPECIES ACT.

APRIL 17, 1996

Mr. Chairman and members of the Resources Committee, I am very pleased to be here today to represent the Department of the Interior concerning the administration and implementation of the Endangered Species Act (ESA).

The last year has been a challenging one for me. I have had an opportunity to contemplate my life and the wonderful and intricate connections between all living things that share the Earth. And I am deeply convinced that our future is inextricably linked to the future of wildlife. If we are creating a world which is so inhospitable that hundreds and even thousands of species cannot survive, ultimately we will find our own survival threatened as well.

In the heat of a public controversy, when people are knocking on both your door and on my door, it is tempting to take the easy way out and avoid the hard decisions required to conserve wild species that often appear to have no known value to human society. Yet science tells us that hundreds of wild species may hold as yet undiscovered cures for cancer and other diseases. The decisions we make about the Endangered Species Act this year will influence the medical treatments available to our children

and grandchildren in the 21st century.

We must do our best to conserve all species, because there is no way for us to know what is still out there. Just two weeks ago, the Washington Post reported on the discovery of a new fossil primate, a tiny animal that lived millions of years ago and weighed no more than a few ounces. Scientists now believe this very animal was an essential link in the evolution of higher primates, including human beings. When I read that article, I had to ask myself what future wonders we might be losing every time some small and seemingly insignificant creature becomes extinct.

The Endangered Species Act is, in the scheme of things, a step in the right direction. Of all the species protected by the Act since 1973, 99.9% have averted extinction. The Act is fulfilling its charter to protect species and their habitats. However, no law is perfect and this Administration has stepped forward and is not only proposing, but implementing steps to improve the Act.

Mr. Chairman, this Department has worked tirelessly over the last three years to change how the Act is administered and to make it work better for the American people. We have taken steps to implement and administer the ESA in a manner that conserves species, recognizes the rights of private property owners and achieves the most benefits in the most cost effective manner.

Previously unexplored opportunities already contained in the ESA are being pursued. In doing so, we have discovered that the ESA has a wide array of tools to resolve or avoid conflicts between species conservation and the needs of our society.

Last March, the Department of the Interior, in conjunction with the Department of Commerce, put forth a document known as the "10-point plan" detailing the steps we believe we can implement administratively to improve the Act and highlighting those issues we believe must be dealt with legislatively. The objectives of the plan are based on a common-sense approach to the ESA and a concerted effort to address legitimate problems while preserving the core goal of protecting our nation's priceless biological heritage. The Department believes that the steps we have taken are indeed improving the way the Act works for both species and humans.

Unfortunately, over the last two years, our efforts have been greatly hindered by Congressional actions including reductions in funding and the imposition of a listing moratorium. In addition, the legislation approved by this Committee to reauthorize the Act, H.R. 2275, would undermine the scientific foundation of the ESA and impose a costly and bureaucratic process that would provide virtually no protection for species.

A striking example of where the Department's efforts are being

hindered by Congressional actions would be in the area of candidate conservation. All of us would agree that the most opportune time to conserve species and their habitat is before the protections of the Act are necessary. In fact, one of the shortfalls of how natural resources were previously managed was that not enough emphasis was placed on candidate conservation.

Over the last several years, the Department has placed increased priority on the early conservation of species. Between July 1994 and July 1995, at least 15 candidate conservation agreements have been entered into and at least 20 or more such agreements are currently being developed. In addition, the FWS is in the process of finalizing guidance that will stress working with our partners to identify candidate species and to plan candidate conservation actions. By being proactive, we hope to preclude the listing of many species in the future.

We have reached out to other agencies and private groups such as universities, State wildlife management agencies, resort developers and private landowners to undertake candidate conservation activities. As an example, a Memorandum of Agreement was completed to promote restoration and conservation actions that may make it unnecessary to list the robust redhorse (a candidate fish species). Cooperators on this project include the Fish and Wildlife Service (FWS), National Biological Service (NBS), state agencies (GA,SC,NC), power companies, and

conservation groups.

Unfortunately, this Congress has chosen to severely curtail the funds available to participate and encourage these proactive measures. In fact, in the 1996 Interior Appropriations bill originally passed by the House, no money was provided for candidate conservation. In other words, Members of the House agreed to zero out funding for efforts that would greatly benefit both the public and species.

The issue of providing landowners affected either directly or indirectly by the ESA with certainty is another area that I believe all parties would agree needs additional attention. Yet once again, Congress has stepped in and severely curtailed our efforts to improve both the listing process and the flexibility that can be provided to landowners.

Over the last several years, numerous steps have been taken to improve the process by which a species is listed, as well as the administration of the ESA for those species already listed. Petition management guidance, to be released soon, will identify the data standards for accepting petitions to list a species.

On July 1, 1994, the FWS and National Marine Fisheries Service (NMFS) jointly issued several policies to, among other things, ensure that the highest quality scientific information is used to

develop and implement all ESA related activities. Since that time, listing proposals and draft recovery plans have been made subject to independent scientific peer review. The policies issued in July 1994 also increase greatly private sector involvement in activities dealing with the implementation of the ESA, thereby providing more certainty by involving the stakeholders in the process.

Also, since July 1994, all final listing rules now state clearly which actions within the range of the listed species are or are not, likely to result in a "take" of listed wildlife in violation of the ESA, to the extent that such actions are known. For example, when the Appalachian elk toe (a freshwater mussel) was listed, the FWS announced up front that farming and legal mining activities in North Carolina and Tennessee would not likely result in a violation of the ESA.

Additional steps are also being taken to provide landowners with certainty regarding potential future impacts of ESA actions. The "no surprises" policy announced by Secretary Babbitt in August 1994, assures private landowners participating in Habitat Conservation Plans (HCPs) that no additional requirements will be imposed on plan participants for species covered by that HCP.

The Department is also proud of another common sense policy, the "safe harbor" program and its potential for encouraging private

landowners to be involved in the recovery of listed species. The "safe harbor" program's goal is to encourage landowners to provide habitat for listed species. Under this program, private landowners with assistance from the FWS or with other qualified Federal or state agencies develop a management program to be carried out on their lands for the benefit of listed species. Based on such a program, a Safe Harbor Agreement is entered into at least by the Service and the landowner. The Service, in turn, will issue the private landowner a permit for any future take of listed species above the existing conditions at the time of the agreement. Over 23 "safe harbor" agreements, mostly in the Southeast and the West, have been or are being developed. In the past year, for the Sandhill area of North Carolina alone, 6 non-federal landowners have been given safe harbor agreements and it is anticipated that an additional 15 will be developed this year. In addition, two HCPs incorporating safe harbor agreements have been approved by the FWS.

More is also being done to use Habitat Conservation Plans to ease the regulatory burdens of the ESA on private landowners. In 1992, 14 HCPs had been approved. As of the first March 1996, 141 permits had been issued, and 300 more are in the works, demonstrating the flexibility of the ESA as it relates to the needs of private landowners. A new section 10 (HCP) handbook to be released soon provides clear guidance for all aspects of the HCP program; establishes a "low-effect" HCP category with

expedited permit approval procedures; increases coordination requirements between the Field and Regional offices; establishes specific time periods for processing incidental take permit applications; and allows unlisted species to be named in the HCP, expediting future permit amendments if a species is subsequently listed.

Unfortunately, these proactive efforts by the Department are being hindered by this Congress. Last March Congress imposed a moratorium on all final listings and designations of critical habitat. In imposing the moratorium, the Conference report makes it very clear that the moratorium was to be a "time out", not a long-term interruption of the listing process which is vital to species protection. Mr. Chairman, it has been over a year since this moratorium was enacted and funding for the ESA has been severely reduced. In addition, the Department is without an appropriations bill for Fiscal Year 1996, which ends in only 5 months.

The combination of these events is for all practical purposes devastating the Department's approach to species conservation. Congressional listing prohibitions and funding cuts are eroding the Department's ability to implement the ESA in a manner that provides maximum flexibility in species conservation to avoid potential conflicts. Although imposing a moratorium and cutting funds may temporarily avoid a few of the immediate problems faced

by the 104th Congress, in the long-term these actions will harm rather than benefit both species and landowners who must find a way to comply with the ESA.

238 U.S. species already proposed for listing are caught in limbo under the moratorium and an additional 182 listing candidates are also vulnerable. Under the current scenario, the status of these species may continue to decline and the public's petitions will go unanswered. If we continue to ignore these species, it will take more time, money and effort to recover them when we finally do receive the money and authority to protect them. The longer we delay action on these species, the less flexibility we are able to provide to those who are affected by the Act. This outcome is bad for the economy, bad for private landowners and especially bad for the species involved. Congress must lift the moratorium and restore full funding to the endangered species program immediately.

For many other activities required under the Endangered Species Act such as consultation, recovery and cooperation with states, Congress has again proposed budget cuts that will significantly impede the Department's ability to be responsive to landowners while protecting species.

Federal agencies and the lands under their jurisdiction are key to species conservation. Significant progress is being made in

improving and increasing the involvement of other federal agencies in endangered species issues. The section 7 interagency consultation process is one of the most important parts of the ESA. Consultation occurs with other agencies to ensure that federal projects are not likely to jeopardize the continued existence of listed species. It is an integral component of listed species recovery.

Several Memoranda of Understanding (MOU) and Memoranda of Agreements have been developed to facilitate increased cooperation among federal agencies. For example, in May 1994, FWS signed a multi-agency MOU to establish a Federal Native Plant Conservation Committee to identify priority conservation needs for native plants and their habitats. To date this agreement has been signed by 9 Federal agencies and 50 other cooperators.

Obviously, the Federal government is not the only player in the implementation of the ESA. In addition to the cooperation of private citizens, building new partnerships and strengthening existing ones with state, tribal and local governments is essential to achieving the goals of the Act. Policy directives to enhance the participation of state fish and wildlife agencies in implementation of the ESA, include state expertise and information in the listing, consultation and recovery processes have been issued. One of the most important components of the ESA is the Cooperative Grants provided to state programs, and we

will continue to pursue increased funding for these grants. Programs such as the reintroduction of black-footed ferrets would not have been possible without the active participation of the states.

Finally, the goal of any endangered species program is the recovery of species. Compare the small amount of time the recovery program has been in place, only 20 years, to the long period that many species have been in decline -- for some, about 300 years -- and one has to conclude that the program is a resounding success. For species protected in 1973 by the original Act, 58% are stable or improving; for species listed between 1974-78, 42% are stable or improving; for species listed between 1979-88, 44% are stable or improving; and for those listed after 1989, about 22% are stable or improving. The fact that almost all listed species still exist speaks to the tremendous success of the program.

Recovery plans are being developed in a timely manner that includes the input of a diversified group of stakeholders; promotes the conservation of multiple species and their habitats; and minimizes the social and economic impacts of recovering the species. For example, over 7 multi-species recovery plans have been or are being developed at this time, including the Everglades Recovery plan, the Southwestern Riparian Recovery Team and the Mobile River Recovery Plan.

I am well aware that some will object to restoring the endangered species program on the grounds that the country cannot afford to protect endangered species. Mr. Chairman, it is my firmly held belief that the country cannot afford NOT to protect endangered species. Three recent reports by independent economists examined the assumption that environmental regulations, and endangered species protections in particular, are damaging to the economy. All three concluded that the data do not support this belief, and that indeed a healthy environment is essential to a healthy economy.

A report, endorsed by 60 Pacific Northwest economists, found that between 1988 and 1994, the number of jobs in Idaho, Montana, Oregon, and Washington increased by 940,000, or 18 percent -- two to three times the national rate. These economists note that the Pacific Northwest is making a successful transition from dependence on a few extractive industries to a modern, widely diversified economy. These economists found that natural landscapes today may often generate more new jobs and income by providing a beautiful and healthy environment, making the Pacific Northwest an attractive place to live and work. "A healthy environment," they report, "is a major stimulus for a healthy economy."

Another report is a preliminary work by MIT economist Dr. Stephen Meyer on the impact of endangered species listings on home

building and the real estate industry. Dr. Meyer examined the assertion that the listing of the northern spotted owl drove up timber prices and increased the cost of new single-family homes across the nation. He found that housing construction rates drive long-standing cycles of production and prices in Pacific Northwest timber, and there is no evidence that the listing of the spotted owl had a demonstrable impact on timber prices, or that the price of Pacific Northwest timber had any measurable effect on home prices.

The California Senate Office of Research built on the MIT study and found that in California environmental regulations have had minimal impact on plant closings and job losses. This report also says market forces played a greater role in paring back jobs in the timber industry than did the limits on harvest of old-growth timber required to protect the owl. I am providing all three reports for the Committee.

I am well aware that conservation values cannot be reduced to mere dollars and cents. But as government officials, we are properly required to calculate the expenditures for our programs. The Interior Department has submitted detailed information related to the expenditures for the endangered species program requested by the Chairman. I would like to request that the Department's response be included as part of the hearing record. Included in this response were the Expenditure Reports for 1992

and 1993. The Expenditure Reports detail the amount of money reported spent by all Federal and State agencies on endangered species issues including all of the Department's agencies. Also attached to my testimony is a summary of each of the Department of Interior's agencies/bureaus expenditures on endangered species programs.

I would like to thank the Members for the opportunity to appear before the Committee on behalf of the Department of the Interior and I will be happy to answer any questions Members might have related to this information. Also, accompanying me today are officials from the agencies at the Department of the Interior including BLM, NBS, NPS, BOR, and FWS to provide technical assistance on questions relating to their ESA expenditures.

In closing, the ESA is a necessary and important component of our efforts to protect this nation's biodiversity. I believe that as a nation we can afford to protect endangered species, and there are powerfully compelling reasons for doing so. This Department is continuing to make the Act work better for species and the public. However, if we are to be successful in our efforts, Congress must adequately fund the program and remove the shackles of the listing moratorium. Don't let the legacy of the 104th Congress be the destruction of one of our nation's most important environmental laws, and the impoverishment of our natural heritage.

DEPARTMENT OF THE INTERIOR

ENDANGERED SPECIES EXPENDITURES (x $1000) BY BUREAU FOR FISCAL YEARS 1989-1993

	1989	1990	1991	1992	1993	Total
BIA	1,250.6	1,245	3,460.6	2,967.7	3,683.9	12,607.8
BLM	1,270.6	2,390.6	6,883.9	10,490	14,484	35,519.1
BOM	-	-	-	-	551	551
BOR	9,164	4,945.2	11,256	14,248	19,465.7	59,078.9
FWS	18,353.2	35,262.2	54,517.3	55,068.8	58,460.7	221,662.2
NPS	2,444.2	3,368.6	3,809.2	3,830.2	3,282.3	16,734.5
OSM	-	-	-	-	-	-
USGS	-	-	-	-	-	-
Total	32,482.6	47,211.6	79,927	86,604.7	99,927.6	346,153.5

DEPARTMENT OF DEFENSE
AND
ENDANGERED SPECIES ACT

STATEMENT OF

SHERRI W. GOODMAN

DEPUTY UNDER SECRETARY OF DEFENSE
(ENVIRONMENTAL SECURITY)

BEFORE THE
HOUSE RESOURCES COMMITTEE

APRIL 17, 1995

NOT FOR PUBLICATION UNTIL RELEASED BY THE
HOUSE RESOURCES COMMITTEE

I would like to thank Chairman Young and the members of the House Resources Committee for inviting me to testify today on behalf of the Department of Defense.

DoD is a large user of land, sea, and airspace. We manage 25 million acres of land across the United States, a land measurably the size of the state of Virginia. DoD has 400 major military installations and is the third largest land management department in the United States. DoD lands are managed first and foremost to provide for the military training and testing necessary to enhance readiness.

DoD land is needed to support readiness, testing of new weapon systems, testing of munitions, deployment of weapon systems, and combat training exercises. Specific and unique natural features of the land are crucial to military readiness. To have the ability to deploy and fight successfully anywhere in the world, the armed forces must train in a wide variety of climatic and terrain conditions. Accordingly, training areas are located throughout the United States on grasslands, deserts, coastal areas, forests and tundra. For example, desert environments are used for maneuvers that involve large, mechanized battalions; coastal zones and beaches provide the setting for missile launches and amphibious landings; forested areas are essential for small arms combat training; and, large open areas are needed to accommodate air-to-ground bombing ranges.

DoD lands are rich in various natural resources and we have an obligation to protect those resources for future generations. Our lands are home to many important species and habitats. At least 400 candidate and listed threatened and endangered species are found on our installations. Our installations also contain some of the finest remaining examples of such rare native vegetative communities as old-growth forests, tall-grass prairies, and vernal pool wetlands. DoD takes pride in its stewardship program and has had policies in place to protect natural and cultural resources for many years. This early commitment has evolved into well-defined, formalized, and integrated conservation policies.

Our military lands and waters hold a storehouse of rare biological resources -- desert tortoise, bald eagle, manatee, least tern, greenback cutthroat trout, desert bighorn sheep, western snowy plover, smooth coneflower, red-cockaded woodpecker, Florida scrub jay, loggerhead sea turtle -- just to name a few. Consultations under the National Environmental Policy Act and section 7 of the Endangered Species Act have been carried out for over 20 years. DoD has been extremely successful in balancing compliance with the Endangered Species Act with conducting military training activities to ensure military readiness and provide for national security. No DoD lands however, are managed solely for the protection of endangered or threatened species.

DoD's conservation program is closely tied to support the military mission. Sound conservation management practices enhance mission safety; promote sustainability of training areas; provide increased flexibility for military trainers; and enhance the quality of life for our installation residents and those that reside in the vicinity of an

installation. And, sound conservation management helps sustain our natural resources, including our threatened and endangered species.

Our military activities are performed to ensure the highest possible safety of operations. For example, buffer or safety zones are established around artillery or aerial bombing impact areas. These buffer zones, in which no activities are usually permitted, also benefit wildlife, particularly endangered species. For example, the red-cockaded woodpecker thrives in the buffer zones at Eglin Air Force Base (AFB), Florida -- a perfect example of how performing the military mission and protecting natural resources often are mutually beneficial endeavors.

Another important mission-oriented safety program is the Bird Air Strike Hazard (BASH) program, aimed at minimizing collisions between military aircraft and birds. Knowledge of where birds travel, nest, and feed helps DoD avoid problem areas and therefore avoid loss of life or the destruction of valuable airplanes. In September 1995, an E-3B AWACs aircraft departing Elmendorf AFB in Alaska, struck a flock of Canada geese. The aircraft crashed and all 24 crew members were killed. As a result of this accident, the Air Force has improved its preparation for the bird migration season and developed a more aggressive program to detect and deter geese. This program has also reduced adverse effects on bird populations.

Controlled burns enhance public safety, protect DoD assets that are essential to conducting training, and can open inaccessible areas to ground training. These measures destroy unwanted undergrowth, recycle nutrients, and promote healthy, natural habitat. They can also be vital to the survival of some threatened and endangered species.

DoD must manage land in such a manner that it can support sustained training activity. This is an important consideration for the Army whose training needs, especially for heavy armor, are particularly hard on the natural terrain. However, if training and associated land maintenance is not carefully planned and managed, the land will deteriorate, and eventually become incapable of providing realistic training. The Integrated Training Area Management (ITAM) program was developed to ensure sustained use of military lands to support readiness training. The program balances the demands of training activities with the ability of the land to recover from the affects of training. ITAM employs technologies such as Land Condition-Trend Analysis Computer programs, global positioning systems (GPS), and geographic information systems (GIS) to monitor trends in the condition of soils, vegetation, and sensitive resources over time, and to determine appropriate management actions, such as rotation of training areas. Enhanced awareness is another important component of ITAM. Military personnel are briefed on environmental issues and are more aware of sensitive ecological areas or endangered species located in their training area. Installations using ITAM's approaches to natural resource management will ultimately increase the level of realism in their training exercises.

In addition to ITAM, DoD installations use other management tools to conserve and enhance fish and wildlife populations. Under authority of the Sikes Act, we work in cooperation with the Department of the Interior and State fish and wildlife agencies. Our current efforts focus on completing biologic inventories on all our lands, and preparing and implementing management plans to sustain these resources. These plans are comprehensive blueprints for managing species and their habitats on a base so lands will be preserved for generations to come.

DoD integrates all facets of natural resources management, including hunting and fishing, commercial forestry and agriculture programs, outdoor recreation, and threatened and endangered species management with the military mission. Activities primarily focused to benefit one program component are planned to benefit other elements as well. For example, erosion control programs intended to protect threatened and endangered species habitat, or to prevent soil runoff into streams, also sustain management of critically important military training lands. These programs provide resource managers a better understanding of plant and animal life, ground disturbances, soil characteristics, and the land's ability to withstand training uses. By using comprehensive, integrated resource planning, DoD natural resource managers ensure that military mission requirements are met and threatened and endangered species are preserved.

In recent years, DoD has developed new management approaches to increase military training flexibility on the use of land inhabited by a threatened or endangered species. One approach is to manage natural resources as part of an entire ecosystem. Land management plans and species recovery plans are developed based upon a more complete understanding of resources and habitat throughout the region. The plans balance the responsibility for supporting endangered species among all major federal landowners. In addition, the plans ensure future development does not interfere with mission capabilities and is compatible with measures to protect endangered or threatened species. That's why we're moving to an ecosystem approach to managing our lands. At Camp Pendleton, this new approach is exemplified by the recent signing of the first multi-species programmatic agreement with the U.S. Fish and Wildlife Service. This agreement, which protects 14 riparian species, also allows the Marine Corps increased access to riparian and beach areas at Pendleton for training.

Detailed inventories have resulted in a lessening of restrictions on military operations. For example, at Nellis Air Force Range in Nevada, a focused plant inventory led to the discovery of a large population of a poppy that had been proposed for addition to the Federal endangered species list. The size of the population and the protection provided by the Air Force's management of the range resulted in a determination that the species need not be listed.

DoD's ecosystem approach to managing its natural resources considers groups of plant and animal species instead of relying on traditional management of single species. It promotes adaptive management sustainable for both human and ecological purposes. The Camp Pendleton example demonstrates how a heavily-used military base can

coordinate plans for military activities and management of ecological zones for numerous threatened and endangered species.

A similar effort to enhance mission capabilities and protect threatened resources is being undertaken in California's Mojave Desert. Most of DoD's large-scale unit training exercises and major weapons testing is conducted in the Mojave Desert. In the Mojave, our troops trained for Desert Storm. Located in the area are such major installations as the Army's National Training Center (NTC) at Fort Irwin, Marine Corps Ground Combat Center Twenty-Nine Palms, Edwards AFB, and Naval Air Weapons Center China Lake. DoD protects many natural resources on these lands that are significant to its long-term sustainability. All the Mojave installations are working to protect the current and future missions at the military installations located in the Mojave Desert by developing land management plans. As part of this effort, all major land owners in the region would contribute to the development of a scientific data base that will be used in preparing species protection and land management plans. This data base will provide land managers and military personnel a better understanding of the total desert ecosystem and provide greater flexibility in the use of the Mojave for military activities.

DoD funds used to manage and protect threatened and endangered species come from each Military Service's overall conservation budget or from special sources such as the Legacy Resources Management Program. DoD will invest approximately $150 million in FY96 for conservation programs to manage and maintain its training and testing areas. Only a small portion of this amount -- less than 15 percent -- is devoted to activities that affect endangered or threatened species or are required by the Endangered Species Act. Last year, DoD invested approximately $19.5 million in actions specifically designed to benefit these protected species. DoD's investment in conservation activities is primarily to support readiness training. Consequently, many activities attributed to the Endangered Species Act would be accomplished in any event in order to ensure effective training or testing.

In these times of shrinking budgets, federal agencies -- no matter what their mission -- must work together to share resources and information and implement management plans. No one agency can unilaterally solve today's environmental problems nor adequately protect species -- it requires a cooperative effort. I am extremely pleased to be here today with the directors and assistant administrators from the various federal agencies that share the Department of Defense's interest in protecting endangered and threatened species.

The military testing and training mission is compatible with the goals of environmental agencies. But it takes careful planning. The fact that threatened and endangered species have continued to thrive on our military installations is proof of this. Protection of threatened and endangered species has not hurt our military readiness and, in some cases, has even enhanced it. DoD's challenge is to continue to protect threatened and endangered species on military installations while we conduct increasingly realistic military training and maintain military readiness. DoD has risen to this challenge by

managing its 25 million acres through a comprehensive integrated stewardship program that ensures our activities do not harm threatened or endangered species. The proof of our success, therefore, cannot only be seen by thriving threatened and endangered species populations on military installations, but also by our high state of military readiness.

I would like to share with the Committee today a few of our many success stories in endangered species management. Eglin Air Force Base in northern Florida is home to the fourth largest population of endangered red-cockaded woodpeckers in the country. The Air Force has carried out both short-term, species-specific projects, and long-term, ecosystem-based actions that enhance the woodpecker's habitat. These actions include prescribed fires to control invading hardwood trees and promoting the regeneration of the longleaf pine forest upon which the woodpecker depends. Air Force units that train in the forests treat nesting trees as biologically contaminated sites or mines to avoid disturbance of the woodpecker. These techniques demonstrate how DoD is integrating the needs of an endangered species with those of the military mission.

The Army conducted a detailed review of natural resource plans for installations in the southeastern United States, focusing on the endangered red-cockaded woodpecker. In coordination with the U.S. Fish and Wildlife Service, the Army reviewed the plan, evaluated the viability of existing populations, and developed standard management guidelines for use of such tools as prescribed burns, protection of nesting trees, and control of hardwood understory growth. The habitat maintenance aspects of these guidelines are assisting installation resource managers to satisfy requirements of the Endangered Species Act.

In addition, we are currently consulting with the U.S. Fish and Wildlife Service to revise the training restrictions aspects within the management guidelines and the manner in which we determine red-cockaded woodpecker (RCW) population goals at Army installations. This initiative was undertaken in order to address concerns that the training restrictions outlined within the Army's guidelines were unnecessarily hampering training realism, particularly at Fort Bragg, North Carolina. On December 7, 1995, the Army and the U. S. Fish and Wildlife Service tentatively agreed to revised management principles that would enhance training realism on Army installations while conserving and even enlarging RCW populations on Army installations. The primary benefits of the agreement will be two-fold. First, the revised guidelines will reduce the total acreage of land subject to training restrictions at Fort Bragg and other southeastern Army installations. Second, endangered species management plans approved under the revised guidelines, with the U. S. Fish and Wildlife Service's concurrence, will provide freedom from training restrictions at some of the areas where the Army actively recruits and manages the growth of RCW populations in mission essential areas of an installation. We believe this agreement with the U. S. Fish and Wildlife Service strikes a reasonable balance between the training mission and conservation of the woodpecker. The Army and the U. S. Fish and Wildlife Service are continuing work on this initiative and hope to implement the new guidelines this summer at Fort Bragg and other Army installations.

This approach may have applications with other endangered species at military installations conducting intensive military training or testing activities.

The Navy is implementing management plans designed to protect endangered marine species. To protect the endangered West Indian manatee, managers at Naval Submarine Base Kings Bay, Georgia, worked to design a protective device that would prevent manatees from being injured or killed by ship propellers. After a prototype design was tested, the guard was found to be successful not only in protecting the manatee, but also in improving the efficiency of the tugboat on which it was installed. Because of the mutual benefit to manatees and naval operations, guards have been installed on all Navy craft (does not include ships) operating in the bay. This example highlights how the protection of a species can lead to other, unexpected benefits.

In some instances, DoD, in order to increase operational flexibility, has taken action to help a species thrive. These actions, while modest in cost, have been extremely effective. For example, efforts by the Marines to increase the number of mating pairs of the least Bell's vireo, an endangered songbird, have been so successful that the U.S. Fish and Wildlife Service has determined that the establishment of a critical habitat area is no longer warranted. In addition, the Marines have greater flexibility in their uses of sensitive lands, such as riverbeds, since the U.S. Fish and Wildlife Service has determined that, given the size of the vireo population, a few inadvertent takings would be acceptable.

Fewer than 700 Greenback Cutthroat Trout, native to the Arkansas River, remained in existence in 1978. Since 1981, Fort Carson, Colorado, in coordination with the U.S. Fish and Wildlife Service and the Colorado Division of Wildlife, has been involved in a recovery effort for this species, which is officially listed as threatened. In 1981, Fort Carson filed a change of use for an existing water right and constructed a broodstock pond for rearing the Greenbacks. Initially, 40 Greenbacks were transported to Fort Carson's pond. Eggs and fish from this pond have been used to establish reproducing populations within national forests. Due to the overall success of this recovery program, Fort Carson now has a limited catch and release program for this species that is sanctioned by the U.S. Fish and Wildlife Service.

DoD would not have the option of being a major player in these partnerships and interagency working groups had we not had years of responsible natural resource planning on our installations behind us. Knowing the challenges that exist when an agency must manage lands for several sometimes-conflicting purposes has enabled DoD to participate with land management agencies on an equal footing. The work of our natural resources managers at our installations forms the strong foundation for this increased conservation role.

DoD makes investments each year to ensure that missions can be performed with little or no impact on threatened or endangered species. DoD has been able to meet the provisions of the Endangered Species Act and at the same time conduct the necessary training and testing to be ready to meet any military challenge.

I would be happy to answer any questions from the Committee.

DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY OF THE ARMY
(CIVIL WORKS)

COMPLETE STATEMENT
OF
MAJOR GENERAL STANLEY G. GENEGA
DIRECTOR OF CIVIL WORKS
U.S. ARMY CORPS OF ENGINEERS

BEFORE THE

HOUSE OF REPRESENTATIVES
COMMITTEE ON RESOURCES

ON

IMPLEMENTATION AND ADMINISTRATION
OF THE
ENDANGERED SPECIES ACT

WASHINGTON, D. C.
APRIL 17, 1996

MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE:

INTRODUCTION

I am Major General Stanley G. Genega, Director of Civil Works for the U.S. Army Corps of Engineers. Thank you for the opportunity to describe the expenditures and associated activities of the Corps to conserve endangered and threatened species in connection with our Civil Works Program.

The Corps began to keep track of its national expenditures for implementing the Endangered Species Act (Act) during Fiscal Year 1989. The Department of the Interior, in response to the 1988 Amendments to the Endangered Species Act, requested that the Corps provide a species-by-species accounting of our expenditures in implementing our duties and responsibilities pursuant to the Act. I will summarize our responsibilities, expenditures to date, and then provide a perspective on four different regions of the country that have particularly significant and on-going issues involving Federally listed endangered and threatened species.

ARMY'S RESPONSIBILITIES

The Army, through the Corps Civil Works Program, carries out project related activities of planning, construction, operations and maintenance to implement the Secretary of the Army's authorities for navigation, flood damage reduction, environmental protection and restoration, and related purposes. The Corps also carries out the Wetlands Regulatory Program authorized under Section 404 of the Clean Water Act, the 1899 Rivers and Harbors Act, and the Marine Protection, Research, and Sanctuaries Act. The Corps has planned, developed, and currently maintains 12,000 miles of waterways; has constructed 8,500 miles of flood control levees and 383 reservoirs; and has constructed and operates 75 hydroelectric power facilities. The Corps has stewardship responsibility for nearly 12 million acres of land and water at over 460 projects.

The Corps Civil Works Program deals with the Endangered Species Act primarily in four functional areas: project planning; resource management at existing projects; dredging of Federally-maintained waterways; and, the operation of multipurpose flood damage reduction and hydropower projects. In these functional areas, determinations are made concerning whether consultation is required under the Endangered Species Act, and whether mitigation or conservation and other steps under the Act are appropriate.

In addition to these functional areas, the Corps carries out a regulatory program that provides the authority to the Secretary of the Army to regulate: dredging, structures and other types of work in navigable waters of the United States; the discharge of dredged or fill material into waters of the United States, including wetlands, under Section 404 of the Clean Water Act; and the transport of dredged material for the purpose of ocean disposal under Section 103 of the Marine Protection, Research and Sanctuaries Act. Compliance with the Endangered Species Act is required before issuance of any permit under our regulatory program.

FISCAL YEAR EXPENDITURES

The annual Corps response to the Department of the Interior has been standardized to include expenditures in the following categories: all costs related to consultation under Section 7 of the Endangered Species Act; all costs for Corps involvement in recovery teams and recovery plans; all costs associated with "incidental take" provisions issued with the Act's biological opinions; all costs incurred for studies, research, observers and monitoring required by the Act; and, all costs for mitigation. There are no regulatory program funds spent directly to administer, implement, conserve or protect endangered or threatened species. The Corps does, however, spend regulatory funds in evaluating and conditioning permits that support the conservation and protection of endangered and threatened species. These permit processing costs are included in the expenditure figures provided below.

In Fiscal Year 1989, the Corps expended $4,081,000 for activities relating to endangered or threatened species. Over 30 percent of that amount was for three species in the Corps South Pacific Division, primarily in California and Arizona. Those species were the Bell's least vireo, the California least tern, and the desert tortoise.

In Fiscal Year 1990, the Corps expended $8,081,000. Almost 50 percent of this was for three species in California.

In Fiscal Year 1991, the Corps expended $7,675,000. Of this, a total of $2,500,000 was spent for sea turtles and the red-cockaded woodpecker within the jurisdiction of the Corps South Atlantic Division and $1,400,000 was spent for the Bell's least vireo in California.

In Fiscal Year 1992, the Corps expended $30,168,000. The dramatic jump in costs reflects expenditures of approximately $13,000,000 by the Corps North Pacific Division on all matters related to the salmon crisis in the Columbia and Snake Rivers, Washington, Oregon, and Idaho; where several species of Pacific salmon had been listed as either threatened or endangered pursuant to the Act. This figure includes costs for fish passage facilities on the Columbia River that benefit endangered species. We would note that the juvenile fish passage program was initiated prior to the listing of salmon species. It should also be noted, that other species, not threatened or endangered (such as steelhead), also benefit from these facilities.

In Fiscal Year 1993, the Corps expended $33,960,000, of which the single largest cost was for litigation, recovery and resource protection activities related to matters involving Pacific salmon in the northwest ($21,600,000).

In Fiscal Year 1994, the Corps expended $51,866,000. Again, the single largest portion of this figure was allocated to matters involving the Pacific salmon in Washington and Oregon, where the Corps spent $40,800,000 on fish passage facilities and other measures to protect threatened and endangered fish as required

by the Act.

In Fiscal Year 1995, the Corps estimates that it spent approximately $95,000,000 implementing the Endangered Species Act. This is an estimate because Corps field offices have not yet reported detailed species-by-species expenditures used to prepare the formal Corps report to the Department of the Interior. The Fiscal Year 1995 estimate of expenditures for Pacific salmon alone is $83,000,000, due, primarily, to fish passage facility construction in Washington on the Columbia and Snake Rivers. It should be noted that about 73 percent of these appropriated expenditures are repaid to the Treasury by power users through the Bonneville Power Administration.

We estimate expenditures in Fiscal Years 1996 and 1997 to be $120,000,000 and $145,000,000, respectively, due largely to costs for construction and operation of the fish passage measures on the Columbia and Snake Rivers in Washington, Oregon, and Idaho. The Corps estimates that Fiscal Year 1996 expenditures on salmon will be approximately $ 75,000,000. In Fiscal Year 1997, we project salmon expenditures will again increase to approximately $ 107,000,000.

REGIONAL ACTIVITIES

I would now like to highlight four Corps activities, in four regions of the country, that have significant endangered species issues warranting discussion. In each case, the activity or project is complex and the endangered species of concern have high visibility on both a regional and national level.

PACIFIC NORTHWEST HYDROPOWER - SALMON

The Corps operates twelve mainstem projects in the Columbia-Snake River basin that provide hydropower, flood control, irrigation, fish and wildlife, water supply and navigation use. The dams also change river conditions, flows, and temperatures. These changes can adversely affect aquatic life, and create obstacles for migrating salmon. The Corps has mitigated for effects of the dams on fish and wildlife since Bonneville Dam was constructed in the late 1930s. Mitigation includes juvenile and adult bypass systems for migrating salmon at the eight Corps dams in the lower Columbia and Snake Rivers. The Endangered Species Act listings of the Snake River salmon in 1991 and 1992 have accelerated efforts to improve fish passage systems at these dams. A National Marine Fisheries Service biological opinion on the effects of hydropower system operation on listed Snake River salmon, issued in March 1995, includes recommendations for changes to project operations and the bypass systems to improve salmon migration conditions. A Corps Record of Decision documents the agency's intent to implement the biological opinion's measures to the extent possible.

Although there is much focus placed on improvements at the dams, other factors in the salmon life-cycle, such as quality of ocean and stream habitat and the effects of hatcheries and harvests, are also being addressed. Salmon habitat is diverse and geographically widespread, affecting many differing interests such as fishers, irrigators, shippers, recreational users, and power producers. Most interests in the region agree that healthy salmon runs are important to the regional economy and culture and much of the work ahead relates to the creation of a consensus on rebuilding stocks.

SOUTHEAST COAST NAVIGATION - SEA TURTLES AND RIGHT WHALES

The second Corps activity that I wish to highlight is the maintenance of the Federal coastal navigation system along the southeast coast of the United States. A 1990 study by the National Academy of Sciences, entitled "Decline of the Sea Turtles, Causes and Prevention," estimated that hopper dredges were killing as many as 500 loggerhead sea turtles and up to 50 Kemp's ridley sea turtles annually. Monitoring of channel maintenance activities at the Brunswick and Savannah, Georgia, ship channels from March through July 1991 documented the mortality of 38 sea turtles.

Following receipt of a regional biological opinion under the Endangered Species Act, the Corps South Atlantic Division issued policy guidance restricting hopper dredging in Southeast navigation channels to the period of December through March. An intensive research effort was also initiated to develop new technologies to protect sea turtles and to determine the seasonal distribution of sea turtles. In cooperation with the National Marine Fisheries Service, restricted dredging demonstrated that, in a 3 year period, a total of 20 million cubic yards of material were dredged from nine harbor projects with the unintentional taking of only one Kemp's ridley and eight loggerhead sea turtles. While these losses are unfortunate, it is substantially less than the number allowed by the incidental take provision in the biological opinion. Through our research effort, we have developed a hopperdredge draghead designed to deflect sea turtles. While not affecting dredging production rates, this deflecting draghead was 95 percent effective in deflecting artificial sea turtles during developmental testing.

The Corps sea turtle research effort is producing biological information in addition to the dredging effects results. Each turtle collected during the monitoring effort was measured, aged and tagged. Future recapture of these turtles will yield new information on sea turtle growth rates, behavior and distribution.

Another endangered species, the right whale, was found to be at potential risk during the December through March dredging window established for sea turtle protection. The offshore areas of northern Florida and southern Georgia are the only known right whale calving grounds in the north Atlantic Ocean. To protect the whales, the Corps has been conducting observation flights over these waters and, when right whales are sighted, dredge operators, enroute to an ocean disposal site, are instructed to reduce speed. Not a single right whale has been imperiled in over a thousand round trips to the disposal site. This interagency effort, dubbed the "Right Whale Early Warning System," is part of the recovery effort for the whale under the Endangered Species Act.

MISSISSIPPI AND MISSOURI RIVERS AND TRIBUTARIES - SHORE BIRDS AND STURGEON

Two shore birds given protection by the Endangered Species Act, the least tern and the piping plover, nest on bare sandbars and islands below Corps constructed and operated reservoirs in the Missouri River. In 1986, the year after these species were added to the endangered species list, the Corps began operating the Missouri River Mainstem Reservoir system to prevent flooding of these species' nests.

Formal consultation under section 7 of the Act was initiated with the Fish and Wildlife Service in 1987 and concluded in 1990 with the issuance of a "jeopardy" biological opinion. The Fish and Wildlife Service determined that jeopardy could be avoided through habitat creation, censusing and surveying nesting areas, public information and education, and scheduling reservoir water releases to avoid impacting the birds and their nests. The Corps has implemented these alternatives, and the effectiveness of these measures can be seen in the use of the Corps-created nesting habitat. As recently as 1993, the only least terns nesting below Gavins Point Dam were on 18 Corps-made islands, totaling approximately 125 acres. This represented an estimated 27 percent of the total adult least tern nesting population on the entire Missouri River system. Success has not been easy. While meeting the primary purposes of flood control and navigation, we have struggled to meet the bird productivity goals, (i.e., number of young fledged per nesting pair of adults) set forth in the Fish and Wildlife Service biological opinion. Our efforts have been made more difficult by period of drought and flooding. For instance, in 1995 high reservoir storage, coupled with large inflows resulted in the need to evacuate stored flood waters during the nesting season. Working with the Service, we collected approximately 350 eggs from the river, propagated the eggs, and released 220 chicks to the wild. This action allowed us to meet our flood control responsibility while minimizing mortality to the birds.

The pallid sturgeon, present in the Missouri and Mississippi Rivers, was listed under the Act as an endangered species in 1990. In May 1990 the Corps and the U. S. Fish and Wildlife Service entered informal Section 7 consultation regarding the Missouri River Master Water Control Manual Review and Update (Master

Manual Review), which was initiated in November 1989. The Corps made a determination that changing the water control plan "may affect" the interior least tern, the piping plover and the pallid sturgeon and initiated formal Section 7 consultation with the Service on December 8, 1993. Consultation with the Service continues as we proceed in reviewing and updating the water control manual.

GULF INTRACOASTAL WATERWAY - WHOOPING CRANE

A 30-mile portion of the Gulf Intracoastal Waterway in Texas, including a 13.25-mile reach within the Aransas National Wildlife Refuge, crosses designated critical habitat of the endangered whooping crane. Critical habitat is being lost at a rate of about two acres per year due to erosion caused by wave action and currents in the waterway. The Fish and Wildlife Service draft biological opinion states that vessel movement is the principal cause of whooping crane habitat loss in this area, and although vessel operations are under Coast Guard jurisdiction, the Service has looked to the Corps to resolve the problem. In the short-term, the Corps Galveston District participated in a volunteer-supported project to fill and place bags of dry concrete mix at critical areas along the shore. Also, about 9,300 feet of articulated concrete mat bank protection was constructed along one critically eroding area in 1992 and 1993. These two efforts successfully accomplished their purposes. The Galveston District is working with the Corps Waterways Experiment Station to develop bank protection projects utilizing material routinely dredged from the waterway. In addition to continuing the placement of concrete mat protection, ongoing feasibility studies by the Corps are examining the creation and restoration of approximately 1,600 acres of marsh for crane habitat, as part of the navigation project's Dredged Material Management Plan.

CONCLUSION

As is evident from the expenditures and examples provided above, it is clear that with the complexities of the Endangered Species Act, the public and private interests that become partners in implementing the Act, and the technical challenges facing the Corps, we will continue to devote significant resources to these issues. The Corps has been making diligent efforts, utilizing state-of-the-art equipment and techniques, to efficiently and effectively understand, protect and restore endangered species and the communities and ecosystems to which they belong.

Testimony of
Rolland A. Schmitten
National Marine Fisheries Service
National Oceanic and Atmospheric Administration
U.S. Department of Commerce

Before the
Committee on Resources
U.S. House of Representatives

April 17, 1996

Mr. Chairman and Members of the Committee: I am Rolland Schmitten, Assistant Administrator for Fisheries, National Oceanic and Atmospheric Administration, U.S. Department of Commerce, and Director of the National Marine Fisheries Service (NMFS). I appreciate this opportunity to discuss the amount of funds the National Marine Fisheries Service has used to conserve and recover listed endangered and threatened species under the Endangered Species Act (ESA), as well as the Agency's efforts to prevent species from declining to the point where they need to be listed under the ESA in the first place.

Funding

Starting with funding...in FY 1992, NMFS received a total of $8.5 million for ESA activities. Due to increased responsibilities, primarily the listing of salmon, the amount increased to $21.2 million in FY 1996. The Administration's funding request for FY 1997 ESA-related activities is $23.5 million. These funds are for the entire NMFS ESA program, including recovery, listing status and review, research and

enforcement activities. Attached to this testimony is a chart of NMFS' ESA funding history over the last 5 years.

The cost of recovery for some species may seem overwhelming, but this is a reflection of the peril faced by species at the time of listing. Most species come under the protection of the ESA when they are already endangered or threatened with extinction, so that recovery takes many years, even generations. However, even if unlimited funding were available, our goal should be to prevent species from becoming threatened or endangered in the first place.

However, NMFS is using every available resource it has to prevent the need to list marine and anadromous species. One of these resources is the Magnuson Fishery Conservation and Management Act (Magnuson Act). Through this Act, NMFS has a unique association with the fishing industry, constituent groups, states, tribal agencies and other Federal organizations also charged with the development of fishery harvest policy located in Federal or state waters. For example, in 1993, NMFS proposed to list harbor porpoise in the Gulf of Maine as threatened under the ESA primarily due to the large bycatch of this species in the Gulf of Maine gillnet fishery. However, since 1992 and prior to any determination regarding an ESA final listing, NMFS and the Northeast Fishery Management Council have been working together through the Magnuson Act and the current Marine Mammal Protection

Act (MMPA) take reduction team process to reduce bycatch to a level that is sustainable to the population and will not require that the species be listed.

The NMFS habitat conservation program also provides many avenues for promoting recovery and conservation. The recent National Research Council report on science and the ESA stated that protection of habitat is absolutely crucial to the survival and recovery of species. Without habitat protection, a species cannot survive, and it cannot recover. There is no alternative.

Each year, the NMFS habitat conservation program reviews and provides advice on thousands of individual actions that affect habitat. By being involved early in the planning process, NMFS can save valuable fishery and other living marine resource habitats. One important example is to use our authority under the Federal Power Act to require passage of fish around hydroelectric dams.

The NMFS Restoration Center guides NOAA's efforts to restore damaged and degraded habitats. The Center has had a number of well-recognized successes in a variety of important areas that support endangered and threatened species. For example, the Center coordinated the NMFS role as a Federal sponsor for wetlands restoration in Louisiana and last year completed a major coral reef restoration project in the Florida Keys.

Under the Marine Mammal Protection Act, NMFS takes action before ESA listing is necessary. For example, under the MMPA, a conservation plan has been developed for depleted northern fur seals which includes management measures to stem further declines. Similarly, an MMPA conservation plan for the northwest Atlantic coastal migratory stock of bottlenose dolphins is being developed. This stock of bottlenose dolphins experienced by a large die-off in 1987-88. An MMPA conservation plan for harbor seals in southeast Alaska is also being developed. That stock of harbor seals has shown a major population decline, and NMFS wants to identify and correct any problems before it becomes necessary to list the stock under the ESA.

Further, with congressional funding in 1994 and 1995, NMFS is developing criteria that may be used to delist or remove from endangered status many of the large whale species. Several endangered whales were listed as a result of commercial whaling threats. With the immediate threat of whaling gone, NMFS is reviewing the status of many species with the intent to propose a change in ESA status.

Gray Whale

The North Pacific population of gray whale was removed from the endangered species list after its population increased from fewer than 10,000 in the 1930s to 21,000 in 1994. I would like to emphasize that the recovery of the gray whale did not happen

overnight. It was a long process and certainly the MMPA and the ESA were crucial in preventing its extinction.

Disease Monitoring

Under the Marine Mammal Health and Stranding Response Act, NMFS is making an effort to detect potential problems before they become major issues. As part of this program NMFS is monitoring contaminant levels in marine mammals. The program has also been successful in detecting serious diseases in marine mammal populations before major epidemics occur. For example, phocine distemper virus has been found in east coast seals. Retrospective analyses determined that the disease has been present in the population for some time and that we are unlikely to see the type of epidemic that killed over 17,000 seals when the same disease was introduced into Europe in 1988. morbillivirus has been detected in dolphin populations off the Atlantic and Gulf coasts. Just this Fall, the first evidence of Morbillivirus was found in a dolphin population in the Pacific Ocean. We found evidence of exposure in four common dolphins that stranded in California. NMFS is currently sponsoring research on brucellosis in harbor seals in the State of Washington.

Take Reduction Teams

Under the 1994 amendments to the Marine Mammal Protection Act, NMFS is developing and implementing Take Reduction Plans

designed to assist in the recovery or prevent the depletion of stocks which interact with fisheries. Some fisheries interact frequently or occasionally with marine mammal stocks that are designated as endangered or threatened under the ESA, depleted under the MMPA, or whose level of human-caused mortality exceeds the stock's calculated Potential Biological Removal (PBR) level. Take Reduction Teams are producing plans that will lower the levels of mortality caused by incidental interactions between fisheries and marine mammal stocks.

Take Reduction Teams have been formed for 1) the Gulf of Maine harbor porpoise, 2) Atlantic offshore cetaceans (including right whales and humpback whales, both listed as endangered under the ESA), and 3) Pacific offshore cetaceans (including sperm whales, listed as endangered under the ESA). The Teams are made up of individuals who represent the span of interests and affected parties impacted by these decisions, including the commercial and recreational fishing industries, fishery management councils, interstate fishery commissions, academic and scientific organizations, state officials, native Alaskans or other Native American interests if appropriate, environmental groups, and NMFS representatives.

NMFS anticipates that the implementation of Take Reduction Plans will result in the immediate reduction of fishery-related incidental serious injuries and mortalities to below PBR for all

strategic stocks affected, and to insignificant levels approaching a zero mortality and serious rate within five years. This will aid in recovery efforts for listed stocks and prevent the fishery-related depletion of stocks which are in danger of being listed as threatened or endangered in the future.

Sea Turtles

NMFS and the Fish and Wildlife Service (FWS) share jurisdiction and responsibility for endangered or threatened sea turtle species. NMFS emphasizes conservation efforts in the marine environment while FWS focuses its efforts on nesting beaches. Due to the wide distribution and migratory habits of sea turtles, it is only through collaborative efforts with the southeastern coastal states and international cooperation such as we have with Mexico that we can hope to recover sea turtle populations. NMFS recovery efforts are much broader than the widely publicized TED requirements for shrimp vessels and include assessing impacts of long line fisheries and flounder trawling fisheries, support for research into a deadly disease causing tumorous growths on green turtles, and collaboration with the Corps of Engineers to reduce mortality from dredging activities.

Because of vigilant protection of nesting turtles and nests in Mexico and restrictions on shrimping activities in both our countries, the most endangered sea turtle, the Kemp's ridley, is turning the corner and its decline towards extinction is being

reversed. There is also encouraging evidence that the nesting population of green turtles in Florida is increasing. While the U.S. population of loggerheads, which is the second largest in the world, appears stable, we are gravely concerned about juvenile and sub-adult mortality from long line fisheries in the Mediterranean and eastern Atlantic. We are similarly concerned about impacts of Pacific long line fisheries on leatherbacks which are experiencing dramatic declines in the Pacific.

These examples demonstrate that persistent and strong conservation measures carried out in collaboration with other nations can effect sea turtle recovery but they also point out that there are still significant unresolved threats which require major efforts if recovery is to be sustained in the long term.

Salmon and the ESA

There have never been fewer salmon in the Columbia River basin than today. Although actions have been taken to halt the decline, it continues. Since the Snake River listings, NMFS has proposed to list several populations of coho and steelhead. Before these become final listings, NMFS is taking steps in cooperation with other Federal agencies to reduce the economic impact of the listings and achieve regional consensus on how to best proceed with conservation efforts.

For all Northwest salmon species, whether listed, proposed for listing, or candidates for listing, NMFS is using its resources to ensure better public participation, fairness, and certainty. To create partnerships, NMFS works closely with state and local governments, tribal groups, industry organizations and private property owners. In fact, when NMFS announced its proposed listing for coastal coho salmon populations, representatives of the Governors of California, Oregon, and Washington participated in the announcement and pledged the commitments of the three states to assume a lead role in developing state-based conservation strategies in partnership with Federal and tribal authorities. This conservation partnership is opening a new era that reflects many of the recommendations of the Western Governors' Association concerning the ESA.

Throughout the Pacific Northwest local "watershed councils" have been forming. These councils are generally driven by private citizens taking voluntary actions to improve salmon habitat.

Much of the salmon habitat in the Pacific Northwest is located on large tracts of privately owned commercial timber stands. Large landowners have the ability to make a real difference in a watershed through their land management activities. Also, they have the technical and financial

resources to conduct watershed analyses and develop comprehensive watershed plans.

Last Fall the Administration announced its "No Surprises" policy, under which landowners who develop an approved habitat conservation plan (HCP) for any threatened or endangered species will not be subject to later demands for a larger land or financial commitment if the plan is adhered to--even if the needs of any species covered by the plan increase over time. A landowner who agrees to provide for the long-term conservation of species in accordance with an approved HCP is assured that activities on the land can proceed without having any addition mitigation requirements imposed, except as provided under the terms of the plan itself. Species that are not yet listed are also being covered under the umbrella of an HCP and, if listed, the landowner, state or local government does not have to take additional protective measures if the species is already included in the HCP. One of the benefits is that it provides the predictability that the private sector needs.

Also, I am proud to report that NMFS and the Fish and Wildlife Service have coordinated development of HCPs to allow private landowners the advantage of one-stop shopping. Both staffs are located in one office in the Pacific Northwest and literally work side by side for efficiency and coordination.

NMFS is integrating conservation measures on Federal and non-Federal lands. The development of HCPs on non-Federal lands that supplement the protective conservation measures in place on Federal lands is central to this effort. NMFS fishery biologists work directly with HCP applicants to assess fish habitat and stream conditions on their lands, and assist applicants in preparing conservation plans, including both riparian buffers and road management strategies, that meet both the needs of listed, proposed or candidate species and the landowners. Currently, NMFS is working on about 35 HCPs that cover a land area of over 6 million acres.

Rather than wait until a species is listed to address potential adverse effects of land management activities, NMFS believes it is beneficial to incorporate conservation efforts early on. While NMFS can provide leadership as the Federal marine resource agency, from 50 to 90 percent of all the habitat of species proposed for listing is bordered by non-Federal lands, much of it consisting of private timber stands. Therefore, private actions must play a significant role in restoring the health of these species. Incentives, such as those provided by HCPs, are important to encourage landowners to participate in the recovery of species. The threat of an ESA listing with the resulting consequences should not be the driving force in enlisting this participation.

Recovery of Salmon

One of the most important undertakings for salmon in the Pacific Northwest will be the development and implementation of the NMFS Recovery Plan. Currently published as a proposed plan for which public comment has been solicited, this comprehensive document proposes to set forth a course of action that is intended not only to recover threatened and endangered salmon, but to create a management policy that will remove the need for further salmonid listings. The proposed Recovery Plan approaches the ecosystem as a whole. It proposes to include tasks that will have beneficial effects on all aquatic species in the Snake River system. The proposed Plan is based on principles of adaptive management which allows NMFS to continually update our approach as new information becomes available. New data will be applied to the benefit of all species sharing the Snake River system.

A Pacific Salmon Task Force operating out of Washington, D.C. is establishing overall policies and coordination for recovery. The task force highlights the President's concern that Federal coordination should focus on the urgent issue of salmon recovery. The task force will ensure that cabinet-level executives are not only informed, but involved with the efforts to restore Pacific salmon. One of the primary goals of the task force is to allay the states' concern over uncoordinated responses among the agencies involved.

Another group, the Pacific Salmon Coordinating Committee, operates on the west coast under the leadership of the NMFS Northwest Regional Director. This group coordinates and implements Federal efforts on the west coast. A Memorandum of Understanding that created the Committee recognizes that "intergovernmental" efforts include coordination with the states, tribes and private stakeholders. One of the most important goals of the committee is to find incentives for private landowners to become a part of the restoration effort.

The National Academy of Science's report on salmon confirms that our fundamental approach to Snake River recovery is solid and based on the best science available. Despite the political controversies and legal battles, NMFS has forged a proposed Plan that uses this science in a comprehensive manner as a foundation for its proposed recommendations, in keeping with the original intent of Congress in requiring recovery plans.

The people of the Pacific Northwest are proud of their abundant natural resources and have demonstrated through countless community projects their dedication to restoring the once legendary Pacific salmon runs. Given adequate information, technical assistance and funding, grassroots efforts to protect and restore salmon habitat can play a fundamental role in rebuilding this precious resource. Salmon is the icon of quality of life in the Northwest, and quality of life is one of the

important features of the economic engine of the west coast which makes the loss of salmon unthinkable.

Atlantic Salmon

Not all salmon recovery efforts are taking place in the Northwest. Currently, in the northeastern United States, NMFS is working on recovering Atlantic salmon which has been proposed for listing under the ESA jointly by NMFS and the Fish and Wildlife Service. One of our efforts is to work with the State of Maine on a conservation plan that addresses net pen aquaculture, recreational fishing, and agriculture impacts on wild stocks of Atlantic salmon.

Conclusion

Through partnerships with public and private groups and through the resources within our own agency such as the Magnuson Act and the Marine Mammal Protection Act, NMFS is using every tool it has to prevent listings and to recover those species that are listed. We plan efficient use of our ESA funding. Often, funds spent for a listed species also reduce the need for another species to be listed. Our participation in international treaties such as CITES and the International Whaling Convention facilitates U.S. efforts to recover species. We consider the effects of the actions of our entire agency on ecosystems and watersheds. In the long-term, these conservation actions will have a major beneficial impact on the economic, cultural and

recreational opportunities in every region of the nation. In the short-term, these conservation strategies can reduce economic impacts and increase certainty for private property owners, industry, and local, state and Federal government agencies. However, as much as I would like to say that we no longer need the ESA, there continues to be an unprecedented increase in extinction of species in this nation and throughout the world. On the other hand, I am encouraged when I can report to you about so many public and private groups that are dedicated to preserving their natural heritage.

Thank you, Mr. Chairman. This concludes my testimony. I will be pleased to answer any questions you may have.

NMFS ESA FUNDING CHART

	FY92	FY93	FY94	FY95	FY96*	FY97 (requested)
TOTAL ESA FUNDING	$8.5M	$8.8M	$8.6M	$17.0M	$21.2M	$23.5M
Species specific[1] programs, projects, activities, & salaries	$7.0M	$7.4M	$7.0M	$8.6M	$7.7M	$8.2M
Enforcement	$0.3M	$0.3M	$0.5M	$0.5M	$0.5M	$0.5M
Recovery--planning, implementation, & monitoring	$0.2M	$0.2M	$0.2M	$7.0M	$13.0M	$14.8M
Northwest salmon				[$4.0M]	[$10.0M]	[$10.0M]
Other listed species				[$3.0M]	[$3.0M]	[$4.8M]
Listing & status reviews	$1.0M	$0.9M	$0.9M	$0.9M	$0.0M[2]	$0.0M

* Based on continuing resolution funding

[1]Including, for example, Hawaiian monk seals, Hawaiian sea turtles, steller sea lions, Columbia River endangered species studies, Sacramento River winter-run chinook and protected species studies.

[2]Funding of $0.9 million included under species specific (see footnote 1).

STATEMENT OF
JACK WARD THOMAS, CHIEF
FOREST SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

Before the
Committee on Resources
United States House of Representatives

Concerning Forest Service Implementation and
Administration of the
Endangered Species Act of 1973, as Amended
Washington, D.C.
April 17, 1996

MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE:

Thank you for the opportunity to discuss how the Forest Service is implementing and administering the Endangered Species Act of 1973.

Background

As you know, the Forest Service conserves species and the ecosystems upon which they depend on behalf of the American people as directed by law and regulation. The Endangered Species Act (ESA) and the Resource Planning Act of 1974, as amended by the National Forest Management Act of 1976, are the primary laws we follow to protect species. The Multiple Use Sustained Yield Act of 1960 and the Resource Planning Act of 1974, as amended by the National Forest Management Act of 1976, in concert with the Endangered Species Act, define the breadth of our conservation responsibilities.

These laws require management of 191 million acres of National Forests and Grasslands to sustain a broad array of benefits. It is the interaction of these laws that act in concert with others that define and authorize the duties and actions the Forest Service takes to provide these multiple benefits.

Forest Service authority to manage for multiple uses is found in the Multiple Use Sustained Yield Act of 1960 which states that the Secretary of Agriculture is authorized and directed to develop and administer the renewable surface resources of the National Forests for multiple use and sustained yield. In addition, the Act states that

> "It is the policy of Congress that the National Forests are established and shall be administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes."

This is to be accomplished

> "without impairment of the productivity of the land, with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or greatest unit output."

The Endangered Species Act of 1973 was enacted 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 species and threatened species."

Section 7 of the Endangered Species Act requires federal agency consultation with the Fish and Wildlife Service and National Marine Fisheries Service to carry out species conservation programs to ensure that agency actions or prospective actions do not jeopardize the continued existence of any listed or proposed species for listing or result in destruction or adverse modification of any designated or proposed critical habitats.

The National Forest Management Act of 1976 requires the Forest Service to develop, maintain and revise plans for units of the National Forest System and

> "assure that plans...provide for diversity of plant and animal communities based on the suitability and capability of the specific land area in order to meet overall multiple-use objectives....

Taken together, these laws provide the basis and authority for the Forest Service programs I will now describe. Many, perhaps most, of the costs associated with carrying out the requirements of the Endangered Species Act are necessary to meet agency obligations under the Multiple Use Sustained Yield Act, National Forest Management Act and the cumulative effects provision under the National Environmental Policy Act.

Forest Service Programs

There are pitfalls in examining one Forest Service program separate from all Forest Service programs. In many cases programs cannot exist independently of others, and meet the multiple objectives and constraints of all applicable laws.

The threatened and endangered species program exists to assure protection and conservation of species (and the ecosystems on which species depend) while providing and contributing to the sustenance of other uses such as forage for livestock, trees for wood products, recreation opportunities for hunting and fishing, wilderness and bountiful clean water for on-Forest and downstream use. To this end, consideration for threatened, endangered and sensitive species is interwoven in all aspects of Forest Service activities.

There are four major administrative areas in the Forest Service --

the National Forest System, Forest Service Research, Private Forestry and International Forestry. Each area has responsibilities in implementing ESA.

The agency must meet the diversity of species goal in the regulations pursuant to NFMA. To that end, the Forest Service has a threatened and endangered species program (pursuant to ESA) and a sensitive species program (pursuant to NFMA and ESA.) In the budget, these programs are tracked as a single entity since many of the protection and mitigation measures, habitat restoration and enhancement projects, and research and inventory work overlap. Work conducted on any threatened, endangered, or sensitive species will also hold benefits for other species with which it is ecologically associated.

However, some portion of every program in the Forest Service is related to protecting species diversity and providing human benefits. These costs are part of achieving the Agency's mission as defined by law. These costs can not be easily separated nor tracked as a cost item attributable solely to sustenance of threatened and endangered species.

For example, the portion of the cost to control wildfires that benefits such species can also benefit other resources (such as watersheds and timber) or save facilities. Therefore, the costs I report today for the specific threatened, endangered and sensitive species program likely do not include costs for maintaining those

species reported under other programs such as range, fire, and forest pest management. In addition, because of the integrated nature of Forest Service work, we now have a budget line item for ecosystem planning, inventory and monitoring, which includes expenditures that may also benefit threatened and endangered species.

The Forest Service's threatened, endangered and sensitive species program goals are:

- To promote the recovery of listed species through habitat improvement, ecosystem restoration, and habitat protection.

- To prevent the need to list additional species under the ESA through management action and research.

- To coordinate with other resource areas, such as timber and range, to ensure sustainable production of commodities.

- To provide high quality conservation education to the public and users of the National Forests.

- To provide research to understand the needs of species and the impact of human activities and natural events on species and their habitat.

Our goal is to implement and administer the threatened, endangered

and sensitive species program in the most effective and efficient manner to meet agency objectives.

For instance, we have joined in partnerships with other agencies, private organizations and the public. In 1995, 55% of the stream inventories, 27% of the lake and terrestrial inventories, 21% of the structures built, 33% of the education presentations,and 50% of the interpretive sites constructed were partially funded from partnerships. Of 12.1 million dollars spent, 7.1 million dollars came from partners.

We have streamlined section 7 consultations under the ESA. This has been a cooperative effort between the United States Fish and Wildlife Service (FWS), National Marine Fisheries Service (NMFS), Bureau of Land Management (BLM), Environmental Protection Agency (EPA), and the Forest Service. Early involvement of these agencies in the planning phase of project development has led to shortened time frames for consultation which we expect will provide significant cost savings. This approach has been very successful. For example, in the Pacific Northwest, with few exceptions, informal consultations are completed in less than 30 days. Formal consultations are completed in less than 60 days. In FY 1995, consultations in western Oregon averaged 33 days. Nationwide, there is no known backlog in consultation, which is a major accomplishment in improving the efficiency of the Endangered Species Act.

Forest Service Research has also be . improving e veness and efficiency by designing research projects that enc.. .ss communities, landscapes, and ecosystems, as encouraged by the Endangered Species Act. There are many examples of research projects which have used this approach to generate scientific information to be used by the Agency for management purposes. For instance, the guidelines for the northern spotted owl have been expanded to accommodate the needs of over 1400 species associated with old-growth. Other examples are the goshawk guidelines which will provide for the protection of this sensitive raptor species as well as over 30 of its prey species.

In FY 1995, 20.5 million dollars have been expended to manage threatened and endangered species out of a total appropriated program of 23.6 million dollars which includes sensitive species protection. However, an additional 11.5 million dollars was spent to protect sensitive species from other programs as needed to implement forest management activities. Research costs for threatened, endangered and sensitive species were 9.6 million dollars. The specific threatened, endangered and sensitive species program comprises less than 5 percent of the Forest Service FY 1995 budget.

Accomplishments and Future Needs

The Forest Service has been successful in protecting and improving conditions for many threatened and endangered species throughout the United States and has been instrumental in focusing attention on international conservation efforts. With help from the Forest Service, the bald eagle, pergrine falcon, grizzly bear, eastern timber wolf, black-footed ferret, Puerto Rican parrot, red cockaded woodpecker, and greenback cutthroat trout have been brought back from the brink of extinction. Several of these species have been or are under consideration for being reclassified from Endangered to Threatened status.

It should be noted that threatened, endangered and sensitive species programs benefit not only species but also lead to other benefits for people through improved water quality and soil productivity, sustained economies through sustainable resources, enhanced recreation opportunities and preserved sources of genetic and raw materials for agricultural and industrial products, to name but a few.

About one-third of all species currently listed under the ESA exist on National Forests and Grasslands. As human population pressure and development increase, Federal lands will become increasingly important to the survival of threatened and endangered species.

Conclusion

Forest Service programs are moving toward an ecosystem approach to management of National Forests in order to better simultaneously meet the objectives set forth in the Multiple Use Sustained Yield Act, Endangered Species Act and the National Forest Management Act. I believe this approach is an effective and efficient way to achieve these objectives to best meet the needs of the public.

By maintaining or restoring ecosystems, the productivity of the land will not be impaired and the ecosystems upon which plant and animal species depend will be functioning properly. Thus the ecological foundation is in place from which multiple benefits can be derived over time. Without natural systems functioning properly -- these multiple benefits will be at risk. Investments made today will provide long term benefits in the future and will cost the public less in the long run.

This concludes my prepared remarks. I would be happy to answer any questions you may have.

STATEMENT OF JACK ROBERTSON

DEPUTY CHIEF EXECUTIVE OFFICER

BONNEVILLE POWER ADMINISTRATION

UNITED STATES DEPARTMENT OF ENERGY

BEFORE THE

U.S. HOUSE OF REPRESENTATIVES

COMMITTEE ON RESOURCES

April 17, 1996

Chairman Young, thank you for the opportunity to present the views of the Bonneville Power Administration (BPA) before the House Committee on Resources. I am Jack Robertson, Deputy Chief Executive Officer of BPA.

My statement today will include a brief discussion of BPA's history. I will also provide information to the Committee on the amount of fish and wildlife funds that are (1) appropriated to other federal agencies and repaid by BPA, and (2) spent directly by the BPA to administer, implement, conserve and protect endangered or threatened species or funding of efforts to prevent species from needing the protection of the Endangered Species Act (ESA).

Profile of Bonneville

Bonneville was created to market power from the Federal hydroelectric resources in the Columbia River Basin. Bonneville's operations are completely funded by revenues from the sale of energy and transmission services. Under the 1974 Federal Columbia River Transmission System Act, Bonneville deposits revenues from energy and transmission sales into the Bonneville Fund at the United States Treasury (Treasury), and is responsible for repaying the Federal investment in the Northwest hydroelectric system with these revenues. BPA does not receive annual Federal appropriations. The Federal investment which Bonneville is responsible for repaying does include investments made by other Federal agencies (Corps of Engineers, Bureau of Reclamation, United States

Fish and Wildlife Service (USFWS)) in hydroelectric facilities including measures designed to mitigate for Federal hydroelectric development damage to the fishery resource.

In 1980, the Northwest Electric Power and Planning Conservation Act (Northwest Power Act) was signed into law. That law, as well as other statutory directives, requires that Bonneville provide mitigation to the fish and wildlife resources damaged as a result of Federal hydroelectric development within the Columbia River Basin. The Act also establishes the Northwest Power Planning Council (Council), a body composed of two representatives from each of the states of Washington, Oregon, Idaho, and Montana. The Council is entrusted with the responsibility of developing a fish and wildlife program that protects and enhances fish and wildlife in the Columbia Basin. The Region's 13 tribes believe the program helps fulfill the United States' treaty and trust responsibilities. Bonneville is required to act consistent with the program developed by the Council. The Council has adopted a series of fish and wildlife programs, the most recent of which was adopted in December 1994. Consequently, Bonneville has fish and wildlife mitigation responsibilities that extend beyond those required under the ESA.

Prior to 1990, the Council program included significant measures designed to improve the health of salmon as well as other fish and wildlife. Despite these actions particular salmon stocks continued to decline. In 1990, the first petition for the listing of a Columbia Basin salmon stock was received by the National Marine Fisheries Service

(NMFS). By 1993, NMFS had decided to list three Columbia Basin salmon stocks as threatened or endangered: Snake River sockeye, Snake River spring/summer chinook and Snake River fall chinook. In addition, in 1994 the USFWS listed the Kootenai River white sturgeon as an endangered species. During the petition processes and following the listing decisions the Council developed new fish and wildlife programs that incorporated additional measures to aid salmon and sturgeon recovery. Starting in 1993, NMFS issued the first of several biological opinions identifying measures that are necessary to avoid threats to the continued existence of the species. There is significant overlap in the measures called for in the NMFS biological opinions and the Council program.

BPA Funding of ESA Related Activities

Since 1991, BPA's fish and wildlife expenditures have increased dramatically. These increases, along with dramatically decreasing prices from alternative electric power suppliers in 1994 and 1995, led BPA customers to consider buying electric power from entities other than BPA. In order to help assure a healthy BPA and a recovery of dwindling salmon runs in the Northwest, Administration officials developed a plan for identifying the actions necessary for the fisheries while limiting the exposure of BPA ratepayers to increasing fish and wildlife costs. Those discussions resulted in an October 1995 letter from Office of Management and Budget Director Alice Rivlin to Senator Mark Hatfield that established expected BPA funding levels for all its fish and wildlife mitigation responsibilities and fallback mechanisms should court orders lead to additional

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costs for BPA. Under that agreement, BPA will, over the next six years, provide an average of approximately $250 million per year in direct expenditures and will incur an average of approximately $183 million annually in power costs and foregone revenue. These annual power costs and foregone revenues could range from approximately $90-280 million depending on weather and water conditions and the prices of alternative electric power supplies.

The Administration believes that with these funds (1) adequate measures will be taken to protect ESA listed salmon and sturgeon stocks in the Columbia Basin, (2) the hydrosystem operations prescribed in the NMFS and USFWS opinions will be met, (3) the implementation of the Council plan will proceed unimpeded, and (4) BPA will be able to continue to repay the Treasury for Federal appropriations provided to other Federal agencies for fishery activities that mitigate damage caused by Federal hydroelectric facilities.

BPA's submittal to you of March 14 identifies estimated costs incurred by BPA that are required by the ESA. In addition, in an attachment, it identifies the total expenditure BPA is making for fish and wildlife activities under all its statutory obligations. These total costs, estimated to average $435 million over the six years, FY 1996 through FY 2002, are based on the Rivlin to Hatfield letter mentioned earlier and are consistent with the estimates provided to you by the Council. There are essentially three types of fish and wildlife mitigation actions that create costs for BPA. These actions are;

(1) operational changes to the hydroelectric system designed to increase river velocity or improve dam passage, (2) direct expenditures by BPA for measures such as fish hatcheries, (3) expenditures made by other Federal agencies for which BPA has the responsibility to repay.

It is important to note that in the absence of the ESA, many of the costs identified by BPA as required by the ESA might still be undertaken as a result of BPA's obligations under the Northwest Power Act or other statutes.

It should also be noted that the Administration has agreed that costs incurred by BPA, which should have been allocated to other non-power purposes, will be credited to BPA ratepayers. When BPA makes expenditures for fish and wildlife it does so on behalf of the entire Federal hydrosystem, including non-power purposes such as irrigation, mitigation and flood control. Yet, BPA ratepayers by law are not responsible for paying for costs associated with the non-power features of Federal hydrosystem facilities. The Administration agreement, therefore, also will lead to an approximate $60 million annual credit to BPA's payment to the Treasury. This further reduces the effect of fish and wildlife expenditures on ratepayers.

Conclusion

BPA recognizes that there are others variables involved in mitigation and recovery such as harvest, habitat and hatcheries. Others, such as fishermen, are also paying in terms of reduced catches, however, BPA believes the costs of fish and wildlife mitigation for the Federal hydroelectric system are appropriately borne by the beneficiaries of that system. The Administration is proud to have reached an agreement which should provide adequate funding to mitigate for damage done by Federal hydroelectric facilities to the Columbia River fish and wildlife resource, including threatened and endangered species within the system, while also limiting the exposure for Northwest ratepayers.

Mr. Chairman, this concludes my formal statement. I welcome any questions you may have.

TESTIMONY of the

NATIONAL WATER RESOURCES ASSOCIATION

Presented by

DAVID F. MAZOUR and WILLIAM T. PITTS

before the

HOUSE RESOURCES COMMITTEE

APRIL 17, 1996

Mr. Chairman, members of the Committee, thank you for offering us the opportunity of presenting our views on the Endangered Species Act and in particular costs to our members of ESA compliance. My name is David F. Mazour. I am the *Assistant General Manager* for the Central Public Power and Irrigation District and with me is William T. Pitts, member of the Colorado Water Congress. Together, we are presenting testimony in behalf of the National Water Resources Association. Currently we serve as Co-chairs of the association's ESA Task Force. NWRA is a national organization representing western water users in the 17 states. Our member organizations provide water services for municipal, industrial and agricultural uses. We seek to provide those services in an efficient and environmentally sound manner, taking in to account the needs of fish and wildlife.

NWRA supports the goals of the Endangered Species Act. Protection and conservation of all wildlife and in particular, threatened and endangered species is a worthwhile national goal. Cost effective and scientifically sound measures to protect endangered and threatened species are fundamental to an enduring program. Unfortunately, many are losing confidence in the Act because of the way it is being implemented. Many of our member organizations have been saddled with ESA requirements costing millions of dollars that have provided little or no benefit to the species. The root cause is that all federal actions are subordinated to the Endangered Species Act, including: granting of permits, licenses, loans, and operation of federal dams. The power granted to the U.S. Fish and Wildlife Service and National Marine Fisheries Service is virtually absolute. Science and cost effectiveness have taken a back seat to the power granted to federal agencies and field biologists. The present ESA does not require balancing of federal responsibilities, the application of sound science, or consideration of the economic or environmental impacts of actions to protect endangered species.

Mr. Chairman, our message today is a simple one. The Endangered Species Act can either be one of two things: a positive, constructive law that will permit economic activity to continue in this Nation side-by-side with threatened and endangered species, or it can be a law that impedes and thwarts economic activity at great costs to all Americans and still does not protect and conserve wildlife and its habitat, especially endangered species . From our perspective, the Endangered Species Act has fallen into the latter category.

The members of the NWRA represent an important economic sector of our economy. It is a sector of the economy that frequently comes into direct contact with the Endangered Species Act and its regulatory burdens.

The economic development of the Western United States has been based on the development of water for agriculture, municipal, industrial, recreation, wildlife, and hydroelectric generation. In many states the entire local or regional economy has been built around such projects. For example, in South Central Nebraska, my home, Platte River projects support a billion dollar agricultural economy that now is threatened because of the regulatory impact of the Endangered Species Act on federal relicensing to operate these Platte River projects in the future.

Mr. Chairman, attached to this statement are more detailed descriptions of not only the projects in Nebraska, but examples of the impact of the Endangered Species Act on major economic activities in Colorado, Idaho, Nevada, Utah, and Washington. These are just a few example, but ones in which major costs are being incurred in meeting the regulatory impacts of the Endangered Species Act.

In most of these cases, the regulatory costs are simply that: costs associated with hiring technical consultants, lawyers, doing studies and tests and responding to numerous government requests for information, data, reports and economic analyses. In other cases, large amounts of money are actually being expended on questionable activities as required by federal agencies. It is doubtful whether these expenditures are the most cost effective for protecting the species from possible extinction, increasing their numbers, or creating the type of habitat that will guarantee their continued existence. However, under the current ESA, federal agencies can require these expenditures without assurance of benefits to the species.

The members of the NWRA believe the Endangered Species Act can be rewritten in a way that will allow economic activities to continue but in a way that will protect and preserve threatened and endangered species and their habitat. A statute that promotes sound science and cost effective approaches to wildlife protection should be the goal of Congress and we urge this committee to enact such legislation.

Again, Mr. Chairman and members of the committee, thank you for the opportunity to share our views on the cost of compliance with the ESA.

Attachments:

COLORADO

The Colorado River Water Conservation District was "required" to commit to releasing 3,000 acre feet in three out of every five years, of water stored under state decrees for delivery approximately 200 river miles downstream to the designated habitat. Ostensibly, this is to be an interim use of the water to be returned to the River District after the F&WS acquires firm water elsewhere in the Colorado Basin. The 3,000 acre feet are currently valued at a subsidized price of $100 per acre foot for delivery in the Colorado River Basin. This results in a loss to the project of at least $300,000 three years out of five.

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Contact:	Rolly Fischer Secretary/Engineer
Address:	Suite #204 201 Centennial Street P.O. Box 1120, Glenwood Springs, Colorado 81602
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IDAHO

A November 9, 1995 National Marine Fisheries document summarized the estimated direct costs to the federal government for the proposed Recovery Plan for Snake River Salmon through the year 2001. This is just the first phase of a program that is planned to exist for at least another eight generations of the salmon (40-50 years), with costs likely escalating over that time. Many recovery tasks were identified as necessary, but because of the "adaptive management" concept, they were not defined nor established. The estimated U.S. Government agencies' costs were listed as $2.2 billion through 2001 and this does not include Bonneville Power Administration's foregone power revenues for bypassing flows for the benefit of salmon.

The upper Snake River Basin is required by the current Biological Opinion to annually provide 427,000 acre feet for flow augmentation and the Bureau of Reclamation is to attempt to acquire an undefined additional quantity of Upper Snake River Basin water for augmented flow purposes. However, in a fully appropriated system, water is available only when snow packs are above normal and the agriculture storage reservoirs are full. Both agriculture and salmon experience shortages in drought years. In short water years, augmented flows using Upper Snake River water can, in many cases, only become available by dry-year leasing or the idling of farm land.

As a result, the Bureau of Reclamation has estimated that the cost of acquiring 427,000 acre feet from the Upper Snake River Basin with 95% reliability is $294 million per year. This could result in the removal of 425,000 acres from irrigation and annual indirect (non-farm) impacts totaling $44 million. Acquiring the undefined additional quantity of water in the Upper Snake River Basin would of course entail higher costs. For example, the Bureau's estimate for obtaining 1.927 million acre feet with 95% reliability includes a federal expenditure of more than $1 billion, retirement of nearly 1 million acres, and indirect costs of $151 million per year.

There are other Endangered Species Act costs incurred but not included in the above estimates. The State of Idaho is expected to expend annually above $1 million to implement the Endangered Species Act. Water District 10 in the Upper Snake River Basin

encompasses about 1.2 million acres and expends about $100,000 annually for the Endangered Species Act. Finally, the North Side Canal Company, of Jerome, Idaho, expends almost $50,000 each year on Endangered Species Act concerns. There are four other states and three major water districts and over 50 major canal companies' expenses not included.

Name of Organization:	Idaho Water Users Association; and Northside Canal Company
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NEBRASKA

CNPPID & NPPD EXPERIENCES

The Central Nebraska Public Power and Irrigation District (Central) and the Nebraska Public Power District (NPPD) each own and operate hydroelectric projects in central Nebraska licensed by the Federal Energy Regulatory Commission (FERC). The two districts cooperate and coordinate project operations to facilitate beneficial uses. The districts' hydro systems include five hydroelectric plants with generating capacity of 126 megawatts. Both of the FERC-licensed projects are operated in conjunction with irrigation facilities not subject to FERC jurisdiction. The projects' irrigation facilities provide direct surface water irrigation to approximately 200,000 acres and groundwater recharge benefits to an additional 250,000 acres. Together with acres served by small irrigation companies under contracts with the two districts, more than 500,000 acres receive irrigation benefits from the projects' operations. Significant fish and wildlife habitat is provided by these projects and recreational use of the projects' facilities annually exceeds 1.5 million visitor-days. Through energy production, irrigation deliveries, recreational opportunities and wildlife habitat, the projects make a significant contribution to the economic well being of Nebraska.

The original 50-year FERC licenses were issued in 1937 and the districts have been operating under annual license conditions since 1987. Applications for new long-term licenses were filed in 1984 and an amended application was filed in 1990. FERC released a draft Environmental Impact Statement (EIS) in 1992 and a supplement to the EIS was later issued. A revised draft IS was prepared in 1994, subsequently followed by another supplement.

A lawsuit brought by an environmental organization in 1987 alleged continuing significant habitat loss for threatened and endangered species. It resulted in an order from the D.C. Circuit Court in 1989 that required FERC to consider "rough and ready" interim licensing conditions, if appropriate. FERC subsequently ordered interim license conditions for NPPD in February, 1990. Central sought voluntary amendments to its license in 1992, which included both flow and terrestrial components. FERC subsequently attached the conditions to Central's interim license.

An evaluation of the costs and benefits of the ESA requirements placed on NPPD are instructive.

FLOW REQUIREMENTS: NPPD was ordered in February, 1990 -- pursuant to a recommendation from the U.S. Fish and Wildlife Service -- to release water stored under contract in Lake McConaughy to meet a flow requirements at Grand Island, located 200 miles downstream. The water released began in late February, and continued until May 10 when the order was stayed. Approximately 70,000 acre-feet of water was released during this period to provide habitat for the endangered whooping crane. This water had been stored under state law for irrigation purposes. A three-year water loan was arranged between Central and NPPD, averting the potential for crop failure on up to 70,000 acres, which potentially would have resulted in losses of over $10 million to NPPD irrigation customers. The FWS has not provided any documentation of wildlife benefits from the 70,000 acre-feet of water that was released.

LEAST TERN & PIPING PLOVER HABITAT: NPPD was also ordered in February, 1990 -- again in accordance with a FWS recommendation -- to construct sand islands in the Platte River to provide nesting habitat for the interior least tern and piping plover, even though then-current biological information indicated that nesting habitat was not a limiting factor for the two species.

Least terns are endangered and piping plovers are listed as threatened. NPPD, through its own initiative, developed a more biologically sound and cost-effective alternative by managing sand pits adjacent to the river. While the three riverine islands required by FWS cost $27,000 per acre of habitat to construct, they have produced a total of only 21 fledged least terns and four piping plovers since 1991. A total of 117 least terns and 42 piping plovers fledged from NPPD's two sand pits during the same period. The cost for developing and managing the sand pits was $7,400 per acre of habitat. The managed sand pits have been less costly to develop and for more effective in fledging young of the two species. This is a prime example of federal biologists proposing more costly and less effective methods to conserve the species, while resisting the more cost-effective measures proposed and developed by the districts.

Name of Organization:	Central Nebraska Public Power and Irrigation District
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NEVADA

Newlands Project, Fallon, NV
Cui-ui Sucker Fish/ Pyramid Lake, NV
Approximately $4.5 million in legal and consulting fees (1975-1995)

The entire amount has been borne by the water rights owners of the Newlands Project. Additional attorneys' fees have been paid by the individual water rights owners, that sum being estimated to be in excess of $140,000. Other economic impacts resulting from implementation of the Endangered Species Act include loss of production, which can be estimated at $600 per acre of water not received. It is estimated that those production losses, coupled with the economic activity factor established by the University of Nevada, Reno, exceed $27 million (26,308 acres x $600 per acre x 1.72 multiplier factor).

TRUCKEE-CARSON IRRIGATION DISTRICT

In 1967 the United States listed the cui-ui lake sucker fish as endangered under the first endangered species law enacted and the predecessors of the current Endangered Species Act. The cui-ui is found in Pyramid Lake which is located within the boundaries of the Pyramid Lake Indian Reservation in the northwest portion of the State of Nevada. The Newlands Project has been blamed for the decline of the level of the lake and, subsequently the cui-ui. Since that time, the United States in conjunction with the Pyramid Lake Paiute Tribe has filed many litigations against the water right owners in the Newlands Project represented by the Truckee-Carson Irrigation District (TCID).

In 1987, the US modified the operations for the Newlands Federal Reclamation Project whereby storage in Lahontan Reservoir was reduced to 2/3 of its maximum capacity, a reduction of approximately 80,000 a.f. Lahontan is a reservoir that had been previously adjudicated by the federal courts in 1994 as having a right to storage of the full reservoir. What's more, Lahontan Reservoir had been paid for by the water right owners within the Newlands Project.

In 1994, the United States declared that the water supply forecast from January-April in Northern Nevada was 100%. The US Fish and Wildlife Service therefore requested a release of 100,000 a.f. for "attraction flows" in the Truckee River for the cui-ui. TCID objected to the forecast; the United States modified their forecast shortly thereafter, but after the release of the water for the cui-ui. That year, the water right owners in the Project received a maximum of 57% in the Carson Division of the project and 26% in the Truckee Division of the Project.

In 1990, Public Law 101-618 was passed by Congress. That legislation was touted as settling 80 years of litigation on the Truckee River; however, it didn't settle any litigation for the Newlands Project. It only prevented the water right owners from seeking judicial relief from arbitrary and unlawful operating criteria for the Project. (See 209(j)(2) of P.L. 101-618). The law, however, did provide for additional litigation:

- In 1993, the pyramid Lake Tribe filed approximately 2,000 lawsuits against individual water right owners within the Newlands Project.
- In 1993, the federal government administratively declared that 215 water right transfers that had been approved by the State Engineer of the State of Nevada were invalid. The Bureau of Reclamation ordered the Truckee-Carson Irrigation District not to deliver water to the users on these transfers. Only 25 had been sent back to the State Engineer for review; 190 transfers had never been determined by a court as being invalid.
- In 1995, the federal government took the position that the Newlands Project facilities could not be used by project water right owners to transport water that was privately acquired in 1943 and had been used within the Project previously. The United States had agreed to the use of the facilities in an agreement incorporated into the decree on the Truckee River. The Department of the Interior's "policy" statement was issued to ensure that diversions from the Truckee River would not be increased and less water allowed to flow to Pyramid Lake. The policy though does not recognize that the District purchased that water and increased the flow in the River by the release from Donnor Lake. So the Truckee River and subsequently Pyramid Lake would not be adversely affected by the diversion of TCID's privately-owned/stored water; in fact, there would be a net impact of zero.
- In 1996, the District was served with a lawsuit asking for the pay-back of 1,057,000 acre feet alleged to have been taken from Pyramid Lake. This litigation was authorized and sanctioned by Congress in passage on P.L. 101-

618. In fact, the public law even stated that water banking, which would be in the best interests of all parties in the Carson and Truckee River Watersheds, would not be allowed in Lahontan Reservoir by the District unless the "recoupment" issue was resolved to the satisfaction of the Pyramid Lake Tribe.

Name of Organization: Truckee-Carson Irrigation District
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Fallon, Nevada 89407
Phone: (702) 423-2141
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UTAH

Species: Woundfin Minnow and Roundtail Chub
Project: Quail Creek Reservoir

The Washington County Water Conservancy District has spent in excess of $1,000,000 in studies relating to the Woundfin Minnow and Roundtail Chub. This has all been local dollars. In addition, this species is impairing the ability of communities in Washington County to provide water for growth in a county that is the fourth fastest growing in the nation according to recent surveys. This project is also impairing development, management and conservation of existing water rights.

Species: Virgin River Spinedace Minnow
Project: Spinedace Cooperative Agreement

This project contemplates acquisition of instream flows in two stretches of streams within Washington County for the Virgin River Spinedace Minnow. The current estimate of costs to acquire this water is in excess of $4,000,000. The Washington County Water Conservancy District already has committed to this process over $1,000,000 for instream flows. The State of Utah and US Fish and Wildlife Service have verbally committed to raise $1,500,000 of the remaining $3,000,000 leaving another $1,500,000 to be raised from other local sources. This is for a species which has wide distribution throughout the Virgin River area, but without this cooperative agreement would have been listed.

Species: Desert Tortoise
Project: Translocation Study

A good example of excessive public costs of the Endangered Species Act is a recent translocation study being done in Washington County, Utah, for the Washington County Habitat Conservation Plan in relation to the desert tortoise. The cost of the study was reported to be $750,000. The study is designed to study 90 tortoises over a three to five year period. That works out in excess of $8,000 per tortoise for the study. This particular cost is being borne entirely by the federal government. The Washington County Habitat Conservation Plan for the desert tortoise is costing the local taxpayers in excess of $11,000,000. The plan authorizes the county to take 1200 tortoises. The local committed costs for the 1200 tortoises is over $9,000 per tortoise. In addition, there are land exchanges, purchase of land within the habitat conservation plan and impact of private property which has been estimated to be in excess of $200,000,000. The cost of its impact to state school trust lands is considerable and estimated to be in excess of $100,000,000. It has essentially made 1200 acres of school trust land set aside for the education of our children in Washington County completely worthless unless there is money set aside to purchase land or the land is exchanged out of the habitat area.

Name of Organization: Washington County Water Conservation District
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WASHINGTON

Types of projects affected:

The Columbia Basin Project, constructed by the Bureau of Reclamation, is designed to irrigate 1,095,000 acres. Facilities are in place to irrigate about 640,000 acres. These facilities are operated by the East Columbia Basin Irrigation District, the South Columbia Basin District. The listing of the Snake River sockeye salmon as endangered, the Snake River spring/summer chinook salmon as threatened and the Snake River fall chinook salmon as threatened has impacted the 3 irrigation districts both in our ability to fully utilize our existing facilities and in our ability to continue with planned expansion of facilities. It should be noted that the Snake River is a tributary to the Columbia, downstream of the Columbia Basin Project and that the listed species' spawning and rearing habitats are many miles away from the CBP.

The repayment contracts between USBR and the CBP irrigation districts and the Washington State water rights granted to the CBP authorize service through existing facilities to about 20,000 acres above what is presently served. This spring USBR directed the CBP irrigation districts to cease processing any contracts for this additional service. The basis for this moratorium was said to be to allow USBR to study the applicability of the ESA Section 7 consultation process to the insurance of further water service contracts.

The Snake River listings have also interrupted, and maybe ended, plans to expand existing facilities to provide additional irrigation capacity. The Columbia Basin Project published a "Draft Environmental Impact Statement for Continued Development" in September of 1989. The preferred alternative in the DEIS proposes to enlarge and extend the existing East Low Canal to serve an additional 87,000 acres in the East Columbia Basin Irrigation District. Much of the proposed service area is currently irrigated from a declining aquifer. This decline would be stabilized by introduction of a surface water supply and would prolong the economic life of this aquifer. Besides the irrigation development, the preferred alternative includes a number of wildlife habitat enhancement areas that would be added to the existing Columbia National Wildlife Refuge. The net water supply for the irrigation and wildlife development is estimated to be 216,000 af/yr. The water would be diverted from the Columbia River at Grand Coulee Dam where the average annual flow is about 87,000,000 af/yr. Current CBP diversions at this point are about 2,300,000 to 2,700,000 af/yr or about 3% of the river's annual flow. The additional water would divert another 2/10 of 1 percent. Total construction cost is estimated to be $313 million (for both irrigation and wildlife components). During late 1989 as the DEIS was being published and public hearings were being held, it was becoming public knowledge that regional tribes and environmental groups intended to file petitions proposing ESA listings for Columbia and Snake River salmon runs. The DEIS hearings concluded in December 1989 and the first of five petitions wasn't filed until April of 1990 but the ESA cloud was evident during the hearings.

The DEIS included an analysis of potential adverse impacts to anadromous fish because of the additional diversions. This analysis showed that the maximum adverse impact would be a 1/2 of 1% increase in mortality of juvenile migrants. The same analysis indicated in some cases survival would actually improve by about the same amount. This probably means that because of the small proportion of water being diverted the impacts were not measurable. During the hearings, tribes, fisheries agencies and environmental groups testified that any increase in juvenile mortality was not acceptable and that, in their opinion, the DEIS understated these impacts (but none offered data supporting their claims).

By June of 1990, 5 species (subspecies?) of Snake and Columbia River salmon were petitioned to be listed: Snake River (Redfish Lake) sockeye, Snake River spring chinook, Snake River summer chinook, Snake River fall chinook and Lower Columbia coho. In 1991 the National Marine Fisheries Service declared the sockeye to be endangered. In 1992 the Snake River spring/summer chinook and fall chinook were listed as threatened and the coho were declared extinct.

The Department of Interior determined that the CBP DEIS would need a supplement to address the anadromous fish issues raised about the September 1989 draft EIS and to address the ESA related issues. That supplement has been under preparation since mid-1990 was completed by 1993. The concept set forth in the supplement is to modify operations (releases) at Grand Coulee Dam in a manner to mitigate any impacts to mainstream flows from the additional diversions and to enhance juvenile salmon survival. In March of 1994, the Bureau suspended planning for any future development pending a resolution of the salmon issue.

Impacts:

The USBR moratorium on water service contracts has delayed several needed projects by third parties. Two pending contracts were to use CBP water for blending with potato processing plant wastewater so that it could be land applied as wastewater treatment. This type of treatment was being mandated by the State of Washington so the plants could meet water quality standards and improve surface water and groundwater quality in the CBP area. ESA is actually in conflict with another environmental goal in this situation. One of the other contracts was to switch sizable tracts of turf in city parks and school playgrounds from a groundwater source to a surface water source. The eastern portions of CBP are experiencing unsustainable groundwater declines because of over appropriation for agricultural, municipal and industrial purposes. Much of the water service contracting activity in this portion of the CBP during the past 10 years has been aimed at alleviating this groundwater decline.

Replacing this groundwater source is also a major objective of the expansion proposed in the DEIS. These problems are not yet resolved. At this point completing the EIS as been delayed for over 3 years because of ESA. The best we can hope for now is a total delay of only 4 years. The worst that can happen is that ESA will preclude any future irrigation development in the CBP.

Since the beginning of the anadromous fish problems with the DEIS (early 1990 to present) the East District has spent over 1500 man hours plus related expenses (travel, legal, consultants, etc.) now exceeding $55,000. The South Columbia Basin Irrigation District has played an active role in this issue and probably has experienced similar costs. The Bureau of Reclamation has borne the cost of preparing the studies to address this problem in the Supplemental DEIS and their costs are much greater but not available to us. So far, the CBP districts have not tracked their costs related to USBR's moratorium.

It is difficult to calculate lost opportunity costs. Some of the benefits expected to derive form the planned expansion are: $42 to $48 million of additional crop value per year, 2500 new jobs, 6000 additional population in the area, 76,000 annual recreational visitor days, plus improving the groundwater situation.

Amendments to ESA:

According to the National Marine Fisheries Service's interpretation of the species and subspecies definitions in ESA there are hundreds of separate subspecies of salmon in the northwest. This allows NMFS to blanket to the entire region with ESA enforcement by listing only one or a few salmon runs on specific tributaries. Sockeye and chinook are generally plentiful in the region but there are numerous separate runs in decline. ESA's definition of species, subspecies and distinct population groups need revisions to settle the "lumpers vs. splitters" argument.

The government should also be required to do a NEPA type balancing when considering ESA actions, whether for listing, critical habitat, recovery plans or consultations. The conflict here on the CBP between water service contracts to improve water quality or conserve groundwater vs. instream flows for salmon is a good example of the need for that.

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Testimony of

Joe Hunter, Executive Director

Colorado River Energy Distributors Association

Before the

Committee on Resources

U.S. House of Representatives

April 17, 1996

Mr. Chairman, thank you for giving the Colorado River Energy Distributors Association the opportunity to appear today to discuss impacts of the Endangered Species Act on consumers who are dependent upon electricity produced at federal hydroelectric facilities.

The Colorado River Energy Distributors Association, or CREDA, represents more than 100 consumer-owned electric systems in Arizona, Colorado, Nevada, New Mexico, Utah and Wyoming — systems which provide electricity to millions of consumers at cost-based, not-for-profit rates. Combined, CREDA members distribute more than 80% of the electricity generated by the Colorado River Storage Project (CRSP). The hydropower facilities of the CRSP consist of five federal dams on the Upper Colorado River and associated generators, transmission lines, etc.

My testimony today will be limited to our experiences with the Endangered Species Act in the Upper Colorado River Basin; however, I would say with a high degree of confidence that similar experiences and impacts can be found in virtually every region of the country served by electricity produced at federal hydroelectric facilities.

Implementation of the current Endangered Species Act impacts hydropower consumers in a number of significant and costly ways. As a general proposition, any restrictions or operational changes mandated for federal dams that have hydropower features will ultimately have an effect on the value and cost of the electricity that is produced, and consequently, on the businesses and individuals who use and pay for that electricity. Today, however, I would like to bring to the Committee's attention a couple of specific financial impacts on power consumers which are perhaps not as clearly or widely understood — and which relate directly to programs which fall under your jurisdiction.

As you know, Mr. Chairman, under the authorizing statutes of the Colorado River Storage Project, all costs of power generation and more than 90% of the costs of irrigation features of the project are "reimbursed" to the government through the sale of the power. In short, the Western Area Power Administration, who markets the hydropower, calculates all of the costs of power generation, as well as the irrigation and other costs allocated to power, and sets the rate for that power at whatever level is necessary to cover all of those costs. It doesn't matter how much power is actually produced or what the costs ultimately are; in the end, enough revenue must be collected from ratepayers to fully reimburse the government.

Historically, this financing mechanism has served its intended purpose: To repay the lion's share of the costs of the CRSP, while still providing a relatively economical source of electricity for growing regional economies. In recent years, however, costs have increased dramatically, while the hydropower resource itself has been steadily degraded. In other words, the electric cooperatives and municipal utilities CREDA represents have, over the past several years, been on a discouraging spiral of paying more for a less valuable resource.

While several factors have contributed to this spiral, there is no single cause that is as significant as the implementation of the Endangered Species Act. As you undoubtedly know, the Colorado River Basin is home to a wide variety of endangered and threatened species, and the costs of the federal government's efforts to protect and recover those species find their way into the rates consumers pay for electricity from several different directions.

First of all, whenever an effort is mandated to attempt to recover species which are dependent upon the river, the operation and impacts of the federal water facilities are among the first things that are examined for potential remedies. The clearest example of this is found in the ongoing recovery efforts for the Colorado River Endangered Fishes. Virtually all water use and development in the Upper Colorado River Basin is contingent upon the "Recovery Implementation Program for the Endangered Fishes of the Upper Colorado River Basin." Begun in 1988, this program seeks to identify and implement recovery actions that will benefit four species of endangered fish while allowing the Upper Basin States to utilize their legal allocations of the Colorado River.

Expenditures to date under this program have amounted to more than $40 million. Of that amount, more than $14 million has been funded directly from power revenues. More significantly, it should be noted that the program thus far has focused largely on research and planning related to even more costly activities in the future. Current estimates call for spending somewhere between $60 and $112 million through the year 2003 to actually implement the recovery program.

At this point, it is unclear how these sums will be obtained; however, I think it is safe to say that the most popular potential source of funding is the "so-called" cash register of power generation.

As impressive as these dollar amounts might be, Mr. Chairman, it is essential for the Committee to recognize that the real costs of these types of Endangered Species Act activities are found elsewhere. For example, the budget for the upper basin recovery program I just outlined only includes the costs of research, administration, and actually building or buying things. What that budget docs not include are the costs of reoperating dams and the resulting decreases in the value and amount of hydroelectric power that is produced.

Not surprisingly, much of the focus of ongoing and future recovery efforts is to change the way the dams on the Colorado River are operated in order to provide specific flows at specific times for the endangered species. It is ironic, but nonetheless accurate, to say that much of the research being financed in part by power consumers is geared toward identifying ways to sacrifice hydropower generation for the benefit of the fish. And while those sacrifices may or may not be appropriate from a biological or policy standpoint, it must be recognized that the resulting costs are very real and very substantial.

Given the way the Colorado River and many other rivers throughout the West are managed to meet water supply and other needs, when dams are used to manipulate flows, the result is often a reduction in the amount or value of the hydropower that is produced. Unfortunately, these operational changes do not reduce costs, thus leaving electricity consumers to pay more for less power. Compounding that cost is the fact that utilities have to replace the power generation and capacity that is sacrificed with resources that are often less efficient and more expensive. Again, that increased cost is ultimately borne by the consumer.

For example, for the past several years, Flaming Gorge Dam on the Upper Colorado River has been operated under a regime mandated by the Fish and Wildlife Service for the recovery of the

Colorado River endangered fishes. From 1985 through 1991, dam operations were altered in order to conduct research for the preparation of a Biological Opinion. The economic cost of the electricity not generated as a result of that research is estimated to be $5 million per year. Once the biological opinion was written and the dam's operation set accordingly, there has been a continuing economic cost of foregone generation of roughly $2 million per year. It should be noted that these amounts reflect estimates of the value of power not produced, and do not reflect the additional incremental cost of replacing that power from more expensive sources.

In short, they are conservative estimates, and any co-op or municipal utility manager who distributes CRSP power will tell you that the actual cost is significantly greater.

I should also point out, Mr. Chairman, that eleven years and $45 million later, we still don't know with any certainty how Flaming Gorge Dam will be operated in the future. It is reasonable to expect, however, that future costs will be at least as great as the current ones.

CRSP customers face a similar problem, with greater potential impacts, at Glen Canyon Dam. One of the products of recent years' environmental work at Glen Canyon Dam is a biological opinion calling for five years of research flows to assess the impacts of "steady flows" on the endangered fishes. Again using the value of lost generation, the projected economic cost of these research flows is about $79 million per year. If, in fact, as the Fish and Wildlife Service has requested, there are five years of these flows, the total economic cost is roughly $395 million.

What these examples illustrate is the fact that the true financial impact of the Endangered Species Act on the millions of consumers who depend upon hydropower generated at federal dams is far greater than the amounts you will find in agency budgets and appropriations bills. The value of hydropower is its capacity to provide electricity when it is needed. As the operations of these facilities is increasingly dictated not by water conditions or by consumers' electrical needs, but by research and other efforts carried out under the mandates of the Endangered Species Act, that value is lost. Society's need for the power, however, does not go away, and whatever we sacrifice in the form of clean, renewable hydropower has to be replaced — and that replacement costs very real dollars that ultimately have to be collected in consumer's electric bills.

Testimony of
John F. Stovall, General Counsel
Kern County Water Agency
for the
Association of California Water Agencies
Sacramento, California

Before the
Committee on Resources
of the
U.S. House of Representatives

Hearing on the Endangered Species Act
April 17, 1996

I

INTRODUCTION

On behalf of the Association of California Water Agencies' (ACWA) more than 450 public water agencies and mutual water companies that deliver 90% of California's water, I would like to thank you for the opportunity to discuss matters of grave concern to our agencies and their constituents, the people of California. California is the endangered species capital of the United States. Over 100 species are currently listed as endangered or threatened and 162 more will be listed in the near future. This overwhelming number has impacted virtually every aspect of California's economy. The Endangered Species Act (ESA), in its current form, creates significant difficulty and expense for our districts as they strive to meet the water and water-related infrastructure requirements of our state.

My name is John Stovall and I am the General Counsel of the Kern County Water Agency, one of the members of the Association of California Water Agencies. The Kern County Water Agency is one of the largest providers of water to both agricultural, and municipal and industrial customers of water in the state of California. By way of background, I am also the chairman of the Endangered Species Act Work Group of ACWA, the chairman of the Legal Committee of the State Water Contractors, an organization of local governments which contract with the state of California for water, and a member of the Board of Governors of the State Bar of California.

I am testifying today for the association because the Kern County Water Agency, the State Water Contractors, and the members of ACWA have found that the current

language of the ESA has led to significant impairment of our ability to meet the infrastructure needs of our constituents for water supply and flood control. We are very concerned that the ESA has caused costly delays and revisions in plans for construction of projects and imposed significant additional costs on existing projects and existing uses of land after decisions have been made and public funds have been invested. The true cost of the ESA is not the comparative pittance it costs to pay the enforcer; it is the regulatory burden imposed on the public by the heavy hand of the enforcer. In these cases, the "enforcers" are the United States Fish and Wildlife Service, the National Marine Fisheries Service, and their agents.

The decision to tax, assess or charge our constituents for public infrastructure is not one we take lightly. We are sure you understand that the decision to exact funds from constituents is one of the most difficult elements of the democratic process. Before doing so, it has been the practice of our members to carefully consider the benefits to be derived from a project, and compare those benefits to the costs involved. The impact of the ESA is exceptionally onerous to us when we have performed this analysis in the past, and concluded the project is worthwhile for public investment, only to learn that requirements imposed by administrative edict under the ESA significantly raise the cost.

A further difficulty arises currently because it is virtually impossible to accurately assess the cost of future ESA compliance even if an agreement is reached with the enforcement agencies. While a negotiated resolution may be struck regarding existing species on the list, many of our members believe that they are always susceptible to new demands based on species listed after an investment is made. In some instances, species have even been pitted against each other with measures required to protect species that harm other species.

The following testimony illustrates to you the impacts on the cost of our projects, and some of the activities of our constituents. We will first address the impacts on a little known flood control project which has been in existence for decades. We then turn to the impact on water supply and costs utilizing the State Water Project, a project which was constructed in large part before the ESA was passed, most of it before any of the current species of concern were listed. Next, we will examine other examples of water district impacts and impacts on constituents throughout the state where the cost of projects has been exacerbated by ESA requirements. Finally, we suggest to you some potential solutions in an attempt to break the seeming impasse which has developed on the issue of reform.

We continue to believe that it is possible to craft Endangered Species Act reform which continues to provide protection to species while protecting the ability of State and local governments to serve the needs of their citizens. We also believe that an ESA

which provides for cooperative and reasonable solutions would ultimately better serve our environment by avoiding the hostile backlash to all environmental concerns that we have observed in the western states. Our challenge is to break through the rhetoric of confrontation and achieve a solution which meets the needs of people and the needs of our environment.

II

COST/BENEFIT, FLOOD CONTROL & THE ESA

One of the elements of public infrastructure most sensitive to cost/benefit analysis is flood control. Other committees of this Congress, of which many of you may be members, are familiar with the agonizing public policy decisions which must be made in the flood control arena. As we seek to spend the public's money wisely, we must balance the benefits of such projects with the costs. A problem has arisen regarding the ESA as applied to these projects. It is not possible now to accurately assess the costs of flood control projects since new costs may be imposed by ESA enforcement agencies many years, even decades, after the projects are put in place. The example I will discuss here is my agency's Kern River Intertie project, built many years ago with the Corps of Engineers.

Kern River Intertie

The Kern River Intertie (Intertie) was constructed in the 1970s in Kern County to allow the flood waters of the Kern River to be partially channeled into the California Aqueduct to prevent flooding of farmland downstream of the Intertie. The essential elements of the Intertie facility are a gate structure to control flood flows into the California Aqueduct and a settling basin upstream of the gate to prevent undue sediment from being washed into the aqueduct. The project was accomplished with the assistance of the Corps of Engineers and for many years was routinely maintained under contract with local water districts pursuant to our contract with the Corps of Engineers, and in accordance with federal regulations. Those federal regulations required, among other things, removal of vegetation showing on levees and in the settling basin. In 1993, the maintenance of this flood control project became anything but routine.

Unknown to the Kern County Water Agency (the Agency) or to the water districts that had contracted with us for maintenance, Fish & Wildlife Service agents with assistance from California Fish & Game were eyeing the Intertie property. Following routine maintenance of the property, including discing for vegetation, agents appeared at our headquarters asking for permission to inspect the property. We later learned that they

had already been on the property to investigate. Having nothing to hide, and not thinking we had anything to fear, we allowed them to do so. It was not the end of the story.

The Agency then received letters form an Assistant U.S. Attorney claiming the Agency had violated the ESA and threatening prosecution. The Agency was forced to spend tens of thousands of dollars in defense of allegations that a tractor driver hired by a local water district had run over Tipton Kangaroo Rats, a species listed under the ESA. Demands were made for 150 acres of mitigation land and hundreds of thousands of dollars in penalties. Believing the charges were unjustified and the demands unfair, we chose to investigate ourselves and discovered numerous problems with the case alleged by the government. We found that eve if rats had been run over (itself subject to some question), they were probably of the "short-nosed" variety, an unlisted species. In any event, the tractor driver was certainly unaware of any damage to rats as were the districts performing the maintenance. The Agency was unaware that the maintenance was even underway at the time. Yet, the Agency was still singled out as a defendant.

When presented with results of the Agency's investigation, the Fish & Wildlife Service agreed to reevaluate its position. To date, the United States has not filed an action against the Agency. We remain uncertain over how maintenance of the Intertie and concerns about the Tipton Kangaroo Rats will be resolved.

The additional costs imposed on this project could still be drastic, and we are taking some risk in exposing this incident to you. In our view, however, it is critical that you be aware of how this act is being unfairly enforced. This project was routinely maintained for more than a decade in conjunction with the Corps of Engineers' requirements. Now, because of the ESA, this project has been threatened with hundreds of thousands of dollars in costs. We have incurred almost $100,000 in legal defense costs, and we are still threatened with the extortion of 5 acres of land for every acre on which enforcement agents assert rat habitat exists. Had we know of these problems before the project was built, it would never have been built. As it is, we have no choice but to pass the costs imposed on to the farmers downstream who thought they were being protected.

III

WATER SUPPLY IMPACTS AND THE STATE WATER PROJECT

REDUCED WATER SUPPLY/INCREASED COSTS

As a clear-cut example of the water supply costs imposed on California water agencies by the ESA, I would like to discuss with you the impact on deliveries and costs of the State Water Project (SWP). The State Water Project in California is a system of water conservation and transportation facilities which provides water for more than 20 million Californians, most served by the Metropolitan Water District of Southern California, and hundreds of thousands of acres of the most productive farmland in the world. It extends from Oroville in the north where the excess waters of the Feather River are stored for use, to the reservoirs of Southern California where water is stored for use by the 20 million residents of that area. Between the two, the Kern County Water Agency (the Agency) accepts water from the California Aqueduct to serve hundreds of thousands of acres of productive farmland and residents of Kern County from Taft on the west to Tehachapi on the east. Most of our municipal water is provided to the Greater Bakersfield area, a community in excess of 300,000 people. Twenty-nine other public agencies have contracted for a water supply from the SWP.

Construction of the SWP was begun during the early 1960s, having been planned for many years prior. After approval by the state legislature and the voters of California, the construction of its conservation facilities and hundreds of miles of aqueduct began. Deliveries to the Kern County Water Agency started in 1968 - years before the Endangered Species Act was passed.

One of the prime concerns of the developers of the project was whether agriculture could afford to pay the anticipated costs. The project without agricultural participation would not have been prudent from a cost/benefit standpoint. Even today, the cost of water from the SWP is critical to the viability of agriculture in the central valley of California. Cost is also important to the people of Southern California. The ESA has significantly contributed to elevating the cost of water from this key project.

Let me describe for you the impacts which the SWP experiences under the negotiated Bay-Delta Accord (Accord), and compare those to the demands which were made by wildlife agencies prior. This is important because, while we support the Accord, we are very concerned about potential demands for water when the Accord terminates. The SWP shares a number of facilities including certain sections of the California Aqueduct, and the "south of the Delta" storage facility, known as the San Luis Reservoir, with the Central Valley Project. Together these projects account for approximately 30%

of the states water supply. They coordinate their operations under a coordinated operations agreement (COA). A precise determination of the split of the losses imposed by the ESA is difficult because of the variables involved, but a rough estimate of a 50/50 split suffices.

The 1994 Accord modifies a prior state water quality standard to provide for ESA implementation. It provides 400,000 acre-feet of additional water for the Bay-Delta in average years; one million acre-feet in drought years. The measures contained in the agreement are intended to provide sufficient habitat protection for currently listed endangered and threatened species and to create conditions in the Bay-Delta that avoid the need for any additional listings under the ESA for three years. Estimating the dollar cost of this lost water is both difficult and inadequate in that it cannot measure the human costs to the people affected. Applying the rough value estimate of $100 to $200 per acre-foot in a dry year, the cost is approximately $100 to $200 million if that replacement water can be purchased at all. If it cannot be purchased from other sources, as may be the case in critically dry years, the costs would be even greater.

These losses are less, however, than those demanded by the wildlife agencies at the outset. During the negotiations their demands were for 800,000 acre-feet in normal years, and two million acre-feet in critically dry years.

Under the 1994 Accord, if federal agencies determine additional water is necessary to protect endangered species not listed, the federal government has the responsibility for acquiring water through voluntary purchases financed with federal funds. The accord provides temporary relief from the punitive effects of the ESA, but the act still needs to be reformed to prevent the serious impacts described below from occurring in the future. It must be emphasized that the relief afforded to California water agencies and their constituents dependent on the SWP will end in 1997, and we anticipate that wildlife agencies will be demanding additional water at our expense.

In the two years prior to the signing of the Accord in December 1994, when the winter-run Chinook salmon and the Delta smelt were listed under the ESA, the effect of protective measures was to reduce the amount of water available for export from the Delta to state and federal water customers. During these two years, the state and federal water projects' Delta pumping operations were conditioned on "take" provisions under ESA, which limited the number of listed species that could be lost to the pumps. The water losses for both projects totaled one-million acre-feet in 1993 and 1.3 million acre-feet in 1994. Again, it is difficult to estimate the value of such losses. but using the values derived in the recent drought market, the value of the water lost can be estimated at $100 to $200 per acre-foot had the water been stored for dry years.

As an ironic anecdote, on February 23, 1993, just six hours after Governor Pete Wilson declared that California's prolonged drought had ended, the SWP pumps were shut down for 10 days to allegedly protect winter run salmon smolts, although the evidence that the smolts were "winter run," rather than an unprotected variety, was virtually non-existent.

I have spoken here about the SWP because that is the project of which I am most familiar. However, the impacts on the CVP and its contractors have been equally significant.

These impacts are sever, but by no means the only impacts of the ESA in California. The following are some additional examples of regulatory costs imposed on existing projects in California as a result of the Endangered Species Act.

IV

URBAN AND AGRICULTURAL IMPACTS OF ESA RESTRICTIONS

Eastern Municipal Water District (Riverside County)

About 144,000 acres, or more than 40%, of Eastern's service area is now designated sensitive habitat to protect various plant and animal species listed under the ESA. The recent listing of the California orcutt grass and the expected listing of the San Jacinto saltbrush will designate even more acres. Twice in recent years, the district had to re-route pipelines to accommodate listed plant species discovered just before or during construction. In one case, the plant in question was a grass detectable only in May and June. Months of negotiations with the U.S. Fish and Wildlife Service and other agencies delayed construction and resulted in more than $600,000 in additional project costs.

Kern County Water Agency

Facing dramatic cuts in surface water supplies during the recent drought, KCWA sought to drill ground water wells to save crops dependent on imported water. While carrying out required wildlife surveys and a biological assessment, the district found burrows potentially belonging to endangered Tipton kangaroo rats. A special study was required to determine whether the burrows were used by Tipton rats or Hermani kangaroo rats, which are not endangered. After securing necessary permits and a qualified biologist to trap kangaroo rats, the district was delayed because trapping cannot take place during a waxing or full moon. Rains further delayed the trapping, and more time was lost when

the district could not get an appointment with the U.S. Fish and Wildlife Service. In the end, the district lost three months in drilling the wells, spent $24,000 on the biological assessment and $3,700 in mitigation fees.

City of Santa Barbara

Plans to enlarge and reinforce Santa Barbara's Gibraltar Dam had to be canceled because of potential effects on habitat of the least Bell's vireo, an endangered bird. The cancellation cost the city some $3 million in construction expenses, lost revenues and costly alternative water sources.

Joshua Basin Water District (San Bernardino County)

Plans to extend water service lines to about 400 households, primarily retired people, were derailed by requirements to protect habitat of the endangered desert tortoise. Construction was delayed, and the district spent more than $1.5 million as the federal Bureau of Land Management and state Department of Fish and Game wrangled over who should own and manage 388 acres set aside by the district for the tortoise.

In the meantime, the 400 households had to have their water supplies trucked in. Extensive delays and prohibitive costs of complying with the ESA left frustrated district officials with little hope of resolving the matter and may prompt them to abandon the project.

Desert Water Agency (Riverside County)

A pipeline construction project ran into delays and additional costs due to snags involving the habitats of three endangered species. The pipeline had to be re-routed to avoid Coachella Valley fringed-toed lizard habitat, adding $100,000 to the cost of the project. Then construction was ceased for several months during the mating season of the peninsular big horn sheep, and design modifications were made to accommodate the sheep. The agency again had to delay the project to undertake a study of the Coachella Valley milkvetch plant, which, it turned out, was not present in the project area. In the meantime, all-terrain vehicles and motorcycles continued to impact lizard habitat in the same area the agency was forced to avoid with its pipeline.

Kern County Agriculture

The ESA has also had significant adverse effects on agriculture in the San Joaquin Valley. Kern County has been particularly hard hit.

In a case that attracted national attention and sparked cries for ESA reform, bamboo farmer Taung Ming-Lin faced criminal prosecution last year after discing private agricultural land inhabited by endangered kangaroo rats. State and federal wildlife agency officials searched Lin's property in February 1994 and confiscated his tractor and disc. Lin said he was not aware there were endangered species on the 723 acres he purchased in 1991. The case was ultimately dropped for a nominal settlement after numerous hours of attorney time had been expended.

Recently, another case involving attempted farming of land in the San Joaquin Valley resulted in payments of tens of thousands of dollars by Valley Communities, Inc. In this very recent case, we are unaware of the precise details.

V

REASONABLENESS AS A REFORM

"Reasonableness" can be defined as taking into account all aspects of a situation in reaching a balanced decision. It also demands good science, public review and due process. The requirement of reasonable action is spread throughout the law, but it is strangely lacking in certain unbalanced provisions of the Endangered Species Act. For example, reasonableness demands consideration of the effects on projects or uses which wee in existence before a species was listed, yet the act treats all projects and uses alike whether begun decades ago or tomorrow. Reasonableness demands consideration of whether equivalent results can be obtained with protection plans which are less damaging to other species or humans, and yet the act allows administrators to simply demand what they want. Reasonableness demands that we should at least know what the impacts of our actions are on humans, and yet the act does not even require us to examine and record what those impacts are, much less balance them[1]. Where agreement has been reached and investments have been made, reasonableness suggests that federal agencies should not be allowed to demand further land or water, yet those now entering agreements with the federal government are never certain that more penance will not be demanded as new species are listed.

[1] While consideration is technically required at some points, wildlife agencies have asserted that all economic impacts occur at the listing stage when take prohibitions apply and that subsequent impacts are minor.

ACWA has developed a brief but succinct list of pints which we consider critical to successful ESA reform. These points are as follows:

1. Water rights should be respected.

2. Ecosystem conservation approaches should be encouraged rather than a single species approach (protecting against demands for newly listed species).

3. The unfunded mandates imposed on state and local governments should be resolved by federal funding of costs imposed.

4. Economic analyses should be done at all stages so that we will know what the true costs of ESA regulations are.

5. The regulatory process should be re-engineered to provide administrative streamlining and good science, complete with peer review, to avoid delay and red-tape.

6. Exempt reasonable operation and maintenance of existing public facilities and other important existing uses, such as agriculture.

We believe that these changes can be achieved with no real loss of protection for species. In fact, cooperative partnerships between the federal government and state and local agencies are possible if some of the fear of future unanticipated loss is removed. We look forward to working with you and all those interested in reasonable reform to achieve an Endangered Species Act which not only improves our environment, but allows local governments to provide for the needs of their constituents without undue interference by the federal government.

ASSOCIATION OF CALIFORNIA WATER AGENCIES

ENDANGERED SPECIES ACT POSITION POINTS

The Endangered Species Act (ESA), passed by Congress in 1973, provides for the conservation of endangered and threatened species and their habitats.

At the time of its passage, few suspected that more than a thousand species would end up being listed under the Act. Moreover, only a few listed species have recovered to the point of being delisted. Recovery plans required under the Act are not developed promptly. Listed species often require significant changes in local and regional economic systems which may take years to effect. These facts and the fact that many additional species may be listed in the next few years, indicate that the Act is having a far greater impact than originally contemplated, and is specifically not working well to protect listed species.

The ESA is currently up for reauthorization in the 104th Congress. The following position points are items that ACWA believes should be addressed during the reauthorization process. The following position points are listed in priority order.

WATER RIGHTS SHOULD BE RESPECTED

- The ESA should clearly state that it does not supersede compacts and decisions of the U.S. Supreme Court in allocating water among states.
- The ESA should clearly state that where water is needed to protect, recover, or maintain listed species, federal resource agencies should follow state water law to obtain it.
- Section 7 consultations on federal water projects should not result in termination of water contracts of existing contract holders.
- First priority for recovery plans and critical habitat designations should be for plans that use land owned by the federal government.

ECOSYSTEMS APPROACH NEEDED

- Multi-species habitat conservation planning should be encouraged, eliminating the need for species-by-species listing and mitigation requirements for individual species within conservation areas.
- Where habitat conservation plans are approved by the appropriate federal agency, the approval shall constitute an incidental take permit for all covered species listed or unlisted. On a subsequent listing of an unlisted species, the only action which the appropriate federal agency may take is to ensure compliance with the plan.

UNFUNDED MANDATES

- The ESA should appropriate federal funds to assist the development of cooperative management agreements with state and local governments and local organizations.
- Where Section 10 permitting or Section 7 consultation interferes with existing uses of property or water rights or require dedication of land, there should be federal cost sharing with local governments or local property owners affected.

ECONOMIC ANALYSIS

- The economic impacts, including compliance costs, of listing a species should be determined by requiring the U.S. Fish and Wildlife Service and National Marine Fisheries Service or other appropriate federal agencies to develop an economic impact report covering the entire geographic area economically affected by the proposed listing, the recovery plan and the critical habitat decisions.

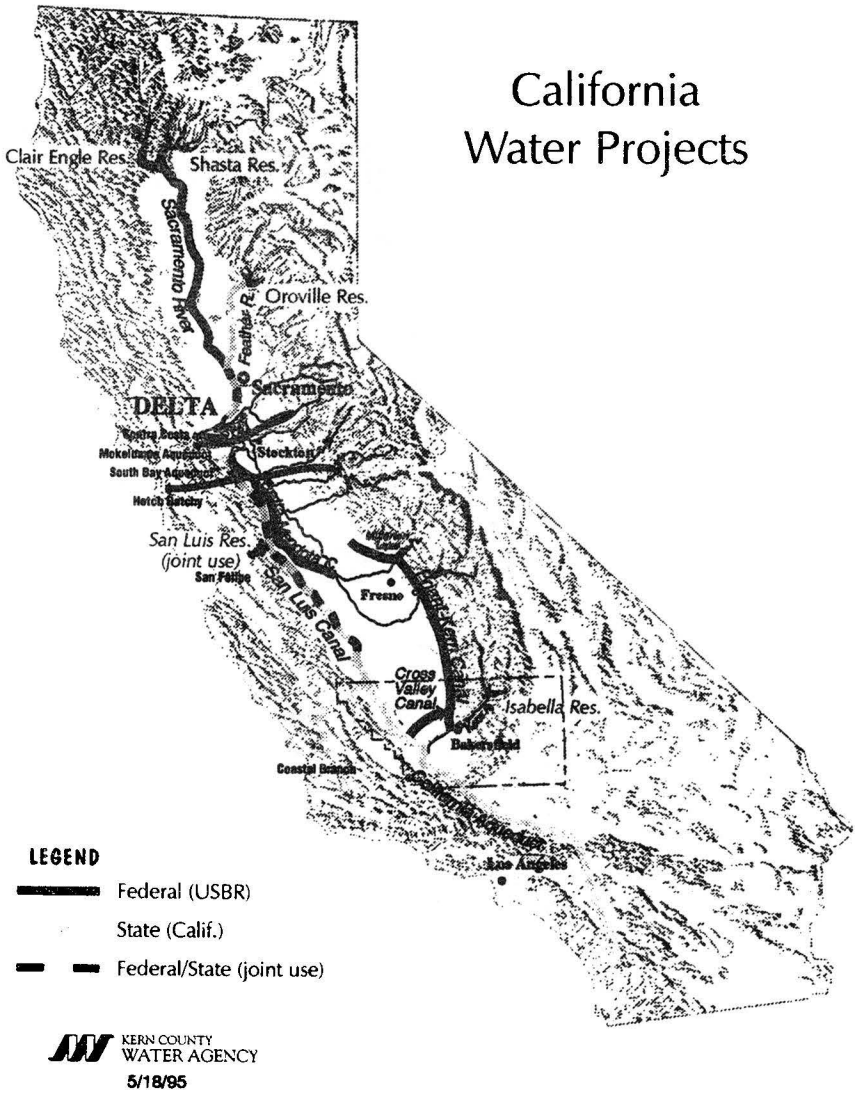
GOOD SCIENCE AND ADMINISTRATIVE STREAMLINING

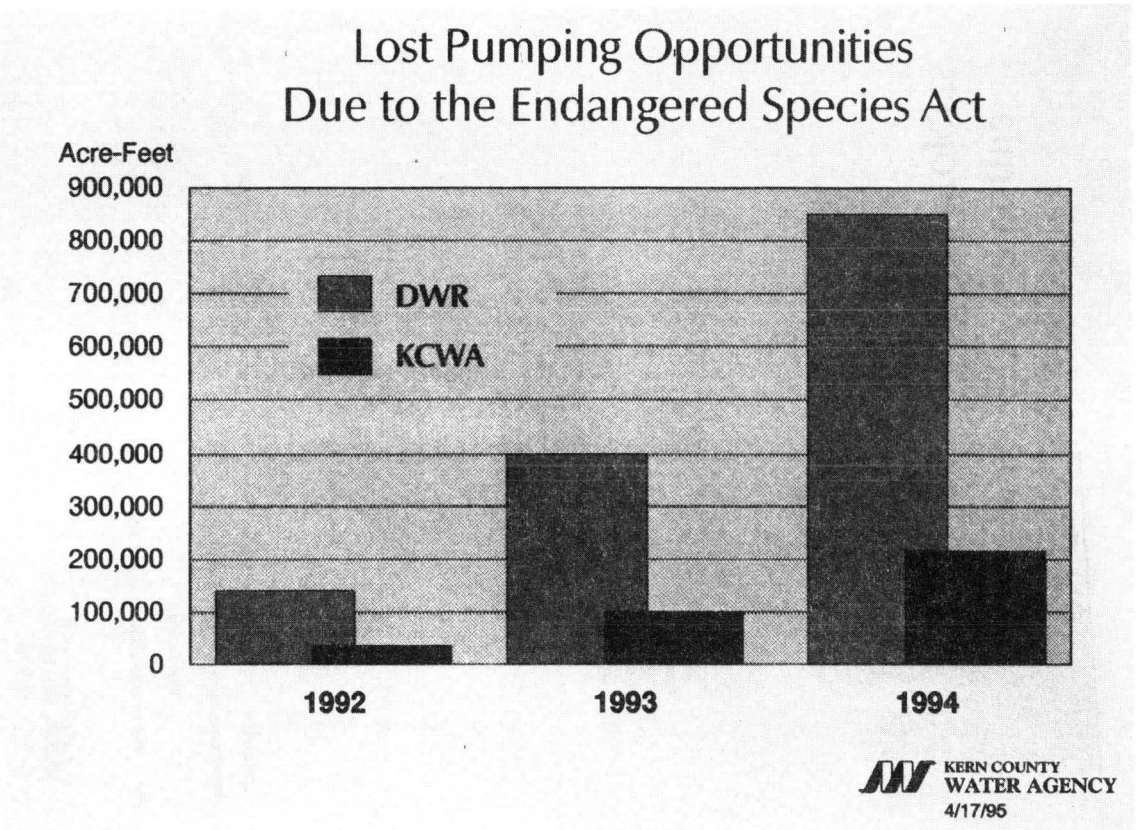
- Scientific peer review by a nationally recognized scientific organization, such as the National Academy of Sciences, is needed at every phase of the listing process.
- The recovery process should be better defined, with clear goals, and recovery plans should be adopted and implemented in a timely manner. When the goals in the recovery plan are met, the species should be delisted.
- Local impacted communities need to be brought into the process earlier through better use of public notice of potential listings and critical habitat designations. Notices should cover the entire area which will potentially be economically impacted by the listing, not just the immediate area where the species resides.
- Decisions by resources agencies on what constitutes a take under Section 9 and decisions on applications for incidental-take permits under Section 10, must be based on sound, supportable, peer-reviewed scientific evidence.
- The same rules and guidelines should apply to listings and delistings.
- The ESA should provide equal access to the courts for persons who support and persons who oppose a listing.
- The ESA's definitions of subspecies or geographic range, and the ESA's listing criteria should avoid: 1) the listing of plants or animals where there is not clear scientific evidence of their subspecies status, and 2) the listing of species whose numbers are limited in one area, but flourish in another geographic area.
- The ESA should codify administrative hearing and appeal procedures for listing decisions, recovery plan decisions, designations of critical habitat, decisions of what constitutes a "take" of a listed species, and decisions on applications for incidental-take permits.

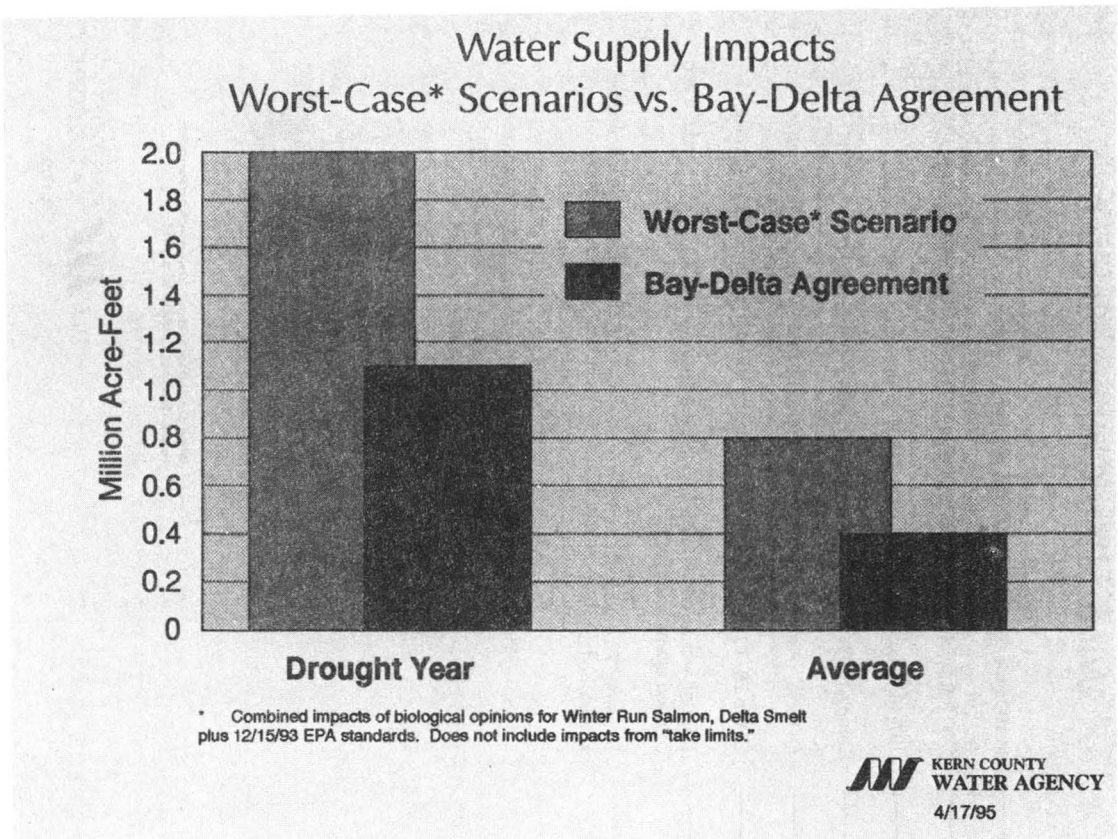
GOOD SCIENCE AND ADMINISTRATIVE STREAMLINING - Continued

- To avoid duplication, the ESA should offer and encourage delegation to states able to meet established Federal guidelines. Appropriate Federal agencies should be directed to establish a program to delegate authority to such states and to issue guidelines by which those states could assume authority. o To establish an Endangered Species Act Advisory Board to provide independent peer review of a listing or delisting of a species.

ESA Work Group - 4/15/96

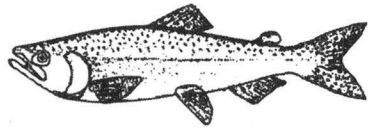

California
Water Projects
Clair Engle Res.
Shasta Res.
Sacramento River
Oroville Res.
Feather R.
Sacramento
DELTA
Stockton
Mokelumne Aqueduct
South Bay Aqueduct
Hetch Hetchy
San Luis Res.
(joint use)
San Felipe
San Luis Canal
Fresno
Cross
Valley
Canal
Isabella Res.
Bakersfield
Coastal Branch
Los Angeles
LEGEND
Federal (USBR)
State (Calif.)
Federal/State (joint use)
KERN COUNTY
WATER AGENCY
5/18/95


Lost Pumping Opportunities
Due to the Endangered Species Act
Acre-Feet
900,000
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0
DWR
KCWA
1992
1993
1994
KERN COUNTY
WATER AGENCY
4/17/95


Water Supply Impacts
Worst-Case* Scenarios vs. Bay-Delta Agreement
Million Acre-Feet
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0
Worst-Case* Scenario
Bay-Delta Agreement
Drought Year
Average
* Combined impacts of biological opinions for Winter Run Salmon, Delta Smelt plus 12/15/93 EPA standards. Does not include impacts from "take limits."
KERN COUNTY WATER AGENCY
4/17/95

Winter Run Chinook Salmon

- In 1994 the "take limit" was 905 smolts.
- One fish caught at fish screens "computes" to 30 fish counted against the take limit.
- 10% of Winter Run smolts were hatchery raised and tagged.
- During 1993, 97 smolts were actually caught at fish screens.
- Of these 97 smolts, 20 (21%) had clipped adipose fins (hatchery raised).
- Of the 20, 19 had tags showing they were fall-run; one was missing its tag.
- This one was assumed to be a winter run (even though it had a clipped fin) and counted against the take limit.
- The other 77 untagged smolts were all assumed to be winter run and counted against the take limit.

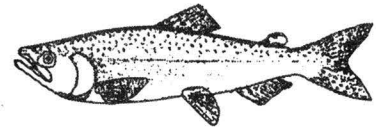


Winter Run Chinook Salmon *Oncorhynchus tshawytscha*
Federal Threatened, California Endangered.

KERN COUNTY
WATER AGENCY
4/17/95

Winter Run Chinook Salmon

- Ocean fisheries "take" 25% of adult population.
- Recreational fishing "takes" 3% of adult population.
- Delta export projects had "take limit" of one percent of juvenile population imposed, or 0.02% of the adult population.
- Wildlife agencies use a complex "formula" to compute "take."
- Their "formula" allegedly accounts for striped bass feeding in Clifton Court forebay and other factors.
- The water projects are held responsible for fish eating fish!
- In 1994, of smolts charged as "takes," none were proven to be Winter Run Salmon.



Winter Run Chinook Salmon *Oncorhynchus tshawytscha*
Federal Threatened, California Endangered.

KERN COUNTY
WATER AGENCY
4/17/95

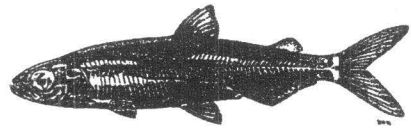
Delta Smelt

- Populations are estimated using midwater trawl net surveys.

- In 1994 a pilot study compared conventional trawl net efficiency with Kodiak net efficiency.

	Conventional Trawl Gear		Kodiak Trawl Gear	
Date	Average Catch/Tow	Average Catch/1000 m3	Average Catch/Tow	Average Catch/1000 m3
09/22/94	2.6	0.2	415	54.1
09/29/94	0.6	0.06	131	20.1
10/20/94	0.0	0.0	8.4	1.4

- Wildlife agencies concluded that Kodiak trawl gear was not suitable for population surveys because all past data is based on conventional trawl gear.



Delta Smelt *Hypomesus transpacificus*
Federal Threatened.

KERN COUNTY
WATER AGENCY
4/17/95

1991 Emergency Ground Water Program

- KCWA faced an emergency water supply situation.
- A plan was devised to extract "banked" water by constructing 19 new wells and using other existing wells.
- A CDFG biologist determined that the 1991 emergency program posed minimal risk to T&E species.
- KCWA spent $28,000 for wildlife surveys and such, and NOT ONE THREATENED OR ENDANGERED SPECIES WAS FOUND.
- KCWA obtained an approved Biological Assessment & Mitigation Plan for construction of 19 new wells.
- In spite of this,
  - Wildlife agencies' ESA requirements and bureaucracy resulted in a three-month delay in construction of new wells.
  - USF&WS refused to allow use of existing wells, even though an approved plan had already been obtained for construction of the 19 new wells.
- KCWA and DWR were prevented from recovering 100,000 AF, at a cost to KCWA of $3 million.

San Joaquin Kangaroo Rat *Dipodomys nitratoides*
D.n. exilis, Federal Endangered, California Endangered; *D.n. nitratoides*, Federal Endangered, California Species of Special Concern; *D. n. brevinasus*, California Species of Special Concern, California Fully Protected.

KERN COUNTY
WATER AGENCY

4/17/95

STATEMENT
BEFORE THE COMMITTEE ON RESOURCES
U.S. HOUSE OF REPRESENTATIVES
REGARDING
REAUTHORIZATION OF THE ENDANGERED SPECIES ACT

Presented in Washington, D.C.
on

April 17, 1996

Presented by Supervisor Sam Sharp
Imperial County, California
on behalf of the
Southern California Association of Governments (SCAG)

Good morning, Mr. Chairman and honorable members of Congress. I am Supervisor Sam Sharp of Imperial County in Southern California. I am here on behalf of the Southern California Association of Governments (SCAG), which is the Metropolitan Planning Organization for a six-county region and the largest Council of Governments in the nation. I am a member of SCAG's 70-member Regional Council that is composed of County Supervisors, Mayors, and City Council Members from the counties of Los Angeles, Orange, Riverside, Ventura, San Bernardino, and Imperial. I am a member of the Energy and Environment Committee and I also represent SCAG as an appointee to the Governor's Committee on Biodiversity and the Desert Advisory Council.

The Energy and Environment Committee has devoted a great deal of time this past year reviewing Endangered Species Act (ESA) Reauthorization issues. Fifteen million residents in SCAG's region will be especially affected by the manner in which the ESA is implemented. Much work needs to be done to improve the framework and implementation of the current law. In the existing ESA legislation, financing mechanisms are inadequate in providing the necessary funding for local governments to plan, acquire, manage, and monitor natural habitat areas.

Funding requirements have fallen upon local jurisdictions and land owners. Federal and State agencies have held public hearings *outside* of the jurisdictions where new and potentially-threatened and endangered species are affected. A process is needed for local governments to provide input regarding endangered and threatened species within their boundaries. There is a need for establishing consistent, clear guidelines and standards for habitat conservation and recovery plan requirements so that abuse by administrative discretion is prevented. It is also necessary to establish a process by which local governments are able to incorporate decisions on habitat conservation into the general planning process for land use, regional development, housing and public facilities.

The costs associated with species protection and land use policies must be considered, especially with regard to Southern California's diverse ecosystem. California is blessed with a rich biodiversity, encompassing 11 biogeographic regions, 396 distinct habitat types and more animal and plant species than any other State (821 vertebrate species and 8,000 plant species). Many of these are in Southern California. Under the Federal ESA, as of 1993, 64 animals and 44 plants found in California were listed as threatened or endangered. Seventy-three animals and 213 plants were listed as threatened or endangered under the California ESA or California Native Plant Protection Act of 1977. Most of these listings were due to the result of habitat losses.

We believe that a comprehensive multi-species habitat preservation approach could bring about measurable economic benefits to the Southern California Region. This type of program could protect the region's economy against development disruptions that would otherwise occur due to planning and funding disputes. Disruptions could result in lower job growth and resident incomes. We believe in the systematic evaluation and restoration of natural habitat for the benefit of healthy ecosystems, rather than a "species-by-species" approach. A multi-species habitat approach would encourage holistic management of listed species, such as the recent attempt to identify and manage a habitat for the coastal California gnatcatcher and other sensitive species residing in the same area. This concept – multi-species habitat conservation plans for sensitive habitat types – is a more systematic, anticipatory and proactive approach to coordinated resource management, allowing reasonable, compatible development *and* full protection of the species of concern, minimizing future conflict with the need for regional development and providing certainty in planning to developers and conservationists alike.

There are four types of financial costs associated with species protection and land-use policies:

1) costs for information gathering and analysis about species and habitats or ecosystems,

2) costs for the acquisition of critical habitats or ecosystems,

3) costs for restoring habitats or ecosystems and rebuilding populations of threatened species, and

4) costs for monitoring, evaluating, and taking remedial efforts, when necessary.

None of these four types of costs are funded under the current Endangered Species Act. The Federal ESA and most State Acts push the costs to local governments, private land owners, and project proponents. Local funding programs are often time-consuming and often difficult to establish -- particularly where a number of local agencies are involved -- regionwide. If the implementation of the ESA is in the national interest, then the funding should be shared equally -- nationwide.

Riverside County passed a $300 million bond issue to acquire land for the Stephens' Kangaroo Rat. The County had anticipated State and Federal funding to match the more than $120 million raised locally through development impact fees and project mitigation measures. Without the matching funds, the County's effort to form a joint powers agency to implement a preservation plan for the kangaroo rat was hampered.

In Ventura County, as a direct result of compliance with Federal ESA mandates, the costs of a local municipal flood control project was increased by thousands of "hard dollars" spent and many more "soft dollars" lost in time delays. In Imperial County, with unemployment ranging from 22.5 to 33.7 percent, there are not enough county dollars to fund basic services -- let alone to comply with ESA requirements. State and local governments simply cannot afford the regulatory mandates imposed upon them by the currently-enforced Federal ESA.

Many private land owners are reluctant to willingly and voluntarily participate in conservation management practices that would encourage the proliferation of threatened or endangered species on their land. This reluctance stems from the concern that the presence of a listed species would limit the options for their land or diminish the value of their property. A family in Riverside County had farmed a piece of ground for over 100 years. They had practiced established agricultural recommendations and farming standards for crop rotation and fallowing. An incursion of kangaroo rats in the fallowed area precluded their ability to continue to farm on a significant portion of their land.

We believe that the ESA should be amended to provide explicit Congressional endorsement of agreements that will protect land owners who are willing to maintain or enhance suitable habitat property for threatened or endangered species. To be attractive to the land owner, the agreement must be voluntary, exempt the land owner from future land use restrictions that might otherwise be incurred by a species moving into the habitat, and allow the land owner appropriate control over the management of the land. If land owners could have some assurance that a *"take of habitat"* would not lead to prosecution under the Endangered Species Act, they would be more willing to participate in activities to preserve habitat.

Without secure rights to private property, land owners who wish to derive economic value from their land will have very little, if any, incentive to engage in land-use practices that will be beneficial to threatened and endangered species since currently such species represent an economic liability that devalues property. The result is that the minority of Americans with endangered species on their land are forced to bear all the costs of providing habitat. Just as compensation is paid for the public good such as for highways, public parks, military bases, and others, the U.S. Fish and Wildlife Service should also compensate private property owners when the protection of threatened or endangered species devalues their property.

Approximately 65 percent of the land in Southern California is publicly owned and administered by agencies of local, State, and Federal governments, including the Bureau of Land Management, the U.S. Forest Service, the Department of Defense, the National Park Service, State Lands Commission, and State Parks and Recreation. All governments should maximize the use of public lands for the conservation of threatened and endangered species. The

use of public lands should be the first priority for the purposes of meeting the habitat conservation needs of the Endangered Species Act.

Current legislative efforts will not preclude the need for developing a funding framework. The creation of a Federal funding framework is the most critical element: 1) in re-establishing the balance of biodiversity, 2) for reconciling concerns regarding economic development and the protection of individual property rights, and 3) for removing the burden of funding and implementation from local governments. Not only is the funding critical, but streamlining the implementation is essential to local governments. Delays and added project costs caused by compliance with Federal ESA mandates waste scarce local government dollars. High costs to developers also negatively affect local governments in their efforts toward economic development and additional revenue generation.

The benefits of reducing regulatory burdens are clear: The empowerment, enhancement and creativity of the regional planning process in Southern California can enhance the survival of endangered species; increasing competitiveness for economic growth; and honoring both the need to conserve our nation's biodiversity and to appreciate the freedoms associated with private land ownership. Reauthorization of the federal Endangered Species Act must reduce administrative, economic, and regulatory burdens on local governments and provide funding to conserve threatened and endangered species.

Attachment:
ESA Reauthorization Policies
[Adopted by the Regional Council, September, 1995]

Endangered Species Act (ESA) Reauthorization Policies

In 1995, the Southern California Association of Governments adopted policies to ensure that Congress reauthorizes the Endangered Species Act to endorse the following principles:

- **Habitat-Based Conservation Planning.** Provide for comprehensive habitat-based conservation plans whereby landowners, local governments, and others can be ensured: 1) that land-use activities will not be disrupted, and 2) that additional conservation actions will not be required regardless of subsequent species listings.

- **Listing/Delisting with Biological Data**. Require that proposals for listing or subsequent delisting of species as endangered or threatened be supported by specific types of biological data meeting significant scientific standards, taking into consideration local conditions and whether the recovery of a species is possible or feasible.

- **Delist on Pre-Determined Criteria**. Promptly delist endangered or threatened species on pre-determined criteria or if recovery is found to be impossible based on significant standards/biological data.

- **A Clear Definition of Species**. Provide a definition of ***"species"*** which ensures that: 1) species are taxonomically distinct, and 2) protection is not afforded to individual population segments of species whose overall population is not considered at-risk.

- **A Modified Definition of "Take of Habitat"**. Modify the definition of ***"take of habitat"***: 1) to apply to affirmative attempts to injure, harm or kill a listed species directly, and 2) to exclude destruction or adverse modifications to wildlife habitat as determined by a qualified biologist, according to pre-determined criteria, to be unsuitable for occupation by a listed species regardless of season.

- **Categorical Exemptions for Routine Maintenance**. Provide categorical exemptions for routine maintenance and emergency repair of public facilities, infrastructure, and agri-farming practices that have enhanced endangered or threatened species.

- **Project Exemptions**. Provide an exemption for projects crucial to public health and safety.

- **Process and Review Plans**. Require processing and review of permit applications, habitat conservation plans, and Section 7 consultations to be

subject to specific dates of completion and deemed approved if not completed as required.

- **Evaluation of Economic and Social Impacts.** In addition to biological data, require an analysis of the economic impacts and social impacts of a species listing based on established criteria detailing the total costs and funding.

- **Local Government Funding.** Require federal and state agencies mandating habitat plans should be required to fully fund local governments for the costs of said plans prior to development and implementation.

- **Consultation with Affected Jurisdictions.** Require consultation with affected local jurisdictions at least 60 days prior to a notice of a proposed listing appearing in the Federal Register.

- **Public Hearings in Affected Areas.** No action under the ESA shall be implemented without full public hearings within the jurisdictional area and opportunity for full participation/review by the local government affected.

- **No Acquisition of Private Property.** No acquisition of private property shall occur for endangered species habitats, due to the implementation of State and Federal Endangered Species Acts, without just compensation, taking into consideration the value immediately prior to notice of proposed acquisition or restriction. Payment shall be made at the time of acquisition or restriction or transfer of deed.

- **Consolidate Agency Efforts.** Consolidate the efforts of all federal and state agencies dealing with endangered species to eliminate duplication, so that private properties are not subject to double jeopardy.

- **Maximize Use of Public Lands.** All governments should maximize use of public lands for conservation of threatened and endangered species. The use of public lands should be the first priority for the purposes of meeting the habitat and conservation needs of the ESA.

- **Adequate Funding for Local Government-Required Plans.** Any local government independently mandating an endangered species plan not required by federal or state government or any other governmental agency, shall have the responsibility for identifying adequate funding for the plan.

- **Clear Guidelines and Standards.** Clear guidelines and standards for the type and extent of biological and other information required for habitat conservation plans, recovery plans, and the like, must be established to avoid unwarranted pressure from mandating agency staff. There should be no "moving targets"; criteria should be established up front in the process to ensure no abuse of administrative discretion occurs.

- **Congressional Funding**. Congress shall provide adequate funding for the implementation of the ESA.

United States Department of the Interior

OFFICE OF THE SECRETARY
Washington, D.C. 20240

APR - 1 1996

Honorable Don Young
Chairman, Committee on Resources
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

Thank you for your February 5, 1996, letter to Secretary Babbitt regarding costs associated with implementing the Endangered Species Act. We appreciate the opportunity to respond to your inquiry.

Last October, the Fish and Wildlife Service published the 1994 Report to Congress on its Endangered and Threatened Species Recovery Program. In conjunction with releasing that report, the Service developed summary figures for implementing the program. For Fiscal Year 1995, Service appropriations to carry out programs for the recovery of listed species were $39.7 million. Using an estimate of 250 million people for the population of the United States, the recovery budget was about 16 cents per person that year.

Appropriations for the Service's Recovery Program for Fiscal Years 1989-95 were $142,254,000. If this figure is divided by 7 (the number of years in the time period) and then subsequently divided by the population number, the resulting figure indicates that the Service received about 8 cents per person per year to fund its recovery program. These calculations were based solely upon appropriations to the Service. We are enclosing copies of pages from the documents used to develop these figures.

You also asked about the amounts that Interior Department agencies have spent on implementation, enforcement, compliance or any other Act activities required or mandated for the last 5 years. The figures you requested for Fiscal Years 1991, 1992, and 1993 can be found in the enclosed Federal and State Endangered Species Expenditures Reports, copies of which were provided to Congress under section 18 of the Endangered Species Act of 1973, as amended in 1988 (Public Law 100-478). The

Service is completing the Fiscal Year 1994 Expenditures Report and has initiated the data solicitation for Fiscal Year 1995. When these reports are printed, we will provide the Resources Committee with copies.

Based on the published Federal and State Endangered Species Expenditure Reports for Fiscal Years 1989-1993, which identify expenditures that are reasonably identifiable for the conservation of threatened and endangered species by Federal and State agencies, about $861,784,000 was expended during the 5-year period. This means that approximately 69 cents was spent per person annually for the conservation of listed species.

Regarding your request for the Department's projected funding needs for implementing the Act in Fiscal Year 1997, that information is contained in the Fish and Wildlife Service's proposed FY 1997 Budget Justification, a copy of which has been provided to your Committee.

Again, thank you for your interest. If you have further questions, please let us know.

Sincerely,

George T. Frampton, Jr.
Assistant Secretary for Fish
and Wildlife and Parks

Enclosures

Activity/Subactivity/Program Element	Type of Appropriation	1985 Enacted	1986 Enacted	1987 Enacted	1988 Enacted	1989 Enacted	1990 Enacted	1991 Enacted	1992 Enacted	1993 Enacted	1994 Enacted	1995 Adj. Approp.
ECOLOGICAL SERVICES												
Endangered Species	Current	16,558	16,746	18,546	18,832	21,036	24,331	32,082	35,721	39,198	58,703	68,947
Prelisting		...	...	...	...	...	...	...	2,149	2,130	4,360	4,442
Listing		3,191	3,071	3,622	3,255	3,499	3,481	4,325	7,378	6,190	7,409	6,499
Consultation		2,845	6,031	3,193	2,978	3,252	3,691	5,267	8,130	9,455	14,416	18,297
Permits (moved to International Affairs in '95)		718	815	866	797	877	875	910	1,199	1,358	2,968	0
Recovery		5,884	2,625	6,565	7,502	8,408	10,608	14,906	19,014	20,065	29,550	39,709
Grants to States		3,920	4,204	4,300	4,300	5,000	5,676	6,674	0	0	0	0
[Funded in other activities]		[10,414]	[12,088]	[11,218]	[11,840]	[12,617]	0	...	...	...	...	...
[Total, Endangered Species]		[26,972]	[28,834]	[29,764]	[30,672]	[33,710]	0	...	...	...	...	...
Habitat Conservation 1/	Current	18,421	16,813	18,261	19,546	21,098	23,114	31,374	33,920	44,462	51,332	57,651
Trust Species Habitat/Tech Asst.		0	0	0	0	0	0	0	0	8,891	13,647	15,472
Project Planning		0	0	0	0	0	0	0	0	22,163	22,971	22,887
Environmental Contaminants		0	0	0	0	0	0	0	0	400	409	402
Coastal Ecosystems		0	0	0	0	0	0	0	0	5,067	5,398	6,351
National Wetlands Inventory		5,410	5,056	5,296	5,088	5,365	4,969	7,126	8,088	7,941	7,907	7,750
Forest Plan												
Jobs-in-the-Woods		0	0	0	0	0	0	0	0	0	1,000	3,513
ATTRA		0	0	0	0	0	0	0	0	0	0	1,276
Environmental Contaminants	Current	5,516	3,891	4,902	5,851	6,364	6,478	12,595	14,426	11,206	8,969	9,617
Subtotal, Ecological Services	Current	45,905	42,506	47,005	49,317	53,863	58,892	83,177	92,155	94,866	119,004	136,215
REFUGES AND WILDLIFE	Current											
Refuge Operations and Maintenance	Current	102,130	99,271	111,463	117,903	117,391	128,440	141,389	154,913	157,516	165,977	167,531
Operations		69,072	66,400	80,050	83,543	88,743	90,381	99,353	107,632	109,405	113,179	115,069
Maintenance		33,058	32,871	31,413	34,360	28,648	32,059	42,036	47,281	48,111	52,798	52,462
Walnut Creek Land Acquisition	Current	...	...	...	...	...	6,000	...	...	...	...	...
Law Enforcement Operations	Current	17,990	18,847	18,322	20,541	21,467	22,709	31,391	31,441	32,853	34,687	35,525
Wildlife LE		10,049	9,406	9,977	11,747	11,917	12,819	20,014	17,946	19,185	20,711	21,141
Fishery LE		2,126	2,060	2,117	2,157	2,214	2,203	2,566	3,154	3,198	3,183	3,131
Endangered Species LE		5,815	7,381	6,228	6,637	7,336	7,687	8,811	10,341	10,470	10,793	11,253
Migratory Bird Management	Current	6,569	6,280	8,158	8,477	8,441	12,600	17,004	18,209	17,214	15,234	14,363
Subtotal, Refuges and Wildlife	Current	126,689	124,398	137,943	146,921	147,299	163,749	189,784	204,563	207,583	215,898	217,419
FISHERIES												
Hatchery Operations and Maintenance	Current	24,877	24,565	24,584	25,948	28,243	31,483	38,418	40,654	39,328	39,685	38,344
Anadromous Fish Hatchery Operations		7,539	7,374	7,817	8,013	8,113	8,793	11,012	12,152	11,798	10,907	10,521
Inland/Great Lakes Hatchery Operations		13,698	13,117	13,932	14,884	16,059	16,937	18,937	20,179	19,333	19,819	18,898
Hatchery Maintenance & Rehab.	Current	3,640	4,074	2,835	3,051	4,071	5,753	8,469	8,323	8,197	8,959	8,925
Lower Snake River Compensation Plan	Current	4,495	5,339	6,394	6,515	6,823	7,924	9,359	10,681	10,596	11,799	11,710
Fish and Wildlife Management	Current	4,646	4,728	5,304	5,975	7,544	8,277	10,675	11,929	13,416	15,836	15,851
Anadromous Fish Management		3,011	3,062	3,236	3,438	4,699	5,380	5,486	5,625	5,974	7,076	6,960
Fish and Wildlife Assistance		1,635	1,666	2,068	2,537	2,845	2,897	5,189	6,304	7,442	8,760	8,891
Subtotal, Fisheries	Current	34,018	34,632	36,282	38,438	42,610	47,684	58,452	63,264	63,340	67,320	65,905

Activity/Subactivity/Program Element	Type of Appropriation	1985 Enacted	1986 Enacted	1987 Enacted	1988 Enacted	1989 Enacted	1990 Enacted	1991 Enacted	1992 Enacted	1993 Enacted	1994 Enacted	1995 Adj. Approp.
RESEARCH AND DEVELOPMENT												
Fish and Wildlife Research Ctr. O&M	Current	33,830	36,436	43,825	47,348	48,189	56,819	63,900	63,759	63,423	...	...
Contaminants Research		10,214	9,726	12,936	12,195	12,389	13,209	13,778	13,631	13,550	...	...
Wildlife Research		6,449	8,981	12,123	14,878	14,781	17,411	19,303	18,080	17,666	...	...
Fishery Research		10,771	10,984	11,577	13,016	14,754	16,170	18,928	19,492	19,691	...	...
Endangered Species Research		4,404	4,544	4,827	4,897	5,165	6,044	7,577	7,844	7,676	...	...
Research Maintenance		1,992	2,201	2,362	2,362	1,100	3,985	4,314	4,712	4,840		
Technical Development		5,535	5,291	5,774	5,669	6,777	7,464	10,477	14,035	15,322	...	...
Coop Units		4,692	4,465	4,758	5,671	6,294	6,465	7,589	7,590	7,761	...	...
Subtotal, Research and Development	Current	44,057	46,192	54,357	58,688	61,260	70,748	81,966	85,384	86,506	0	0
GENERAL ADMINISTRATION												
Central Office Administration	Current	7,128	10,397	11,204	11,992	14,094	15,349	16,483	17,948	15,888	15,897	13,528
Regional Office Administration	Current	12,147	10,757	12,890	13,201	13,269	13,325	16,308	20,256	27,314	23,845	23,033
Servicewide Administrative Support	Current	18,848	17,647	20,453	21,072	24,710	26,311	27,600	29,300	35,042	40,659	42,710
International Affairs		0	0	0	0	0	0	0	0	0	0	5,301
Training and Education		0	0	0	0	0	0	0	0	0	0	6,928
Engineering Service	Current	...	...	3,504	3,565	3,583	3,586	...	...	...	...	...
Subtotal, General Administration		38,123	38,801	48,051	49,230	55,656	58,571	60,391	67,504	78,244	80,401	91,500
SUBTOTAL, RESORCE MGMT. ENACTED	Current	288,792	286,529	323,638	342,594	360,688	399,644	473,770	512,870	530,539	482,623	511,039
TRANSFERS AND SUPPLEMENTALS												
ANIMAL DAMAGE CONTROL (Dept. of Ag.)	Current	19,646	...	...	...	...	...	..	...	...	...	...
Net Transfers for Emergency Fire Suppression and Flood Prevention	Current	...	...	...	1,200	-1,360	..	...	..	...	...	...
1989 Dire Emergency Supplemental	Current	...	...	...	...	2,895	...	...	...	...	...	...
1990 Unanticipated Needs - Hurr. Hugo	Current	...	...	...	...	...	1,957	...	...	...	...	...
Net Oil Spill Emergency Fund Transfers	Multi-year (0/4)	...	...	...	...	4,567	4,148	1,050	1,942	...	...	...
1992 DIRE EMERGENCY SUPPLEMENTAL	Current Permanent	...	...	...	...	...	...	...	1,000	... 20,000	...	...
1994 Forest Plan Supplemental	Current	...	...	...	...	...	...	...	...	...	2,100	...
1994 Transfer from NBS (administrative-Net)	Current	...	...	...	...	...	...	...	...	...	1,960	...
Emerg. Supplemental - Floods/Earthquake	Current	...	...	...	...	...	...	...	...	...	7,600	...
RESOURCE MANAGEMENT GRAND TOTAL		308,438	286,529	323,638	343,794	366,790	405,749	474,820	515,812	556,539	494,283	511,039

Activity/Subactivity/Program Element	Type of Appropriation	1985 Enacted	1986 Enacted	1987 Enacted	1988 Enacted	1989 Enacted	1990 Enacted	1991 Enacted	1992 Enacted	1993 Enacted	1994 Enacted	1995 Adj. Approp.	1996 Proposed
ECOLOGICAL SERVICES													
Endangered Species	Current	16,859	16,748	16,546	16,852	21,866	24,391	32,662	35,721	38,169	58,703	70,447	77,670
Petitions									2,140	2,139	4,360	4,442	4,529
Listing		3,101	3,071	3,022	3,256	3,459	3,451	4,285	7,278	6,169	7,409	7,589	8,157
Consultation		8,845	8,691	9,169	8,978	9,592	9,894	9,397	8,139	9,485	14,416	16,897	20,026
Permits		710	946	866	797	877	875	916	1,169	1,265	2,068	0	0
Recovery		6,884	6,466	6,865	7,868	8,438	10,830	14,800	16,944	20,966	30,829	39,769	44,964
Grants to States		5,859	4,264	4,364	4,369	5,869	5,876	6,834	0	0	0	0	0
[Funded in other activities]		[50,414]	[16,468]	[11,218]	[11,848]	[12,067]	0	–	–	–	–	–	–
[Total, Endangered Species]		[50,273]	[50,202]	[50,764]	[50,972]	[50,716]	0	–	–	–	–	–	–
Habitat Conservation V	Current	16,451	16,843	16,391	16,548	21,888	23,114	31,374	36,869	44,462	51,332	57,851	58,891
Trust Species Habitat/Tech Asst.										8,894	13,647	16,472	17,333
Project Planning										32,169	32,871	22,857	21,861
Environmental Coordination										420	409	402	412
Coastal Ecosystems										5,987	5,389	6,351	7,264
National Wetlands Inventory		5,410	5,856	5,366	5,869	5,366	4,869	7,126	5,869	7,841	7,807	7,750	8,829
John-in-the -Woods	Current										1,800	3,513	4,000
ATTRA											0	1,276	0
Environmental Contaminants	Current	5,516	5,891	4,268	5,861	6,364	6,479	12,385	14,459	11,208	8,969	9,817	9,162
Subtotal, Ecological Services	Current	49,885	49,859	47,845	49,347	59,889	69,852	85,177	88,858	94,899	119,884	137,715	146,538
REFUGES AND WILDLIFE													
Refuge Operations and Maintenance	Current	102,139	99,271	111,469	117,888	117,391	128,449	141,269	164,913	167,516	166,877	167,831	169,556
Operations		69,972	69,469	69,866	69,549	69,743	69,291	69,269	107,892	109,405	113,179	115,369	149,332
Maintenance		39,868	29,871	34,419	34,369	39,649	39,869	49,869	47,291	49,111	52,766	52,462	20,226
Malheur Creek Land Acquisition	Current	–	–	–	–	–	6,869	–	–	–	–	–	–
Law Enforcement Operations	Current	17,869	16,847	16,382	20,541	21,467	22,769	24,291	31,441	32,853	34,697	36,525	36,279
Wildlife LE		14,849	9,466	9,877	11,747	11,967	12,849	20,014	17,849	18,165	20,711	21,141	21,042
Fishery LE		2,165	2,869	2,117	2,167	2,214	2,869	2,869	6,164	3,169	3,163	3,131	3,152
Endangered Species LE		5,815	7,291	6,869	6,827	7,369	7,867	8,811	10,341	10,479	10,793	11,253	11,085
Migratory Bird Management	Current	9,869	9,869	9,159	9,477	9,441	12,869	17,894	19,869	17,214	15,734	14,363	16,011
Subtotal, Refuges and Wildlife	Current	129,869	124,869	137,849	148,891	147,869	169,769	183,764	204,869	207,869	215,869	217,719	229,846
FISHERIES													
Hatchery Operations and Maintenance	Current	34,877	34,886	34,884	35,948	36,943	31,469	39,418	40,864	39,338	38,666	29,466	28,476
Anadromous Fish Hatchery Operations		7,839	7,374	7,817	8,013	8,113	8,768	11,812	12,169	11,768	10,807	10,521	10,733
Inland/Great Lakes Hatchery Ops.		13,869	13,117	13,862	14,884	14,869	14,867	16,867	20,179	18,338	18,816	18,946	17,743
Hatchery Maintenance & Rehab.	Current	3,849	4,874	3,885	3,881	4,871	5,763	6,469	6,363	6,167	8,868	8,825	6,425
Lower Snake River Compensation Plan	Current	4,488	5,368	5,364	6,516	6,868	7,884	8,388	10,881	10,388	11,788	11,710	11,567
Fish and Wildlife Management	Current	4,849	4,788	5,364	5,876	7,844	8,877	10,876	11,889	13,418	15,838	15,861	22,312
Anadromous Fish Management		2,811	2,882	3,368	3,488	4,869	5,388	6,488	6,886	8,874	7,876	6,868	8,811
Fish and Wildlife Assistance		1,835	1,868	2,868	2,887	2,845	2,867	3,118	3,384	7,442	8,788	8,891	13,401
Subtotal, Fisheries	Current	34,869	34,869	36,868	39,469	48,868	47,884	59,468	69,864	69,348	67,338	66,866	66,776
RESEARCH & DEVELOPMENT													
Fish and Wildlife Research Ctr. O&M	Current	33,859	39,436	43,885	47,348	46,169	58,819	63,869	63,788	63,433	–	–	
Contaminants Research		10,314	9,788	12,885	16,166	16,388	13,389	13,779	13,831	13,569	–	–	
Wildlife Research		8,449	8,881	10,163	14,839	14,784	17,411	19,383	16,889	17,888	–	–	
Fishery Research		10,771	10,884	11,677	13,846	14,784	16,179	15,888	16,482	16,881	–	–	
Endangered Species Research		4,484	4,844	4,887	4,887	5,168	6,844	7,877	7,844	7,878	–	–	
Research Maintenance		1,882	2,381	2,382	2,388	1,169	3,868	4,314	4,712	4,848	–	–	
Technical Development		5,535	5,381	5,774	6,869	6,777	7,884	10,477	14,868	15,388	–	–	
Coop Units		4,888	4,486	4,788	5,871	6,884	6,486	7,588	7,888	7,781	–	–	
V Formerly Ecological Services (prior to FY 93)													
Subtotal, Research and Development	Current	84,857	86,182	94,367	98,869	91,388	76,748	86,888	88,884	88,888	0	0	0

FEDERAL AND STATE ENDANGERED SPECIES EXPENDITURES

FISCAL YEAR 1993

Compiled by
U.S. Fish & Wildlife Service
January 1995

Executive Summary

Purpose: Section 18 of the Endangered Species Act (Act) of 1973 requires the Secretary of the Interior (working through the Fish and Wildlife Service) to annually report certain expenditures for the conservation of threatened and endangered species. This report presents the reported expenditures for Fiscal Year 1993.

Background: Only those expenditures that are reasonably identifiable for a listed species are to be reported. All Federal agencies and those States receiving Section 6 grant-in-aid funds pursuant to the Act are asked to report. The first report for Fiscal Year 1989 reported expenditures totaling more than $43 million for the conservation of 347 (63%) of 554 species listed as threatened and endangered as of September 30, 1989. The 1990 report tabulated expenditures totaling more than $102 million for 477 (81%) of the 591 listed species. The 1991 expenditures totaled almost $177 million for 570 (89%) of the 639 threatened and endangered species, and expenditures totaling $291,510,910 were reported for 679 (93%) of the 728 threatened and endangered species in 1992. Since only a few foreign species are receiving expenditures from U.S. governmental agencies, these annual reports are restricted to a discussion concerning listed U.S. species.

Results: Expenditures totaling $233, 090,270 ($42,329,000 for land acquisition--Table 3, $190,761,270 all other expenditures--Table 1) are reported here for 750 (93%) of the 809 threatened and endangered species listed in the United States. Expenditures are identified by species and reported separately for the Fish and Wildlife Service (Service), the States, and in aggregate for all other reporting Federal agencies.

The Service and 18 other Federal agencies identified expenditures for the conservation of individual threatened and endangered species. Two other agencies responded that their expenditures were not reasonably identifiable to species. Responses from all Federal agencies are included in Appendix 1. The median total non-acquisition expenditure was approximately $13,000 (maximum of $18.52 million) per species receiving at least $100. Ten species (1.2 %) accounted for 49.6 percent of all expenditures for which amounts were reported.

A good faith effort was made to develop species-by-species expenditures for this report. However, the information presented still does not reflect the total national effort toward threatened and endangered species conservation and continues to present an incomplete funding picture. A significant portion of threatened and endangered species conservation activities includes law enforcement, consultation, recovery coordination and other actions that are not easily or reasonably identified to species. Accounting procedures by all agencies for most staff salaries, operations, maintenance and other support services are not recorded to species. Also not reported 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.

This report tabulates expenditures that are five times the FY 1989 expenditures ($43 million), more than double the $102 million of 1990, a one-third increase over the $177 million amount in 1991, and a reduction of 20 percent from 1992 ($291.5 million). The Fish and Wildlife Service estimates that the bulk of these changes are from better reporting by the State and Federal agencies, with particular increased emphasis on habitat acquisitions for listed species in the past several years.

FEDERAL AND STATE ENDANGERED SPECIES EXPENDITURES

FISCAL YEAR 1992

Compiled by
U.S. Fish & Wildlife Service
June 1993

Executive Summary

Purpose: Section 18 of the Endangered Species Act (Act) of 1973 requires the Secretary of the Interior (working through the Fish and Wildlife Service) to annually report certain expenditures for the conservation of threatened and endangered species. This report presents the reported expenditures for Fiscal Year 1992.

Background: Only those expenditures that are reasonably identifiable for a species are to be reported. All Federal agencies and those States receiving Section 6 grant-in-aid funds pursuant to the Act are asked to report. The first report for Fiscal Year 1989 reported expenditures totaling more than $43 million for the conservation of 347 (63%) of 554 species listed as threatened and endangered as of September 30, 1989. The 1990 report tabulated expenditures totaling more than $102 million for 477 (81%) of the 591 species listed as of September 30, 1990. The 1991 expenditures totaled almost $177 million for 570 (89%) of the 639 threatened and endangered species. Since only a few foreign species are receiving expenditures from U.S. governmental agencies, these annual reports are largely restricted to a discussion concerning listed U.S. species.

Results: Expenditures totaling $291,510,910 are reported here for 679 (93%) of the 728 threatened and endangered species (Table 1). Expenditures are identified by species and reported separately for the Fish and Wildlife Service (Service), the States, and in aggregate for all other reporting Federal agencies.

The Service and 15 other Federal agencies identified expenditures for the conservation of individual threatened and endangered species. Another three agencies responded that their expenditures were not reasonably identifiable to species. Responses from all Federal agencies are included in Appendix 1. The median expenditure was $16,000 (maximum of $73.579million) per species receiving at least $100. Five species (0.7 %) accounted for 50.5 percent of all expenditures for which amounts were reported (Table 2). The number of species receiving half of each year's reported expenditures has declined in each of the 4 reporting years.

A good faith effort was again made to develop species-by-species expenditures for this report. However, the information presented still does not reflect the total national effort toward threatened and endangered species conservation and continues to present an incomplete funding picture. A significant portion of threatened and endangered species conservation activities includes law enforcement, consultation, recovery coordination and other actions that are not easily or reasonably identified to species. Accounting procedures by all agencies for most staff salaries, operations, maintenance and other support services are not recorded to species. Also not reported 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.

This report tabulates seven times the expenditures ($43 million) as the report for FY 1989, nearly triple the $102 million of 1990, and a 65 percent increase over the 1991 amount. The Fish and Wildlife Service estimates that the bulk of these increases are from better reporting by the State and Federal agencies, with particular increased emphasis on habitat acquisitions for listed species in the past 2 years.

FEDERAL AND STATE ENDANGERED SPECIES EXPENDITURES

FISCAL YEAR 1991

Compiled by
U.S. Fish & Wildlife Service
July 1992

Executive Summary

Purpose: Section 18 of the Endangered Species Act (Act) of 1973 requires the Secretary of the Interior (working through the Fish and Wildlife Service) to annually report certain expenditures for the conservation of threatened and endangered species. This report presents these expenditures for Fiscal Year 1991.

Background: Only those expenditures that are reasonably identifiable for a species are to be reported. All Federal agencies and those States receiving Section 6 grant-in-aid funds pursuant to the Act are to report. The first report for Fiscal Year 1989 reported expenditures totaling more than $43 million for the conservation of 347 (63%) of 554 species listed as threatened and endangered as of September 30, 1989. The next report tabulated expenditures totaling more than $102 million for 477 (81%) of the 591 species listed as of September 30, 1990. Since only a few foreign species are receiving expenditures from U.S. governmental agencies, these annual reports are largely restricted to a discussion concerning listed U.S. species.

Results: Expenditures totaling almost $177 million are reported here for 570 (89%) of the 639 threatened and endangered species (Table 1). Expenditures are identified by species and reported separately for the Fish and Wildlife Service (Service), the States, and in aggregate for all other reporting Federal agencies.

The Service and 10 other Federal agencies identified expenditures for the conservation of individual threatened and endangered species. Another five agencies responded that their expenditures were not reasonably identifiable to species. Responses from all Federal agencies are included in Appendix 1. The median expenditure was $12,200 (maximum of $24.651 million) per species receiving at least $100. Seven species (1.1 %) accounted for 51.5 percent of all expenditures for which amounts were reported (Table 2). The number of species receiving half of each year's reported expenditures has declined in each of the three reporting years.

A good faith effort was made to develop species by species expenditures for this report. However, the information presented still does not reflect the total National effort toward threatened and endangered species conservation and continues to present an incomplete funding picture. A significant portion of threatened and endangered species conservation activities includes law enforcement, consultation, recovery coordination and other actions that are not easily or reasonably identified to species. Accounting procedures by all agencies for most

FEDERAL AND STATE ENDANGERED SPECIES EXPENDITURES

FISCAL YEAR 1990

Compiled by
U.S. Fish & Wildlife Service
January 1991

Executive Summary

Purpose: Section 18 of the Endangered Species Act (Act) of 1973 requires the Secretary of the Interior (working through the Fish and Wildlife Service) to annually report certain expenditures for the conservation of threatened and endangered species. This report presents these expenditures for Fiscal Year 1990.

Background: Only those expenditures that are reasonably identifiable for a species are to be reported. All Federal agencies and those States receiving Section 6 grant-in-aid funds pursuant to the Act are to report. The first report for Fiscal Year 1989 reported expenditures totaling more than $43 million for the conservation of 347 of 554 species listed as threatened and endangered as of September 30, 1989. Since only a few foreign species are receiving expenditures from U.S. governmental agencies, these reports are largely restricted to a discussion concerning listed U.S. species.

Results: Expenditures totaling more than $102 million are reported here for 477 of the 591 threatened and endangered species (Table 1). Expenditures are identified by species and reported separately for the Fish and Wildlife Service (Service), the States, and in aggregate for all other reporting Federal agencies.

The Service and 12 other Federal agencies identified expenditures for the conservation of individual threatened and endangered species. Another five agencies responded that their expenditures were not reasonably identifiable to species. Responses from all reporting Federal agencies are included in Appendix 1. Expenditures were reported for approximately 80 percent of all United States listed species with a median expenditure of $13,150 (range of $100 to $9.7 million) per species. Half of all expenditures were made on approximately 2.1 percent of those 477 species for which expenditures were reported (Table 2). This result is slightly lower than the 3 percent of the species reported for FY 1989 that received half of those species with reported expenditures.

A good faith effort was made to develop species by species expenditures for this report. However, the information presented still does not reflect the total National effort toward threatened and endangered species conservation and continues to present an incomplete funding picture. A significant portion of threatened and endangered species conservation activities includes law enforcement, consultation, recovery coordination and other actions that are not easily or reasonably identified by species. Accounting procedures by all agencies for most staff salaries, operations, maintenance and other support services are not recorded by species. Also not reported here are the extensive efforts of the private sector; many groups, individuals, corpor-

FEDERAL AND STATE ENDANGERED SPECIES EXPENDITURES

FISCAL YEAR 1989

Compiled by
U.S. Fish & Wildlife Service
January 1990

Summary

Purpose:	Section 18 of the Endangered Species Act (Act) of 1973 requires annual reporting of certain expenditures for the conservation of threatened and endangered species. This report presents these expenditures for Fiscal Year 1989.
Background:	Section 18 of the Act was amended on October 7, 1988, by Public Law 100-470 to require the Secretary of the Interior (working through the Fish and Wildlife Service) to report to the Congress annually on certain expenditures for the conservation of threatened and endangered species. Only those expenditures that are reasonably identifiable for a species are to be reported. All Federal agencies and those States receiving Section 6 grant-in-aid funds pursuant to the Act (States) are required to report. No such reporting requirements were included in the Act prior to this amendment.
Results:	**Expenditures totaling more than $43M** are reported here for the conservation of 347 threatened and endangered species (Table 1). Expenditures are identified by species and reported separately for the Service and in aggregate for all other Federal agencies reporting and the States. The International Association of Fish and Wildlife Agencies assisted the Service by compiling the data on total States expenditures by species.

DEPARTMENT OF THE ARMY
U.S. Army Corps of Engineers
WASHINGTON, D.C. 20314-1000

22 APR 1996

REPLY TO
ATTENTION OF:

Policy Review and Analysis Division
Legislative Initiatives Branch

Honorable Don Young
Chairman
Committee on Resources
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

I am responding to questions posed by several members of your Committee during the April 17, 1996, hearing on the implementation and administration of the Endangered Species Act (the Act). The questions involved U.S. Army Corps of Engineers appropriated expenditures for Pacific salmon in the Columbia and Snake Rivers in Washington, Oregon and Idaho. Specifically, have Corps and Bonneville Power Administration (BPA) expenditures been "double reported" to your Committee and what percent and amounts of the Corps annual expenditures are repaid to the Treasury by power users through the BPA?

We have consulted with BPA staff and I can report that there are no "double reported" figures provided to your Committee. BPA did not include any Corps expenditures or requests for appropriations in their report to the Committee. With regard to Corps annual expenditures repaid to the Treasury by power users, allocations vary on a project-by-project basis. On average, however, the repayment by power users for Corps projects on the Columbia and Snake Rivers is 80 percent.

In dollar terms, we estimate the following repayments were made: Fiscal Year 1992: $10.4 million; Fiscal Year 1993: $17.2 million; Fiscal Year 1994: $32.6 million; Fiscal Year 1995: $64 million. Given our projections for salmon expenditures in Fiscal Years 1996 and 1997, we expect the repayment to be approximately $72 million and $84 million, respectively.

It is important to note that previous reports to your Committee and the Corps annual response to the Department of the Interior, have not reflected these repayments. This is due to our need to communicate budgets and expenditures necessary to comply with the Act as a function of our mission execution.

I appreciate the opportunity to provide this information and would be glad to respond to any additional inquiries.

Sincerely,

Stanley G. Genega
Major General, U.S. Army
Director of Civil Works

Copies Furnished:
Members of the House Committee on Resources
Assistant Secretary of the Army (Civil Works)

DEPARTMENT OF THE ARMY
U.S. Army Corps of Engineers
WASHINGTON, D.C. 20314-1000

29 APR 1996

REPLY TO
ATTENTION OF:

Policy Review and Analysis Division
Legislative Initiatives Branch

Honorable Helen Chenoweth
House of Representatives
Washington, D.C. 20515

Dear Mrs. Chenoweth:

During the April 17, 1996, Committee on Resources hearing on the implementation and administration of the Endangered Species Act, you suggested that the U.S. Army Corps of Engineers Civil Works appropriations for Fiscal Year 1995 was 192 million dollars. I noted my concern regarding the accuracy of that figure and indicated an interest in providing you with current budgetary information.

I have enclosed a chart reflecting the Corps Civil Works appropriations from Fiscal Year 1967 through Fiscal Year 1997 projections. I can report that the Corps Civil Works appropriations for Fiscal Year 1995 was slightly more than 3.3 billion dollars.

I appreciate the opportunity to provide this information and would be glad to respond to any additional inquiries.

Sincerely,

Stanley G. Genega
Major General, U.S. Army
Director of Civil Works

Enclosure

Copy Furnished:
Assistant Secretary of the Army (Civil Works)

CIVIL APPROPRIATIONS
FY 1967 THROUGH BUDGET YEAR
($000)

FY	General Investigations	Constr., General	Operation & Maint., General	Regulatory Program	Mississippi River & Tributaries	General Expenses	Flood Contr. & Coastal Emergencies	Oil Spill Research	Revolving Fund	Permanent Approp.	Special Recreation Use Fees	Total Approp.	Total B&H Contributed Funds	Coastal Wetlands Trust	FY
67	32,450	965,955	178,900	--	87,135	18,014	7,000	--	--	3,510	--	1,292,964	--	--	67
68	34,445	967,599	193,000	--	87,135	19,515	--	--	--	3,293	--	1,304,987	--	--	68
69	30,015	862,714	227,300	--	69,600	21,875	30,000	--	--	4,084	--	1,245,588	--	--	69
70	41,191	711,992	261,825	--	80,820	25,367	32,000	--	--	3,392	--	1,156,577	--	--	70
71	39,024	851,178	301,831	--	83,987	27,586	3,000	--	--	3,420	--	1,310,026	--	--	71
72	50,714	1,025,084	388,519	--	86,000	29,723	5,000	--	--	4,153	--	1,589,193	--	--	72
73	57,805	1,203,943	407,100	--	111,620	32,183	136,000	--	--	3,723	--	1,952,374	--	--	73
74	56,142	873,589	428,625	--	284,600	35,083	107,000	--	--	6,430	700	1,770,169	--	--	74
75	65,284	966,338 a/	494,577	--	120,051 a/	40,100	65,400 a/	--	--	4,427	700	1,756,877	--	--	75
76	66,836	1,237,151 b/	582,073	--	205,147 b/	43,700	40,000 b/	--	700	7,097	1,200	2,183,904	--	--	76
76TQ	17,110	412,741	153,116	--	60,300	11,050	3,750	--	950	--	--	659,017	--	--	76TQ
77	71,920	1,430,195 c/	667,600	--	231,487	49,050	22,140	--	6,600	6,026	2,000	2,487,028	--	--	77
78	107,046	1,537,820	788,870	--	253,081	60,000	18,000	--	21,525	11,720	6,000	2,789,512 d	--	--	78
79	137,978	1,343,711	833,100	--	223,035	68,900	126,000	--	46,000	8,239	3,300	2,790,263	--	--	79
80	142,145	1,659,752 e/	941,580 e/	--	210,515	76,800	170,000	--	50,000	6,410	4,000	3,261,202	40,804	--	80
81	134,013	1,593,892	967,905	--	237,519	86,630	25,000	--	43,225	6,778	5,000	3,099,962	81,032	--	81
82	137,225	1,429,992	1,025,355	--	256,310	96,000	40,000 f/	--	--	12,191	4,784	3,001,857	62,878	--	82
83	139,042	1,508,405	1,201,367	--	403,052	100,100	54,877	--	--	9,524	4,942	3,421,309 g	43,700	--	83
84	135,810	926,804	1,184,492	--	302,480	105,800	10,000	--	9,500	9,779	6,000	2,690,665	54,321	--	84
85	141,400	955,300 h/	1,307,600	--	321,800	115,000	50,000	--	(3,200) i	13,065	i/	2,900,965	49,729	--	85
86	123,478	879,830	1,260,248	--	301,225	105,399	48,925	--	6,699	14,626	i/	2,740,430 k/	49,084	--	86
87	136,162	1,148,918 l/	1,389,971	--	310,797	118,232	10,000	--	12,000	14,950	i/	3,141,030	114,943	--	87
88	138,767	1,200,175 m/	1,400,000 n/	55,262 o/	317,704	115,200	20,000	--	--	11,802	i/	3,258,910	154,083	--	88
89	142,405	1,179,910 m/	1,369,614 n/	63,752	337,980	122,600	20,000	--	--	10,504	i/	3,246,765	129,598	--	89
90	129,251	1,083,811 m/	1,398,219 n/	68,455	330,296	141,997	20,000	--	9,860	14,700	i/	3,196,589 p	135,819	--	90
91	146,433	1,143,073 m/	1,450,656 n/	71,099	344,602	126,598	20,000	--	0	11,801	i/	3,314,262	121,179	--	91
92	194,427	1,284,142 m/	1,538,329 n/	86,000	356,437	141,500 q/	55,000	--	0	12,296	i/	3,668,133 r/	151,781	33,065	92
93	171,780 s/	1,357,503 m/s/	1,596,668 n/s/	88,000	351,182	149,000 s/	130,000 t/	--	0	10,499	i/	3,852,632 s	158,800	33,173	93
94	207,540 u/	1,400,875 u/	1,688,990 u/	92,000	348,875	148,500	150,000 t/w/	350	0	12,000	i/	4,049,130	206,000	34,838	94
95	170,568 w/	918,500 u/	1,642,276 y/	100,733 z/	327,252 aa/	152,250 ab/	14,979	900	0	12,000	i/	3,339,458	230,495	35,000	95
96	121,767	804,573	1,703,697	101,000	307,885	151,500	10,000	850	0	11,296	i/	3,212,568	140,000	36,981	96
97 Bud	141,000	941,000	1,635,000	112,000	305,000	153,000	15,000	850	0	12,000	i/	3,314,850	198,247	42,878	97 Bud

CIVIL APPROPRIATIONS
FY 1967 THROUGH BUDGET YEAR
($000)

FY	General Investigations	Constr., General	Operation & Maint., General	Regulatory Program	Mississippi River & Tributaries	General Expenses	Flood Contr. & Coastal Emergencies	Oil Spill Research	Revolving Fund	Permanent Approp.	Special Recreation Use Fees	Total Approp.	Total R&B Contributed Funds	Coastal Wetlands Trust	FY
a/	Reflects a transfer of $8,503,000 from Construction, General, and $4,867,000 from MR&T to Flood Control and Coastal Emergencies.														
b/	Reflects a repayment of $8,503,000 borrowed for Flood Control and Coastal Emergencies in FY 75 to Construction, General, and $41,867,000 to MR&T. Also reflects a borrowing of $25,000,000 for FC&CE in November 1975 and February 1976 from Construction, General, and repayment of a like amount to Constr., Gen.														
c/	Reflects rescission of $6,550,000 (Public Law 95-96)														
d/	Includes $8,450,000 appropriated for the Alaska Hydroelectric Power Development fund by Public Law 96-240, not included under other appropriation titles. These funds were rescinded in FY 80.														
e/	Reflects rescission of $1,214,000 in Construction, General, and $520,000 in Operation and Maintenance, General, under provision of Section 304, Public Law 96-304.														
f/	Urgent Supplemental Appropriations Act, 1982 (Public Law 97-216).														
g/	FY 83 Continuing Resolution Authority (CRA) directs appropriations be held to current rate for FY 82.														
h/	Includes appropriations of $7,800,000 to be transferred from the Inland Waterways Trust Fund.														
i/	Funds for the Special Recreation Use Fees are included under the Operation and Maintenance, General appropriation.														
j/	Funds transferred for initial funding of the National Council on Public Works Improvement (Public Law 99-141).														
k/	Reflects Gramm-Rudman-Hollings (G-R-H) adjustments.														
l/	Includes $26,000,000 to be appropriated from the Inland Waterways Trust Fund.														
m/	Includes funds from the Inland Waterways Trust Fund on an as-needed or as-available basis.														
n/	Includes funds from the Harbor Maintenance Trust Fund on an as-needed or as-available basis.														
o/	Funds for General Regulatory Functions (Regulatory Program) were included under the O&M, General appropriation prior to FY 88.														
p/	Reflects G-R-H sequester of 1.4 percent and FY 90 Dire Emergency Supplemental.														
q/	Reflects rescission of $500,000 by Public Law 102-298, dated June 4, 1992.														
r/	Reflects enactment of FY 92 Supplemental, Public Law 102-368, of $3,100,000 (O&M), $3,000,000 (MR&T), and $40,000,000 (FC&CE).														
s/	Reflects transfer of $7,000,000 to GE($4,000,000 from GI and $3,000,000 from CG) to further a more efficient headquarters and division office structure, under transfer authority provided by P.L. 102-377														
t/	Reflects enactment of of FY 93 Emergency Supplemental, Public Law 103-75, of $55,000,000 (O&M) and $120,000,000 (FC&CE).														
u/	Includes $96,000,000, part of the President's Long-term Investment in Infrastructure.														
v/	Does not reflect Rescission Proposals R94-23 and R94-24 dated November 2, 1993.														
w/	Includes recission of $10,631														
x/	Includes recission of $65,158														
y/	Includes recission of $4,250														
z/	Includes recission of $287														
aa/	Includes recission of $886														
ab/	Includes recission of $250														
ac/	Includes $48,000,000 from the Inland Waterways Trust Fund														

FUNDING OF THE ENDANGERED SPECIES ACT
ARE WE ADEQUATELY FUNDING THE ACT?

A Study of ESA Related Expenditures
and the Budget of the Fish and Wildlife Service
as it Relates to Protecting Endangered and Threatened Species

Prepared by the Committee on Resources
Majority Staff

April 24, 1996

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FUNDING OF THE ENDANGERED SPECIES ACT
ARE WE ADEQUATELY FUNDING THE ACT?

Prepared by the Committee on Resources Majority Staff

Although authorization for funding of the Endangered Species Act expired in 1992, the Congress has continued to appropriate funds each year for programs carried out under the authority of the Act. The Committee on Resources ordered reported H.R. 2275, The Endangered Species Conservation and Management Act of 1995 on October 12, 1995. H.R. 2275 increases the authorized levels of funding by $110 million over the 1995 appropriation levels. The 1992 authorization was about $51 million. According to the Congressional Budget Office, H.R. 2275 "in the aggegate would authorize annual appropriations of Between $190 million (for fiscal year 1996) and $265 million (for 2001), for a total of about $1.4 billion over the six-year period. These authorizations are in addition to any grants authorized by the ESA from the Cooperative Endangered Species Conservation Fund or any amounts authorized under section 802 (costs sharing)."

CLAIMS ABOUT UNDERFUNDING THE ESA

Getting accurate information on ESA related expenditures has become increasingly difficult. The following quotes illustrate the difficulty of getting an honest portrayal of ESA related spending.

According to Secretary Babbitt, ESA only cost each American 16 cents per year.

> *"But finally, more than any of our environmental laws, the Act they have most aggressively singled out for elimination-- one that made Yellowstone complete -- is the 1973 Endangered Species Act. Never mind that this Act is working, having saved 99 percent of all listed species; never mind that it effectively protects hundreds of plants and animals, from grizzly bears to whooping cranes to greenback cutthroat trout; never mind that it is doing so while costing each American 16 cents per year".* **Bruce Babbitt, Secretary of the Interior from "Our Covenant: To Protect the Whole of Creation" Interior on the Web. December 16, 1995, http://www.usgs.gov/ien/bbwolf.html**

George Frampton explains how this was computed:

> *"For Fiscal Year 1995, Service (Fish and Wildlife Service) appropriations to carry out programs for the recovery of listed species were $39.7 million. Using an estimate of 250 million people for the population of the United States, the recovery budget was about 16 cents per person that year."* **Letter from George T. Frampton, Jr., Assistant Secretary for Fish and Wildlife and Parks, dated April 1, 1996 to Chairman Don Young, Committee on Resources.**

Many environmentalists tend to downplay the amount of spending for ESA also. For example, quoting from a document dated March, 1996, Legislative Tracks, distributed by the Doris Day Animal League *"on average, the total funding to administer the ESA is less than it costs to build 2.4 miles of urban interstate highway."* Although the Doris Day Animal League could not provide information on the amount that cost, the Federal Highway Administration provided information that the "typical" cost per mile of a six lane urban interstate highway is $41.6 million per mile while the typical cost of a four lane rural interstate highway is $9.29 million per mile. This calculates to $98.88 million.

Michael Bean of the Environmental Defense Fund is fond of comparing ESA spending to total spent on Domino's pizza in Washington, D.C.

> *"The core budget of the U.S. Fish and Wildlife Service's endangered species program is $58 million, or about equal to what residents of the metropolitan Washington D.C. area spend each year on pizza delivery from just one major chain."* EDF FACT SHEET, "The Endangered Species Act: Facts vs. Myths": on the Worldwide Web.

Even the Congressionally mandated publication on ESA Expenditures is not totally accurate. The report itself makes clear the it's numbers are below actual expenditures because they do not reflect administrative costs or costs that are not attributable to a single species. However, the numbers provided by the report differ significantly from those provided by the Secretary and the environmental groups.

The following total ESA spending was derived from the Federal and State Direct Expenditures on Endangered and Threatened species for 1989 through 1993, Fish and Wildlife Service Annual Report to Congress as required by Public Law 100-478.

1989 ---$43 million
1990 ---$102 million
1991 ---$177 million
1992 ---$291.5 million
1993 ---$233 million

Why has there been such an effort to mislead the American public about the enormous investment that is being made by the United States in programs to protect and conserve wildlife?

ANNUAL REPORT TO CONGRESS ON ESA EXPENDITURES

In 1988, Congress enacted Section 18 of the Endangered Species Act of 1973 as amended by Public Law 100-478. This section requires an annual report to be compiled and published by the U.S. Fish and Wildlife Service on expenditures reasonably identifiable for endangered species in each fiscal year by all federal agencies and those states receiving grants under Section 6 of the Act. The last report was published for fiscal 1993. However, all agencies have turned in their reports for fiscal 1994 which is scheduled for release in July of 1996.

The law only requires the reporting of those amounts which are "reasonably identifiable" for a listed species. This report is limited to spending for listed species in the United States and does not include spending on species found in foreign countries. The reporting is on a species by species basis. According to the report, "the information presented still does not reflect the total national effort toward threatened and endangered species conservation and continues to present an incomplete funding picture. A significant portion of threatened and endangered species conservation activities includes law enforcement, consultation, recovery coordination and other actions that are not easily or reasonably identified to species. Accounting procedures by all agencies for most staff salaries, operations, maintenance and other support services are not recorded to species. Also not reported here are the extensive efforts of the private sector; many groups, individuals, corporations, and other who have contributed a considerable amount of resources and volunteer time towards listed species." (Emphasis added)

In 1993, 20 Federal agencies reported spending appropriated funds on endangered or threatened species:

Department of Agriculture
- Animal and Plant Health Inspection Service
- Forest Service
- Soil Conservation Service

Department of Commerce
- National Oceanic and Space Administration

Department of Defense
- Office of the Under Secretary
- Army Corps of Engineers

Department of Energy
- Bonneville Power Administration

Department of the Interior
- Bureau of Indian Affairs
- Bureau of Land Management
- Bureau of Mines
- Bureau of Reclamation
- National Park Service

Department of Transportation
- Federal Aviation Administration
- Federal Highway Administration

Department of the Treasury
- Customs Service

Environmental Protection Agency
Federal Energy Regulatory Commission
Nuclear Regulatory Commission
Smithsonian Institution
Tennessee Valley Authority

The tables included show spending by species and rank the species in order of spending. The top ten species for 1993 are:

1993 Rank	Species	Status	Total	1992 Rank
1	Salmon, Snake River spring/summer Chinook	T	$18,518,660	NA
2	Owl, northern spotted	T	$16,829,220	3
3	Tortoise, Dessert	T	$15,920,690	12
4	Salmon, Snake River spring/summer Chinook	T	$10,777,860	NA
5	Salmon, sockeye	E	$14,765,290	2
6	Woodpecker, red-cockaded	E	$ 7,549,400	1
7	Eagle, bald	E,T	$ 4,702,460	7
8	Bear, Grizzly or brown	T	$ 3,623,220	9
9	Crane Whooping	E	$ 3,379,170	19
10	Wolf, Gray	E,T	$ 3,226,530	18

E=Endangered T=Threatened

The General Accounting Office in its Report "Endangered Species - Potential Economic Costs of Further Protection for Columbia River Salmon" GAO/RCED -93041, Feb. 1993, further highlights the enormous expenditures for the 1st, 4th and 5th ranked species -- salmon.

"Since 1981, federal agencies and regional organizations in the Pacific Northwest have reported taking numerous actions and spending over $1.3 billion (in 1991) dollars to maintain and improve salmon runs in the Columbia River Basin. However, the continuing decline of certain stocks of wild salmon, especially those that spawn far upstream in the Snake River and its tributaries, has reached critically low levels." The Snake River sockeye salmon was listed as endangered in November, 1991 and the Snake River fall chinook and spring/summer chinook were listed as threatened in April, 1992. "In addition to actual expenditures, preliminary estimates of the value of goods and services foregone - a measure of direct net economic costs - in the most current and comprehensive study completed to date of the likely economic costs of some potential salmon protection measures range from $2 million to $211 million annually (in 1990 dollars)." No studies address how effective any of the protection measures proposed to date might be in increasing the number of threatened and endangered adult salmon returning to spawn." (Emphasis added)

However, to get an idea how much the annual expenditure reports understate ESA related expenditures it is necessary to do a thorough analysis of the agency budgets that benefit endangered species. The lead agency for implementation of the Endangered Species Act is the Fish and Wildlife Service within the Department of Interior. The Department of Interior has requested more than **$7 Billion** in appropriations for the 1997 fiscal year. The Fish and Wildlife Service request is for **$1.26 Billion**. All of the funding for the Fish and Wildlife Service benefits wildlife and plants, which includes endangered and threatened species.

DEPARTMENT OF INTERIOR BUDGET

1996 - $6.8 BILLION: 1997 Budget Request $7.33 BILLION

The Land and Water Conservation Fund -

1996- $36,900,000 (11,283 Acres acquired for ESA out of 38,396 total acquired; prorated is $11,000,000 for ESA).
1997 Request - $36,900,000

DEPARTMENT OF INTERIOR: FISH AND WILDLIFE SERVICE BUDGET

TOTAL FUNDING 1996 --- $1,189,631,000: 1997 BUDGET REQUEST - $1,262,981,000

The Fish and Wildlife Service manages 92 million acres of land including 508 units of the National Wildlife Refuge System, 35 waterfowl production areas and 50 coordination areas. Operates 72 National Fish Hatcheries and 9 Fish Health Centers and utilizes a network of law enforcement agents and inspectors.

FISH AND WILDLIFE SERVICE RESOURCE MANAGEMENT - Includes Ecological Services, Refuges and Wildlife, Fisheries, and General Administration:

1995	1996	1997 Request
$511,039,000	**$497,943,000**	**$540,372,000**

Special Requests for 1997:

1. **$21,250,000** for implementation of President's Northwest Forest Plan. Purpose is to protect and restore old growth ecosystems and to promote recovery of listed species from an ecosystem perspective. The total in the Department of the Interior for the President's Forest Plan -$79.2 million in 1997 (FY '96- total $55.3 million). This category includes the so-called "Jobs in the Woods" program.

2. Everglades Funding Summary- The seven National Parks and National Wildlife Refuges in the South Florida ecosystem provide protection for 56 federally listed threatened and endangered species and 30 candidate species. FY 97 request was **$7.5 million** with **$3,300,000** identified for endangered species alone. **$1,365,000** for habitat conservation. For 1995 - **$5,848,000** appropriated to FWS. In FY 96, **$5.8 million**.

ECOLOGICAL SERVICES - ENDANGERED SPECIES:

	1995	1996	1997 Request
Prelisting[1] -	**$ 4,442,000**	**$ 3,800,000**	**$ 5,237,000**
Listing[2] -	**$ 7,999,000**	**$ 2,000,000**	**$ 7,483,000**
Consultations -	**$18,297,000**	**$16,000,000**	**$23,997,000**
Recovery[3] & [4]-	**$39,709,000**	**$36,500,000**	**$46,359,000**
TOTALS	**$70,447,000**	**$58,300,000**	**$83,076,000**

[1] This account is now known as the Candidate Conservation Program and is to implement measures to protect candidate species.

[2]Funds for listing have been reduced due to the moratorium on listings. The Interior Appropriations Subcommittee informed us that the Omnibus bill for 1996 would allow $2,000,000 for emergency listings, delistings, and downlistings.

[3]This amount consists of funds for personnel to draft recovery plans and to coordinate recovery efforts. The funding for many actual recovery efforts are found in other accounts such as the funding of the National Wildlife Refuge System, Law Enforcement, Consultations, Captive propagation programs, grants to states, Partners for Wildlife, the Forest Plan, Project Planning, Habitat Conservation and Restoration, and others.

[4] See last section on recovery planning for more details on the costs of recovery.

ESA ACTIVITIES FUNDED IN OTHER ACCOUNTS:

REFUGES AND WILDLIFE:

The goal of the National Wildlife Refuge System is "To preserve, restore, and enhance in their natural ecosystems all species of animals and plants that are endangered or threatened with becoming endangered." "Over 400 units of the Refuge System have at least one threatened or endangered species during some part of the year. A total of 58 refuges have been established specifically to protect threatened and endangered species, and 36 contain areas defined as designated critical habitat. In many cases refuges protect lands which form the nucleus of a larger ecosystem needed to support a species. Refuges are often integral components in the implementation of Recovery Plans in support of the Endangered Species Act. Of the almost 960 species listed under the endangered Species Act, approximately 232 (24%) occur and/or have habitat within the refuge system. Of these, approximately 55% are improving or stable."

Since 24% of species have habitat within the refuge system I have allocated 24% of the refuge budget as benefitting endangered or threatened species.

	1995	1996	1997 Request
REFUGES- TOTAL OPERATIONS & MAINTENANCE:	$167,831,000	$169,558,000	$179,237,000
Allocated to endangered and threatened species	$ 41,957,750	$ 42,389,000	$ 44,809,250
*Refuges Law Enforcement	$ 35,517,000	$ 35,265,000	$ 35,265,000
ESA 25% =	$ 8,879,250	$ 8,816,250	$ 8,816,250
*Law Enforcement(ESA)	$ 11,253,000	$ 11,085,000	$ 11,057,000

	1995	1996	1997 Request
*Fisheries Enforcement	**$ 2,856,000**	**$ 3,152,000**	**$ 3,152,000**
ESA 25%	**$ 714,000**	**$ 788,000**	**$ 788,000**
*Wildlife Enforcement	**$21,141,000**	**$21,042,000**	**$21,056,000**
ESA 25%	**$ 5,285,250**	**$ 5,260,500**	**$ 5,264,000**
*Permits/CITES International **$5,301,000** total for international in 1997.	**$ 3,438,000**	**$ 3,437,000**	**$ 3,437,000**
*Cooperative Endangered Species Fund	**$ 8,983,000**	**$ 8,085,000**	**$16,085,000**
TOTALS	**$80,510,250**	**$79,860,750**	**$90,256,500**

HABITAT PROTECTION AND RESTORATION PROGRAMS THAT BENEFIT ENDANGERED AND THREATENED SPECIES OR CANDIDATE SPECIES:

*Partners for Wildlife- Technical Assistance and habitat restoration includes Forest Plan "Jobs in the Woods" Ecosystem Restoration Projects	**$18,985,000**	**$22,132,000**	**$22,132,000**
*Project Planning - permit reviews of other agencies, 404 permits, hydropower permits	**$22,887,000**	**$21,284,000**	**$21,284,000**
*Coastal Ecosystems Program	**$ 6,351,000**	**$ 6,392,000**	**$ 6,392,000**
*National Wetlands Inventory	**$ 4,000,000**	**$ 4,000,000**	**$ 4,000,000**
TOTALS	**$55,973,000**	**$56,408,000**	**$58,826,000**

PROTECTION OF FISH:	1995	1996	1997 Request
*Fisheries- Fish Stewardship Focuses on restoring fishery resources through habitat restoration, resource conservation, evaluation of hatchery products, conservation of genetic diversity and evaluation of fish health.		**$ 2,052,000**	-0-
*Imperiled Anadromous Species -9 hatcheries are involved in captive propagation of threatened, endangered, and candidate fish species.		**$ 1,796,000**	**$ 1,808,000**
*Inland Imperiled Species - captive propagation at 17 National Fish Hatcheries to reverse the decline of several listed species.		**$ 3,057,000**	**$ 3,095,000**

*Lower Snake River compensation plan -- a fish production program comprised of 23 fish hatcheries and associated satellite facilities constructed by the Army Corps of Engineers at a cost of nearly **$200,000,000**. Today's replacement costs would be nearly double this figure. The plan was authorized by the Water Resources Development Act of 1976 to mitigate for the losses of salmon, steelhead and rainbow trout caused by the four federal dams on the lower Snake River. Each year the facilities produce an average of approximately 15,000,000 salmon, steelhead and rainbow trout weighing approximately 1,800,000 pounds. Actually funded by the Bonneville Power Administration through its power rates. The money is appropriated to Fish and Wildlife Service which makes the funds available at the beginning of the year and BPA repays by the end of the year.

	$11,557,000	**$11,557,000**	**$11,557,000**
*Fish and Wildlife Management- works with ESA listed fish	**$15,851,000**	**$16,239,000**	**$20,639,000**
TOTALS		**$34,701,000**	**$37,099,000**

	1995	1996	1997 Request
GENERAL ADMINISTRATIVE COSTS:			
*FWS central office administration	$13,628,000	$13,528,000	$13,528,000
*Regional office administration	$23,033,000	$21,000,000	$23,000,000
*Servicewide administrative support -	$43,013,000	$47,056,000	$45,056,000
TOTALS	$79,674,000	$81,584,000	$81,584,000
ESA at 25%	$19,918,000	$20,396,000	$20,396,000

CONSTRUCTION AND LAND COSTS:

*Land Acquisition for FY 1994-95 for ESA was 10,342 acres.
For ESA alone over $17,436,000 was spent in 1994 and $12,032,000 in 1995.

OTHER MISCELLANEOUS FUNDS:

*National Fish and Wildlife Foundation[5]	$ 5,490,000	$ 4,000,000	$ 5,000,000

[5]This Foundation encourages and administers donations of real or personal property in support of Fish and Wildlife programs. Donations have been applied to recovery of various endangered species such as the black-footed ferret, sea turtles, manatees, grizzly bear, and others.

	1995	1996	1997 Request
*The Migratory Bird Conservation Account[6]	$ 40,928,000	$ 44,928,000	$44,928,000
*African Elephant Conservation Fund[7]	$ 1,200,000	$ 601,000	$ 601,000
*Rhino/Tiger Conservation Fund	-NA-	$ 200,000	$ 200,000
*Cooperative Endangered Species Conservation Fund - Grants to States[8]	$ 25,480,000	$ 27,266,000	$ 28,706,000
*Federal Aid in Wildlife Restoration - Payments to states-Requires no appropriation[9]	$233,352,000	$240,204,000	$230,500,000
*Lahontan Valley/Pyramid Lake Fish and Wildlife Fund	$ 152,000	$ 152,000	$ 152,000

[6] This account funds land acquisition for waterfowl breeding, wintering and migration habitat needed for maintaining optimum migratory bird populations and others.

[7] This account provides funds for assisting nations and organizations involved with conservation of African elephants.

[8] This is a fund out of which are appropriated funds for grants to states under Section 6 of ESA. The states fund activities to conserve and monitor candidate and listed species. Included are funds for a Section 10 Habitat Conservation Plan pilot program. The balance in the fund at the end of 1997 will be $134,898,000.

[9] Permanent Appropriation -derived from excise tax on firearms, ammunition, and archery equipment, pistols and revolvers. $15,055,000 requested for Fish and Wildlife Service administrative expenses.

	1995	1996	1997 Request
*Wildlife Conservation and Appreciation Fund Grants to implement Partnerships for Wildlife Act	**$ 800,000**	**$ 800,000**	**$ 800,000**
TOTALS	**$307,402,000**	**$318,151,000**	**$310,887,000**
GRAND TOTAL	**$517,717,750**	**$510,155,750**	**$541,714,500**

COSTS OF RECOVERY

The Fish and Wildlife Service was appropriated $36,500,000 for "recovery" of endangered and threatened species. However, spending on recovery far exceeds this amount and is often accomplished by other federal, state and local agencies, private non profit organizations, corporations, and many times by private citizens. Recovery plans are drafted and proposed by the Fish and Wildlife Service regional personnel in the Ecological Services Division assigned to recovery activities. While there are 1,514 species listed as endangered or threatened, only 514 had recovery plans as of February, 1996. The General Accounting Offices recently responded to a request to examine costs of a sampling of recovery plans. They examined 58 plans to provide the Committee with information on estimated recovery costs for a number of high priority species. The cost estimates range from $145,000 for the White River Spinedace to $153.8 million for the green sea turtle. However, the Fish and Wildlife Service and the National Marine Fisheries Service both warn that these costs are "highly subjective and are not the product of rigorous economic analysis". In addition, while the recovery plan will list a "menu" of activities and projects that may contribute to the recovery of a species, not all the actions proposed are eventually carried out. There is no legal requirement that recovery plans be implemented and many of the actions proposed are never carried out.

However, many actions that contribute to the recovery of a species may not be included in recovery plans. Many actions that contribute to recovery may be carried out separate from the recovery plan. In many cases a recovery plan is not needed. Some species benefit by simply prohibiting their actual take. One such example is the gray whale which is no longer listed. The gray whale recovered after the imposition of an international ban on whaling.

The increase in populations of the California Condor are primarily due to the efforts of the private nonprofit organization, The Peregrine Fund, which breeds rare birds of prey. The Hawaiian Gardenia has benefited from a State funded program to control nonnative plant pests. Efforts to protect and restore wetlands have greatly contributed to the recovery of various species of fish and birds.

In conclusion, it is probably impossible to quantify the costs of recovery since many costs may be indirect or hidden in other expenditures and the estimated costs found in recovery plans may bear no actual relationship to reality.

For further information contact: Elizabeth Megginson, Counsel, 225-7800.

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Federal and State Expenditures for Endangered and Threatened Species
1991-1997

Taken from the Annual Report of the Fish and Wildlife Service
and from budget documents submitted to the Committee on Resources by the Fish and Wildlife Service.
The Annual Report to Congress substantially under reports ESA related spending. The expenditures reported are only those that can be related to a specific species and does not include general administrative and salary expenses or other such costs.
A few agencies with very small expenditures have been omitted.

Prepared by the Committee on Resources, Majority Staff, Office of the Chief Counsel
For further information call 202-225-7800

Agency	1991	1992	1993	1994	1995[1]	1996 Estimate	1997 Estimate	Total
Fish and Wildlife Service real expenditures[2]	$124,550,000	$137,235,000	$151,781,000	$151,529,000	$191,443,000			$756.5 million over 5 years
Fish and Wildlife Service reported on specific species[3]	$54,517,000	$55,068,000	$58,461,000	$44,207,000[4]	Not available	N/A		$212.3 million over 4 years
National Biological Service[5]				$10,725,000	N/A			$10.7 million in 1 year

Agency	1991	1992	1993	1994	1995[1]	1996 Estimate	1997 Estimate	Total
Bureau of Land Management	$6,884,000	$10,490,000	$14,484,000	$14,642,000	$17,992,000[6]	$16,500,000	$16,581,000	$97.6 million over 7 years
Bureau of Reclamation	$11,256,000	$23,248,000	$33,433,000	$27,951,000	N/A			$96 million over 4 years
National Park Service	$3,809,000	$3,830,000	$3,282,000	$3,901,000	N/A			$15 million over 4 years
Bureau of Indian Affairs	$3,460,000	$2,968,000	$3,684,000	$4,765,000	N/A			$15 million over 4 years
Forest Service	$19,389,000	$21,808,000	$39,248,000	$21,100,000	$23,542,000[7]	$21,750,000	$21,750,000	$169 million over 7 years
National Marine Fisheries Service	$3,605,000	$8,500,000	$8,600,000	$17,000,000	$21,100,000	$21,200,000	$23,500,000	$103.7 million over 7 years
Dept. of Defense	$7,534,000	$11,000,000	$11,568,000	$16,318,000	$19,523,000			$66 million over 5 years

Agency	1991	1992	1993	1994	1995[1]	1996 Estimate	1997 Estimate	Total
Army Corps of Engineers	$7,675,000	$83,368,000	$33,960,000	$51,829,000	$94,825,000	$120,000,000	$144,455,000	$536 million over 7 years
Dept. of Energy[8]		$24,790,000	$32,490,000	$11,990,000	$21,110,000	$20,710,000	$21,340,000	$132.4 million over 6 years
Bonneville Power Administration[9]		$89,600,000	$169,900,000	$189,300,000	$252,100,000	$265,000,000	$271,000,000	$1.336 billion over 6 years
APHIS	$630,000	$1,049,000	$2,617,000[10] $1,744,000	$1,714,000	N/A			$6 million over 4 years
Environmental Protection Agency	$2,918,000	$2,862,000	$2,862,000	$636,000[11]	N/A			$6.3 million over 4 years
Fed. Energy Regulatory Commission	[12]	$232,000	$512,000	$322,000	N/A			$1 million over 3 years
Fed. Highway Administration	$5,424,000	$1,882,000	$2,108,000	$6,950,000[13]	N/A			$16 million over 4 years

Agency	1991	1992	1993	1994	1995[1]	1996 Estimate	1997 Estimate	Total
Fed. Aviation Administration	$5,000	$45,000	$4,271,000	$175,000	N/A			$4.5 Million over 4 years
Tennessee Valley Authority	$202,000	$200,000	$230,000	N/A	N/A			$632,000 over 3 years
Natural Resource Conservation Service[14]	[15]	[16]	$1,119,000	$2,090,000	N/A			$3.2 million in 2 years
State reports[17]	$64,126,700	$131,450,700 [18]	$13,025,500	$14,500,000	N/A			$223 million over 4 years
Total with FWS real costs	$261,462,700	$554,557,700	$529,174,000	$547,437,000	$641,635,000	$465,160 million	$501,625 million	$3.706 billion over 7 years
Totals with FWS reported costs by species	$191,434,700	$472,390,700	$435,854,000	$440,115,000				

1. The annual report to Congress has not been compiled or calculated for 1995. These numbers were submitted directly to the Committee by each agency upon request.

2. This computation includes Ecological Services for ESA and enforcement of ESA, habitat restoration, 25% of wildlife refuge operations and maintenance, but not land acquisition. Does not include fisheries, special ESA funds or grants to states, even if ESA related.

3. These amounts come from the Annual Report Congress and are only those expenditures that can be identified for a particular species and do not include other general ESA program costs.

4. The raw data for this entry was submitted to the Committee but was not totaled, therefore this amount is an estimate based on the raw data.

5. Until 1994, the research conducted on endangered and threatened species was distributed in various agency budgets. In 1994, the Secretary created the National Biological Survey, later the name was changed to the National Biological Service. All research funds were then transferred into the NBS. Therefore, 1994 is the first year for which this figure was reported separately.

6. Taken from the BLM Budget Justification.

7. Taken from the Forest Service budget justification. Total request for Wildlife and Fisheries Habitat Management was $93,182,000 for 1995, $85,500,000 for 1996, and $91,000,000 for 1997. This category includes threatened and endangered species. The figures for 1995, 1996, and 1997 are the actual appropriation or budget request for the threatened and endangered species program within the Wildlife and Fisheries category.

8. The Department of Energy did not submit information for the Annual Report to Congress for 1991, 1992, 1993. This information was provided directly to the Committee by the DOE.

9. BPA did not contribute to the Fish and Wildlife Service report for 1991-92. This information was submitted directly to the Committee by BPA. According to BPA the fish and wildlife budget agreement announced by the administration in October, 1995, calls for Bonneville's annual fish and wildlife expenses to average $435 million per year during the period fiscal years 1995 2001. This amount includes ESA related expenditures. Although Bonneville reimburses other federal agencies for certain expenditures, these figures do not reflect double counting of these expenditures.

10. In 1993, APHIS (Animal and Plant Health Inspection Service, Dept. of Agriculture) provided a total of $1,744,000 for those expenditures that were related to one species but indicated that the total for ESA was actually $2,617,000 because many of their costs were attributable to more than one species. This is probably a more honest appraisal of actual total ESA related costs.

11. In the three prior years the EPA always included in their submittal amounts for funding ESA related programs including

cooperative agreements with the states, salaries and benefits, and contracts and expenses. In 1993, they changed their reporting and only submitted amounts allocated to a specific species.

12. In 1991, FERC wrote a letter explaining that their ESA related expenditures were in salaries and contract expenses related to project reviews and were not broken down by species. Therefore, while they had expenditures, they did not report them because their record keeping methods did not fit into the reporting requirements.

13. There was a substantial disparity in the amount submitted to the Committee by the FHA and the amount submitted to the Fish and Wildlife Service. It is unclear why the disparity. This figure comes from documents submitted directly to the Committee by the FHA.

14. The Natural Resources Conservation Service was formerly the Soil Conservation Service.

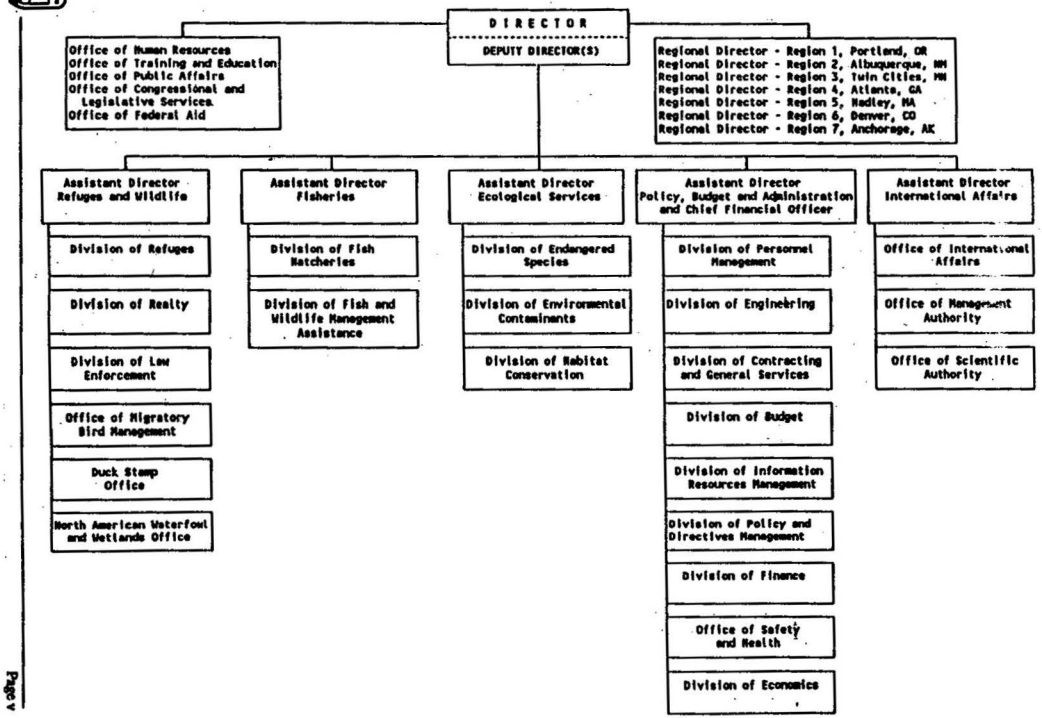
15. SCS did not maintain records on a species by species basis at that time. However, they did participate in ESA by using their field offices to provide information and technical assistance to agriculture on endangered and threatened species protection.

16. No report filed for 1992 by SCS.

17. State reporting was voluntary and not all states submitted the information as requested or in the same format. The information is compiled with the assistance of the International Association of Fish and Wildlife Agents.

18. This included a significant amount for land acquisition.

U.S. FISH AND WILDLIFE SERVICE
ORGANIZATION



Source: Fish and Wildlife Service Budget Justification

Resource Management-Appropriation Language Citation

Wildlife Protection laws — Federal Only

RESOURCE MANAGEMENT

AUTHORIZATIONS LANGUAGE CITATION

Agricultural Credit Act of 1987, P.L. 100-233. Section 616 authorizes the Secretary of the Department of Agriculture to transfer lands, or interest therein, to Federal or State agencies for conservation purposes. In response to this authority, the Fish and Wildlife Service screens inventory lands to determine when such lands would be of benefit to the National Wildlife Refuge System and makes transfer recommendations where appropriate.
• Authorization of Appropriations: N/A

Airborne Hunting Act, 16 U.S.C. 742 j-l. Section 13 of the Fish and Wildlife Act of 1956 is commonly referred to as the Airborne Hunting Act or Shooting from Aircraft Act, and prohibits taking or harassing wildlife from aircraft, except when protecting wildlife, livestock, and human health or safety as authorized by a federal- or state-issued license or permit.
• Authorization of Appropriations: N/A

Alaska National Interest Lands Conservation Act of 1980, 16 U.S.C. 410hh-3233, 43 U.S.C. 1602-1784. Provides for the designation and conservation of certain public lands in Alaska, including designation of units of the National Wildlife Refuge System, and provides for the continuing subsistence needs of the Alaska Natives.
• Authorization of Appropriations: N/A

Alaska Native Claims Settlement Act, 43 U.S.C. 1601-1624. Requires the Secretary of the Interior to withdraw up to 80 million acres of existing public land for consideration as new national wildlife refuges.
• Authorization of Appropriations: N/A

Antarctic Conservation Act of 1978, 16 U.S.C. 2401. Provides for the conservation and protection of the fauna and flora of Antarctica, and of the ecosystem upon which such flora and fauna depend.
• Authorization of Appropriations: N/A

Archaeological Resources Protection Act of 1979, 16 U.S.C. 470aa-470ll, amended by P.L. 100-588. Provides for protection of archaeological resources and sites which are on public and Indian lands, and for increased cooperation and exchange of information between government authorities, the professional archaeological community, and private collectors having collections of archaeological resources and data obtained before October 31, 1979.
• Authorization of Appropriations: N/A

Atlantic Coastal Fisheries Cooperative Management Act, P.L. 103-206. Provides for programs similar to the Atlantic Striped Bass Conservation Act, but extends programs to other species.
• Authorization of Appropriations: Expired September 30, 1996

Atlantic Striped Bass Conservation Act, 16 U.S.C. 1851 note, as amended. Authorizes studies, and provides for activities to restore Atlantic striped bass, including, under certain conditions, declaration by the Secretaries of the Interior and Commerce of a moratorium on fishing for these species in coastal waters of States that do not implement and enforce the interstate management plan for striped bass.
• Authorization of Appropriations: Expired September 30, 1994

Bald and Golden Eagle Protection Act, as amended, 16 U.S.C. 668-668d. This Act makes it illegal to import, export or take bald or golden eagles, or to sell, purchase, or barter their parts, nests, or eggs, or products made from the animals, their nests or eggs.
• Authorization of Appropriations: N/A

Chehalis River Basin Fishery Resources Study and Restoration Act of 1990, P.L. 101-452. Authorizes a joint Federal, State, and Tribal study for the restoration of the fishery resources of the Chehalis River Basin, Washington.
• Authorization of Appropriations: N/A

Clean Water Act, as amended, 33 U.S.C. 1251-1387. Section 404 (m) authorizes the Fish and Wildlife Service to provide comments addressing permit applications submitted to the U.S. Army Corps of Engineers for the discharge of dredged or fill material into navigable waters of the United States. Section 208(i) authorizes the Fish and Wildlife Service to provide technical assistance to States in developing

"best management practices" as part of its water pollution control programs and to continue with the National Wetlands Inventory. Section 320 authorizes the establishment of a State/Federal cooperative program to nominate estuaries of national significance and to develop and implement management plans to restore and maintain the biological and chemical integrity of estuarine waters.
• Authorization of Appropriations: N/A

Coastal Barrier Resources Act (CBRA) of 1982 as amended by the Coastal Barrier Improvement Act (CBIA) of 1990, 16 U.S.C. 3501. Requires the Fish and Wildlife Service to produce revised maps of the Coastal Barrier Resources System, submit a study to Congress on the need to include the West Coast in the System, and submit draft maps of the West Coast to accompany the report. Requires the Secretary of Interior to lead an interagency task force to provide recommendations to Congress for legislative action and Federal policies on developed and undeveloped coastal barriers.
• Authorization of Appropriations: Expires September 30, 1998

Colorado River Storage Project Act, 43 U.S.C. 620. Provides that facilities will be built and operated to mitigate losses of, and improve conditions for, fish and wildlife in connection with the Colorado River Storage.
• Authorization of Appropriations: N/A

Comprehensive Environmental Response, Compensation, and Liability Act, as amended, 42 U.S.C. 9601, et seq. Requires responsible parties, including Federal landowners, to investigate and clean up releases of hazardous substances, and trustees for natural resources to assess and recover damages for injury to natural resources from releases of hazardous substances and use the damages for restoration, replacement or acquisition of equivalent natural resources..
• Authorization of Appropriations: N/A
• Provides permanent authorization to appropriate receipts from responsible parties

Emergency Wetlands Resources Act, 16 U.S.C. 3931, as amended by P.L. 102-440. This Act permits the collection of entrance fees, thirty percent of which may be used for refuge operations and maintenance, and requires that the Secretary of Interior establish and periodically review a National wetlands priority conservation plan for Federal and State wetlands acquisition, complete National Wetlands Inventory maps for the contiguous United States by September 30, 1998, update the report on wetlands status and trends by September 30, 1990, and at 10-year intervals thereafter, produce wetland maps of Alaska by September 30, 2000, produce a digital database for the United States by September 30, 2004, and archive and make final maps and digitized data available for distribution.
• Authorization of Appropriations: N/A

Endangered Species Act of 1973, 16 U.S.C. 1531-1544, as amended. This Act prohibits the importation, exportation, taking, and commercialization in interstate or foreign commerce of fish and wildlife and plants that are listed as threatened or endangered species. The Act provides for adding species to the list of threatened and endangered wildlife and plants, and for preparing and implementing recovery plans for their conservation. It provides for interagency cooperation with other Federal agencies and issuing permits for otherwise prohibited activities. The Act also implements the provisions of the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES).
• Authorization of Appropriations: Expired September 30, 1992

Federal Insecticide, Fungicide and Rodenticide Control Act, 7 U.S.C. 136-136y. Requires registration of pesticides to avoid unreasonable adverse effects to humans or the environment.
• Authorization of Appropriations: N/A

Federal Power Act, 16 U.S.C. 791a et seq. Requires that each license for hydropower projects issued by the Federal Energy Regulatory Commission include fishways prescribed by the Secretary of the Interior or Commerce, and conditions for the protection, mitigation and enhancement of fish and wildlife based on recommendations of the Fish and Wildlife Service and other agencies.
• Authorization of Appropriations: N/A

Fish and Wildlife Act of 1956, as amended, 16 U.S.C. 742(a)-754. Establishes a comprehensive national fish and wildlife policy and authorizes the Secretary of the Interior to take steps required for the development, management, advancement, conservation, and protection of fisheries resources and

wildlife resources through research, acquisition of refuge lands, development of existing facilities, and other means.
• Authorization of Appropriations: N/A

Fish and Wildlife Conservation Act, as amended, 16 U.S.C. 2901-2911. Directs the Secretary of the Interior to undertake research and conservation activities, in coordination with other Federal, state, international and private organizations, to assist in fulfilling his responsibilities to conserve migratory nongame birds under existing authorities. Specifically, the Secretary is required to do the following for all species, subspecies , and populations of migratory nongame birds: monitor and assess population trends and status, identify effects of environmental change and human activities, identify species in need of additional conservation actions, and identify conservation actions to assure perpetuation of these species.
• Authorization of Appropriations: Expires September 30, 1997

Fish and Wildlife Coordination Act, 16 U.S.C. 661-666(e), as amended. Directs the Fish and Wildlife Service to investigate and report on proposed Federal actions that affect any stream or other body of water and to provide recommendations to minimize impacts on fish and wildlife resources.
• Authorization of Appropriations: N/A

Fish-Rice Rotation Farming Program Act of March 15, 1958, 16 U.S.C. 778-778c, authorizes the Secretary of the Interior to establish experimental stations for research and experimentation.
• Authorization of Appropriations: N/A

Floodplain Management, Executive Order 11988. Requires that Federally-owned floodplains proposed for lease or conveyance to non-Federal public or private parties be protected through restricting future activities that would harm the floodplain resource in the conveyance or withhold such properties from lease or disposal.
• Authorization of Appropriations: N/A - Executive Order

Food Security Act of 1985 as amended by the Food, Agriculture, Conservation, and Trade Act of 1990 (P.L. 101-624),16 U.S.C. 3801-3845. Requires the Secretary of Agriculture to consult with the Secretary of Interior on the identification of wetlands, determinations of exemptions, and issuance of regulations to carry out the provisions of this Act. Requires the Fish and Wildlife Service to concur in wetland mitigation plans in association with minimal effect exemptions and to concur in conservation plans for lands proposed for inclusion in the Wetlands Reserve Program. Establishes a program to protect and restore wetlands on Farmers Home Administration inventory property and provides for the Fish and Wildlife Service to identify such wetlands.
• Authorization of Appropriations: N/A

Great Lakes Critical Programs Act of 1990, (P.L. 101-596). Contains several titles; provisions directly authorizing Service activities are contained in title III, the "Lake Champlain Special Designation Act of 1990"
• Authorization of Appropriations: Expired September 30, 1995

Great Lakes Fish and Wildlife Restoration Act of 1990, P.L. 101-537. Authorizes the Service to conduct a study of factors affecting Great Lakes fishery resources, to develop recommended corrective actions, and to establish coordination and fishery resource offices for the purpose of assisting the Great Lakes Commission, States, Indian Tribes, and other interested parties in cooperative conservation, restoration and management of the fish and wildlife resources and habitats of the Great Lakes Basin.
• Authorization of Appropriations: Expired September 30, 1995

Great Lakes Fishery Act of 1956, 16 U.S.C. 931-939. Implements the Convention on Great Lakes Fisheries between the United States and Canada.
• Authorization of Appropriations: N/A

International Environment Protection Act, 22 U.S.C. 251, 2151g, 2452. Authorizes the President to furnish assistance to countries in protecting and maintaining wildlife habitats for endangered species and in developing wildlife management and plant conservation programs. Authorizes interchanges between the U.S. and other countries of scientists and other experts in the fields of environmental science and management.
• Authorization of Appropriations: N/A

Junior Duck Stamp Conservation and Design Program Act (P.L. 103-340). Authorizes the Secretary to carry out the program, which provides environmental education opportunities to school children relating to the conservation and management of migratory birds; allows an annual Junior Duck Stamp competition, and provides for the licensing and marketing of winning designs, with proceeds used for awards and scholarships to participants.
• Authorization of Appropriations: Expires September 30, 2000

Klamath River Basin Fishery Resources Restoration Act, 16 U.S.C. 7460aa, requires the Secretary of the Interior to develop and implement a restoration plan for the Klamath River Basin.
• Authorization of Appropriations: Expires September 30, 2006

Lacey Act Amendments of 1981, 18 U.S.C. 42; 16 U.S.C. 3371-3378. Provides authority to the Secretary of Interior to designate injurious wildlife and ensure the humane treatment of wildlife shipped to the United States. It prohibits the importation, exportation, transportation, sale, or purchase of fish and wildlife taken or possessed in violation of state, Federal, Indian tribal, and foreign laws. The Amendments strengthen enforcement of Federal wildlife laws and improve Federal assistance to the States and foreign governments in the enforcement of their wildlife laws.
• Authorization of Appropriations: N/A

Magnuson Fishery Conservation and Management Act, as amended, 16 U.S.C. 1801-1882. Provides a framework for managing fisheries within the Exclusive Economic Zone, in part through establishment of eight Regional Fishery Management Councils on each of which the U.S. Fish and Wildlife Service is a non-voting member.
• Authorization of Appropriations: N/A

Marine Mammal Protection Act, 16 U.S.C. 1361-1407. Establishes a moratorium on the taking and importation of marine mammals, including parts and products, and defines Federal responsibility for conservation of marine mammals, with management authority vested in the Department of the Interior for the sea otter, walrus, polar bear, dugong, and manatee.
• Authorization of Appropriations: Expires September 30, 1997

Migratory Bird Conservation Act, 16 U.S.C. 715-715d. Authorizes the Secretary of the Interior to conduct investigations and publish documents related to North American birds. Establishes a Migratory Bird Conservation Commission to approve areas recommended by the Secretary for acquisition. The MBCC also approves wetlands conservation projects recommended by the North American Wetlands Conservation Council under the North American Wetlands Conservation Act.
• Authorization of Appropriations: N/A

Migratory Bird Hunting and Conservation Stamp Act, 16 U.S.C. 718. This Act, commonly referred to as the "Duck Stamp Act," requires waterfowl hunters, 16 years of age or older, to purchase and possess a valid Federal waterfowl hunting stamp prior to taking migratory waterfowl.
• Authorization of Appropriations: N/A

Migratory Bird Treaty Act of 1918, as amended, 16 U.S.C. 703-712. This Act implements four international treaties that individually affect migratory birds common to the United States, Canada, Mexico, Japan, and the former Soviet Union. The Act established the federal responsibility for protection and management of migratory and nongame birds, including the establishment of season length, bag limits, and other hunting regulations, and the issuance of permits to band, possess or otherwise make use of migratory birds. Except as allowed by implementing regulations, this Act makes it unlawful to pursue, hunt, kill, capture, possess, buy, sell, purchase, or barter any migratory bird, including the feathers or other parts, nests, eggs, or migratory bird products.
• Authorization of Appropriations: N/A

National Aquaculture Act of 1980, 16 U.S.C. 2801-2810. Directs the Secretary of the Interior to participate in the development of a National Aquaculture Development Plan and authorizes research, development, and other activities to encourage the development of aquaculture in the United States.
• Authorization of Appropriations: Expired September 30, 1993

National Environmental Policy Act of 1969, as amended, 42 U.S.C. 4321 et. seq. Requires the Service to examine the environmental impacts of its actions, incorporate environmental information, and utilize public participation in the planning and implementation of all actions. Requires the Service to integrate NEPA with other planning requirements, and prepare appropriate NEPA documents to facilitate better environmental decision making. Requires the Service to review and comment on Federal agency environmental plans/documents when the Service has jurisdiction by law or special expertise with respect to any environmental impacts involved.
• Authorization of Appropriations: N/A

National Fish and Wildlife Foundation Establishment Act, 16 U.S.C. 3701 et. seq. Enacted in 1984, the Act established a federally chartered, nonprofit corporation to encourage and administer donations of property, for the benefit of the U.S. Fish and Wildlife Service programs and other activities aimed at the conservation of fish, wildlife, and plant resources.
• Authorization of Appropriations: Expires September 30, 1998

National Historic Preservation Act of 1966, as amended, 16 U.S.C. 470-470b, 470c-470n. This Act directs Federal agencies to preserve, restore, and maintain the historic cultural environment of the area.
• Authorization of Appropriations: N/A

National Wildlife Refuge System Administration Act of 1966, 16 U.S.C. 668dd-668ee. Constitutes an "Organic Act" for the National Wildlife Refuge System and provides guidelines and directives for administration and management of all areas in the system.
• Authorization of Appropriations: N/A

New England Fishery Resources Restoration Act of 1990, P.L. 101-593. Authorizes the Service to formulate, establish, and implement cooperative programs to restore and maintain nationally significant interjurisdictional fishery resources in New England river systems.
• Authorization of Appropriations: N/A

Nonindigenous Aquatic Nuisance Species Prevention and Control Act of 1990, P.L. 101-646. Authorizes the Service to develop and implement a program to prevent and control infestations of the coastal inland waters of the United States by zebra mussel, and other nonindigenous aquatic nuisance species. This Act also establishes the National Coastal Wetlands Planning, Protection, and Restoration Program within the Sport Fish Restoration Account for projects authorized by the North American Wetlands Conservation Act in coastal states.
• Authorization of Appropriations: Expired September 30, 1995

North American Wetlands Conservation Act of 1989, P.L. 101-233. This Act provides for partnerships between public agencies and other interests in Canada, Mexico and the U.S. to: protect, enhance, restore, and manage wetland ecosystems and other habitats for migratory birds and other fish and wildlife; maintain current or improved distributions of migratory bird populations; and sustain an abundance of waterfowl and other migratory birds consistent with the North American Waterfowl Management Plan and international obligations with other countries. Requires 5-year update to the Plan and detailed reporting of projects. Requires 50:50 matching funds.
• Authorization of Appropriations: Expires September 30, 1998

Oil Pollution Act of 1990, P.L. 101-380. Requires consultation with the Fish and Wildlife Service for development of a "fish and wildlife response plan, ...for the immediate and effective protection, rescue, and rehabilitation of, and the minimization of risk of damage to, fish and wildlife resources and their habitat that are harmed or that may be jeopardized by an oil discharge.
• Authorization of Appropriations: N/A to FWS Appropriations

Protection of Wetlands, Executive Order 11990. Requires that Federally-owned wetlands proposed for lease or conveyance to non-Federal public or private parties be protected through restricting any future uses that would degrade or harm the wetland resource in the conveyance or withhold such properties from lease or disposal.
• Authorization of Appropriations: N/A - Executive Order

Public Utility Regulatory Policies Act of 1978, 16 U.S.C. 2602-2645, and Energy Security Act of 1980, 16 U.S.C. 792-828(c). Directs that any exemption from licensing granted for a small hydroelectric

power project must comply with terms and conditions that Federal or State fish and wildlife agencies have determined are appropriate to prevent loss of, or damage to, fish and wildlife resources. The Fish and Wildlife Service is also authorized to investigate and report on effects of hydropower development on fish and wildlife during the licensing process of the Federal Energy Regulatory Commission.
• Authorization of Appropriations: N/A

Recreational Use of Fish and Wildlife Areas, 16 U.S.C. 460k-460k-4. Commonly known as the Refuge Recreation Act of 1962, authorizes the Secretary of the Interior to administer refuges, hatcheries, and other conservation areas for recreational use when such use does not interfere with the primary purpose for which these areas were established.
• Authorization of Appropriations: N/A

Resource Conservation Recovery Act, P.L. 94-580, 42 U.S.C. 6901, Enacted October 21, 1976; Amended: 1978,1980, 1984. Regulates the treatment, transportation, storage, and disposal of solid and hazardous wastes. The Service is required to comply with standards for waste generated at Service facilities.
• Authorization of Appropriations: N/A

Salmon and Steelhead and Conservation and Enhancement Act of 1980, 16 U.S.C. 3301, 11-15, 21-25, 31-36, 41-45. This Act allows for improved management and enhancement planning to help prevent a further decline of salmon and steelhead stocks, and to assist in increasing the supply of these stocks within the Columbia River conservation area and the Washington conservation area.
• Authorization of Appropriations: N/A

Sikes Act, as amended, 16 U.S.C. 670a-670o. Authorizes the Secretary of the Interior to cooperate with the Department of Defense, Department of Energy, National Aeronautics and Space Administration, Bureau of Land Management, and State agencies in planning, developing, maintaining and rehabilitating Federal lands for the benefit of fish and wildlife resources and their habitat.
• Authorization of Appropriations: Expired September 30, 1993

Surface Mining Control and Reclamation Act of 1977, 30 U.S.C. 1201 et. seq. Requires the Secretary of the Interior to regulate surface mining and reclamation at existing and future mining areas. The Fish and Wildlife Service provides technical assistance for fish and wildlife aspects of the Department's programs on active and abandoned mine lands.
• Authorization of Appropriations: N/A

Surplus Grain for Wildlife Act of 1961, 7 U.S.C. 447-449. Authorizes the Secretary of the Interior to request surplus grain from the Secretary of Agriculture for the emergency feeding of resident game birds, other resident wildlife and migratory birds threatened by adverse weather conditions or other factors destructive to wildlife resources.
• Authorization of Appropriations: N/A

Treasury, Postal Service and General Government Appropriations Bill for Fiscal Year 1991 - Pay Act Public Law 101-509. Establishes mandatory retirement age for law enforcement officers, increased uniform allowances, set overtime rates and special rates for law enforcement officers, and establishes pay differentials for law enforcement officers in selected cities.
• Authorization of Appropriations: N/A

Water Resources Development Act of 1976, 90 Stat. 2921. Authorizes the Lower Snake River Compensation Plan to mitigate for fish and wildlife losses caused by power generation features at four Corps of Engineers dams on the Lower Snake River in Washington.
• Authorization of Appropriations: N/A

Watershed Protection and Flood Prevention Act, 16 U.S.C. 1001-1009. Provides for notification of the Secretary of the Interior by the Secretary of Agriculture when furnishing assistance to local organizations under provisions of the Watershed Protection and Flood Prevention Act.
• Authorization of Appropriations: N/A

Wild Bird Conservation Act of 1992, P.L. 102-440. Promotes the conservation of exotic birds by encouraging wild bird conservation and management programs in countries of origin, by ensuring that all trade in such species involving the United States is biologically sustainable and to the benefit of the species; by limiting or prohibiting imports of exotic birds when necessary to ensure that exotic wild populations are not harmed by removal for the trade.
• Authorization of Appropriations: Expired September 30, 1995

Myths of Jobs vs. Resources:

ENVIRONMENTAL PROTECTIONS AND ECONOMIC GROWTH

California Senate Office of Research
March 1996

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California State Senate

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March 1996

Dear Colleagues:

We are pleased to provide you a new report from the Senate Office of Research (SOR), "Myths of Jobs vs. Resources: Environmental Protections and Economic Growth."

This significant study analyzes the economic impact of environmental laws and regulations on job growth in the United States and California, and asks the question: "Is there empirical evidence supporting the position that strong environmental laws are incompatible with strong economic performance?"

The report reviews economic data for the nation as a whole and separately for California. The study also examines the restructuring of the economy in the past twenty years to determine whether losses in industrial employment are related to strict environmental regulation. Specifically, the impact of air pollution regulations and of spotted owl protections are reviewed to analyze their effect on local and statewide economies.

Central to the report is a review of the work done by Dr. Stephen Meyer of the Massachusetts Institute of Technology Project on Environmental Politics and Policy which compared states beginning in 1973 on the basis of the strength of their environmental laws and economic performances. In his original study and after several follow-ups, Meyer was able to ascertain that there is no relationship between strong environmental laws and weak economic growth. Instead, he found the contrary to be true: that states with the strongest environmental laws tended to have the strongest economies. The single greatest indicator of poor growth in gross state product was found to be the degree of the states' dependence on resource-depleting industries.

In reviewing California data, supplied by the Center for the Continuing Study of the California Economy, the SOR report concludes that while California has been shaken by a severe economic downturn since 1990, this recession has been caused principally by defense base closures and cutbacks in both defense and civilian aerospace expenditures, and not by factors related to environmental regulations.

We hope the findings in this report will offer you interesting, illuminating and useful information as you weigh decisions affecting state economic and environmental policies.

Sincerely,

BILL LOCKYER
President pro Tempore
California State Senate

Myths of Jobs vs. Resources:

ENVIRONMENTAL PROTECTIONS AND ECONOMIC GROWTH

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Executive Summary

Jobs Versus the Environment

The American economy for 25 years has been marked by a decline in worker well-being punctuated by a shift in jobs from industries to services. Higher-paying manufacturing jobs that once formed the backbone of the American middle class have been evaporating -- 3 million of them lost in 15 years.

Some U.S. firms, attracted to lower wages beyond the borders, are shifting production to lesser-developed countries, especially Mexico and Brazil. Where U.S. jobs have grown, they often have been rooted in the lower-paying service sector -- in clerical work, sales, or food processing, for instance.

There is a common assumption that U.S. environmental regulations, which expanded as manufacturing declined, share a responsibility for these market shifts. Thirty-three percent of Americans believe environmental regulations will negatively impact their employment opportunities. Some may assume, for instance, that environmental protections prodded employers into closing down U.S. plants and/or seeking less-regulated workplaces elsewhere.

Minimal Impact on Plant Closings

However, a number of respected studies, including a multi-year data-collection survey by the U.S. Department of Labor, have found environmental regulations have had minimal impact on plant closings and job losses. The Labor Department survey, based on information supplied by employers, found just 0.1 percent of mass layoffs were triggered by environmental

protections -- and those tended to be in highly polluting industries. The data suggest 40 times more job losses have resulted from ownership changes in leveraged buyouts and mergers than from controlling pollution.

While anti-pollution regulations could be among several factors that make certain locations unprofitable, evidence shows environmental protections by themselves are not substantial enough to cause the shutdown of an otherwise healthy plant.

U.S. Businesses and Foreign Soil

Nor do environmental rules appear to be propelling U.S. businesses to foreign soil. A 1992 study by economist Timothy Koechlin found that market size, wages, taxes, political stability, access to European markets and distance from the United States are the determining factors in decisions by U.S. firms to invest capital in other countries. Nearly 80 percent of U.S. manufacturing investments abroad in 1992 were made in other highly developed nations. The second-highest share of U.S. dollars went to Germany, home of the strictest pollution controls in the world. Much of the remaining 20 percent of U.S. capital invested elsewhere went to Mexico, with close proximity to the United States, and Brazil, with a large internal market of its own -- supporting the finding that market size and location are prime factors in foreign investing.

Environmental Rules Create Jobs

Rather than dooming domestic employment, environmental protections spawn their own jobs, focused heavily in blue-collar work. They create manufacturing, transportation, communications and utility employment. Eighty-nine percent of these environmental jobs are in the private sector. At worst, research suggests, the role environmental protections play in manufacturing job losses has been insignificant.

Controversies over the protection of endangered species seem to epitomize the entire debate. The number of listed endangered species is currently around 800 with thousands of candidates awaiting listing. Negative effects of environmental laws should be easily measurable as anecdotal accounts of negative economic impacts are widespread. However, this has not proven to be the case when studied. The data show that endangered species listings have not depressed economic development activity as measured by growth in construction employment and gross state products from the inception of the federal Endangered Species

Act in 1975 through 1990, the last year for which complete data are available.

Nowhere has the controversy that pits jobs against resources exploded with more force than over the spotted owl protections in the old-growth national forests of the Pacific Northwest. An estimated 15,000 to 30,000 job losses can be blamed on limits on the harvest of old-growth timber required by the federal Endangered Species Act.

Exploring the Spotted Owl Controversy

But data suggest market forces play an even greater role in paring back jobs in the wood-products industry. Productivity gains and sustainable-yield practices -- necessary to ensure an adequate supply of harvestable timber into the future -- already had doomed or eliminated thousands of wood-products jobs when the spotted owl protections became law in 1990.

From 1980 through 1988, finished timber output rose 19 percent, but automation and other productivity improvements during those years cost nearly 14,000 jobs. Reacting to the heavy pace of the harvest during the 1980s, and a need to sustain timber growth, the U.S. Forest Service drafted management plans that threatened at least half as many jobs as the spotted owl protections themselves. Then, in the 1990s, residential construction nose-dived, shrinking demand for wood products and spurring the layoff of 20,000 industry workers.

Shifting Timber Jobs to the South

Interestingly, as timber-harvesting capacity tightened in the Northwest, it mushroomed in the South. While capacity dropped by 34 percent in the Northwest between 1978 and 1990, it climbed 121 percent in the southern states. Meanwhile, Oregon in the last year has added 100,000 jobs -- 20 percent of them in the high-technology industry, which has surpassed timber as the state's leading employer. Even as the number of timber jobs declined in Oregon, the average wage rose. Yet Oregon remains the nation's timber basket, five years after spotted owl protections. This is partly because timber mills have retooled wood-processing procedures to accommodate smaller logs more efficiently. Since January of 1993, Oregon and Washington have added about 4,600 jobs in the forest-products industry, according to Washington state employment economists.

For these reasons, overall, the economic impacts of the spotted owl protections appear to be neutral despite the harm they may pose to some timber communities. In weighing their overall effects, it must be remembered that Oregon fisheries, which spawn tens of thousands of jobs, also rely on management of the timber harvest to protect fish habitats.

Net Job Increases

On balance, available studies indicate environmental protection spending has led to a small net increase in jobs in the U.S. economy. Job losses as a result of resources conservation can be subtracted from job gains that result from environmental technologies and services.

Those job gains are significant in their own right: The California Employment Development Department (EDD) reports California can expect 200,000 environmental workers by 1996. EDD expects environmental cleanup to become a $1 trillion business worldwide by the year 2000. Californians account for about 18 percent of the U.S. environmental industry work force; the state's share of the industry could jump from $19.3 billion in 1992 to nearly $27 billion by 1997.

Germany a Leading Exporter of Environmental Expertise

Domestic companies have been exposed to stricter environmental regulations for longer periods than businesses in any other nation. In theory, this should offer lucrative opportunities for exporting environmental expertise to countries now eager for it. However, Germany is first in line. As much as 70 percent of the air pollution control equipment sold in the United States is produced by foreign companies. Germany has surpassed the United States as the largest exporter of environmental products and services.

While environmental spending has created jobs, it also has meant losses in other goods and services that, through regulation, are restricted or no longer available. Certain industries, for instance, are highly susceptible to regulatory costs. These include some pesticide manufacturers, chemical firms and lead processors. A 1990 RAND study estimated environmental regulations slowed economic growth by about 0.2 percent per year between 1974 and 1985. However, the study did not measure job gains.

Overall, the numerous studies in this area suggest the net impact of environmental protections on the U.S. economy is not significant.

California's Recession

California's severe 1990-93 recession was in full swing even as the rest of the nation began its recovery. While the country was adding 3 million jobs between 1991 and 1993, California lost another 450,000. However, the state remained competitive, attracting a record amount of venture capital in 1993 and again in the first quarter of 1994.

Further, its job losses were not spread evenly across the state, but concentrated in Southern California -- particularly the Los Angeles basin, which absorbed 70 percent of them. This phenomenon strongly suggests specific factors, not a general deterioration, accounted for the state's lost employment. The deepest losses in the manufacturing sector were in aerospace, where more than 130,000 jobs disappeared between 1990 and 1993 due primarily to national defense cuts. High-technology employment also fell heavily in California -- by 11.6 percent -- but the workers who remained were more productive. In 1993, high-tech firms in the Silicon Valley reached record sales and profits.

The Los Angeles Basin

At first blush, a case might be made that the Los Angeles basin absorbed the brunt of the recession's job losses because its air pollution regulations are the most stringent in the nation. But the evidence does not bear out that theory.

Strict controls were developed and implemented by the South Coast Air Quality Management District during the 1980s. But the Institute for Economic and Environmental Studies at California State University, Fullerton, in 1995 found the Los Angeles basin out-performed the nation in job growth by more in the 1980s than it had in the 1970s.

Stationary-source polluters, such as large manufacturers, were the target of the brunt of the district's regulations. Yet manufacturing jobs grew by nearly 17 percent in the Los Angeles basin, even as they declined 4 percent nationally.

How do states with strict environmental laws fare in competition with other states? The data suggests they fare well. An analysis by two university professors -- Paul Templet of the

Louisiana State University Institute for Environmental Studies and Stephen Farber of the University of Pittsburgh Graduate School of Public and International Affairs -- found states with strong environmental programs also ranked high in economic well-being.

Stephen Meyer of the Massachusetts Institute of Technology, who scrutinized the environmental and economic health of states between 1973 and 1992, also found that states with stronger environmental policies out-performed states with weaker policies on all economic measures.

Conclusion

Fears or assumptions are largely mythical that government regulations to protect natural resources extract a toll in lost jobs. Numerous studies have failed to document correlations between regional, state and federal environmental protections and:

- The U.S. economy's shift from manufacturing jobs to jobs in the service sector,
- Overall losses in productivity,
- Overall losses in construction jobs,
- Declining gross state product,
- Weak economic performance,
- U.S. capital investments abroad, or
- California's prolonged recession.

Introduction

Does the pursuit of environmental quality hinder opportunities for economic growth and development? Are states with stronger environmental standards destined to lag economically behind those with softer standards?

With the downturn in the California economy in the 1990s these questions have surfaced at the center of numerous public policy debates. When put in simple terms, the query becomes, "Must we choose between jobs and the environment?"

Critics argue that environmental regulations can stifle economic growth, a view shared by many working Americans. Thirty-three percent of respondents in a 1990 opinion poll conducted by the Wall Street Journal thought it was likely or somewhat likely their own jobs were threatened by environmental protections. Such fears illustrate an assumption that trade-offs between economic and environmental health are regrettable facts of life.

This argument can best be summarized as follows. Businesses invest their limited capital producing goods and services and concomitantly creating jobs where they believe they can maximize profits. Individual businesses increase their profits by expanding sales while minimizing operating expenses and capital outlays. Environmental regulatory costs to clean the air, water, or land are external expenses not part of the costs of production. Adding environmental protections increases production costs and results in higher-priced products, discouraging sales and reducing profits. Less sales mean less

jobs. When regional economic conditions are considered, it is argued, plants, jobs, and pollution are exported to areas with lower environmental standards. Thus, the argument goes, environmental laws and regulations impose "nonproductive" costs on the economy, reducing economic growth and eliminating jobs.

This argument is appealing in its simplicity. However, others would contend that this theory is, at best, incomplete. They point out that just because environmental impacts may be external to a particular firm does not mean that they are absent. It simply means that someone else, usually the taxpayer, will pick up the costs. Further, environmentalists would argue that conventional analysis ignores the broader benefits of environmental programs and policies and is incapable of measuring negative impacts caused by pollution, such as lost productivity from workers and increasing health care costs.

Estimates, studies and debates have attempted to capture the bottom line on the relationship between a healthy environment and a healthy economy. Is it true that state economic growth is curtailed by increasingly strict environmental laws? If it is true that states with strong environmental standards are weaker economically than states with more lax environmental standards, the public policy debate focusing on deregulation is justified from a purely economic perspective. If, however, relative levels of environmental standards among the states are largely irrelevant to their economic condition, either because environmental policies have no systemic impact or their effects are overwhelmed by stronger influences, then the "jobs vs. environment" debate is a distraction that diverts energy, time and resources from the tangible problems afflicting our nation and economy.

If environmental laws and regulations have caused an erosion of economic strength in the United States and California in the past 30 years, economic indicators should reflect this fact. State economies should be less robust after enactment of strong environmental laws. We should find that states with the strictest environmental regulations suffer in comparison with other states and countries, and concomitantly, states with weaker laws and regulations show stronger economic performances and better future prospects.

It is clear the U.S. economy has undergone significant structural changes in the past 25 years. Workplaces are transitioning to meet the needs of a post-industrial, information-driven economy. Many traditional jobs in steel and auto manufacturing, heavy equipment and aerospace are disappearing, all too often replaced with lower-wage, lower-benefit, service-sector employment. Expenditures for pollution abatement in the United States have grown steadily over the past two decades, both absolutely and as a percentage of gross national product (GNP), reaching between $94 billion and $125 billion (2.1 percent of GNP) as estimated by the federal Environmental Protection Agency (EPA), in 1990. EPA estimates these costs will reach 2.6 percent of GNP by 2000. Opponents of environmental laws argue these laws are a significant causative factor in this shift from heavy industrial manufacturing to service-sector employment, with a resulting decrease in national living standards. If environmental laws negatively impact economic growth, we would expect to find the following:

- Significant investment in low-regulatory jurisdictions as industrial manufacturers seek to avoid added environmental costs;

- A connection between strong environmental laws and a decline in living standards;

- A connection between environmental laws and an overall decrease in manufacturing employment;

- Nationwide job losses that are not mitigated by increases in environmental technology-based employment;

- Jobs created as a result of environmental laws concentrated in low-paying, service-sector employment;

- Weaker economic growth in states after they adopt stricter environmental laws;

- A connection between the prolonged recession and weak recovery in California and a burdensome regulatory environment;

- Depressed state economic development, as measured by construction employment and gross state product, resulting from numerous endangered species listings;

- An overall loss of competitiveness in the south coast air basin resulting from the region's strictest-in-the-nation air pollution regulations, and

- A competitive economic advantage for states with comparatively weak environmental laws over states with strong environmental laws.

This paper will:

- Review the factors influencing the larger U.S. and world economies, as the overall impact of environmental laws can only be understood within the context of structural economic changes occurring throughout the global economy;

- Analyze the California economy, its strengths and weaknesses, as well as its long-term potential;

- Undertake a micro-economic review of the Los Angeles basin and the impacts of pollution control laws on the economy of that region;

- Compare California's environmental regulations with those of other states in determining whether, at a statistical level, there is a correlation between strong environmental regulations and negative economic growth.

Chapter I:
The Impact of Environmental Protections on the National Economy

U.S. Economy has Undergone Fundamental Restructuring

Congress and a series of presidential administrations have put numerous environmental protection laws and regulations on the books since the severity of health and ecological problems associated with air and water pollution took hold of the national consciousness beginning in the mid-1960s.

In ascertaining the economic impacts at the national and state levels of these actions, an accurate picture of the overall national economy during that period is essential.

For nearly two decades, the country has suffered from what economist Wallace Peterson calls a "silent depression." The real weekly income of workers in 1990 was 19.1 percent below the level reached in 1973.[1] During the same period, average family income improved 0.04 percent a year, compared with 2.72 percent annually over the 15 years prior to 1973. This nearly invisible gain was achieved only because more women, including mothers and wives, entered the labor force to boost household income. Therefore, the overall growth in GNP has masked a serious decline in well-being.[2]

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[1] Wallace Peterson, "The Silent Depression," *Challenge*, July-August 1991, pp. 30-31.
[2] Ibid.

Impact of Environmental Laws on Manufacturing Jobs

This decline in well-being has been marked by the disappearance of jobs in the industrial sector. Critics argue environmental protection mandates have accelerated the decline of U.S. manufacturing and the disappearance of millions of blue-collar jobs, driving the "silent depression" described by Peterson.

Numerous studies have explored this issue. (See Chart 1.) This chart identifies each of the economy-wide studies, published in peer-reviewed journals, since 1978. The second column indicates whether the study found a positive or negative economic impact. Note, that with the exception of the single 1978 study, which will be discussed later, there is no empirical evidence found showing a negative correlation between environmental laws and economic strength. They show the U.S. economy is undergoing a restructuring, with many manufacturing jobs being exported to foreign countries. The jobs vs. environment debate has clearly been fueled by a significant drop in manufacturing employment -- a process that has accelerated in the past 15 years.

CHART 1
ECONOMY-WIDE STUDIES OF JOBS AND THE ENVIRONMENT*

Study	Environmental Impact on Employment
Haveman (1978)	Positive
Hollenbeck (1978)	Negative
Data Resources Inc. (1979)	Positive
Data Resources Inc. (1981)	Positive
Muller (1981)	Two positive One mixed**
Wendling and Bezdek (1989)	Positive
Meyer (1992, 1993, 1995)	Positive

* The author believes this to be a complete listing of economy-wide studies either published in peer-reviewed journals, published by the EPA, or resulting from academic work.

** Positive short-run effects, negative long-run effects.

In that time, the United States has lost more than 3 million manufacturing jobs, due in part to increased competition from First World nations and from the newly industrializing

countries of Brazil, Korea, Taiwan and others. Concomitantly, U.S. manufacturers began moving production "offshore," investing increasingly in manufacturing facilities in low-wage countries such as Mexico.

Jobs have been lost primarily from the previously high-paying manufacturing sector that had been the backbone of the blue-collar middle class since the Depression era of the 1930s. The disappearance of these jobs has contributed to a decline in average real wages since 1973 and to a shrinking middle class.[3]

At the same time, many of the new jobs created during this period have been in lower-paying service-sector employment. Some assume environmental regulations have played a key role in this shift from manufacturing to service employment. Critics suggest expansive environmental protection measures have:

- Led to the shutdown of manufacturing plants,
- Encouraged the flight of U.S. manufacturing capital overseas, and
- Reduced domestic investment in new jobs by hampering productivity growth.

Much data has been collected to attempt to determine the reasons for this decline in American manufacturing. Since 1987, the Labor Department has compiled information on layoffs that have idled more than 50 workers. Seventy-five percent of firms in the civilian economy, covering 57 percent of the manufacturing work force, have been included in this survey. Employers are asked to list the primary cause of layoffs. The data for the years 1987 through 1990 are shown in Chart 2.

The Labor Department survey leads to a conclusion that the impact of environmental laws and regulations on factory-shutdown decisions is minimal. On average, according to employers' estimates, environmental protection spending accounted for less than 0.1 percent of mass layoffs nationwide from 1987 through 1990, and these tended to occur in the more highly polluting industries such as chemical manufacturing and lead smelting.

[3] Mishel, "The Late Great Debate on Deindustrialization," *Challenge*, 1989, Vol. 32, No. 1 pp. 36-44.

CHART 2

EMPLOYER-REPORTED REASONS FOR MASS LAYOFFS, 1987-90

Total, All Reasons	2,020	406,887	2,322	450,300	2,764	572,570	3,078	586,690	2,546	504,112
Automation	9	951	7	737	11	1,378	11	1,688	10	1,189
Bankruptcy	43	7,259	76	16,559	81	18,599	100	26,428	75	17,211
Business Ownership Change	88	30,955	92	18,973	82	19,147	78	16,989	85	21,516
Contract Cancellation	25	4,168	32	3,894	26	5,824	48	8,532	33	5,605
Contract Completion	147	27,696	178	50,822	225	50,971	201	40,167	188	42,414
Domestic Relocation	49	10,877	68	12,816	68	1,138	114	18,512	75	10,836
Energy-Related Disruption	6	888	---	---	6	789	---	---	3	419
Environment Related*	4	511	4	388	5	1,304	4	390	4	648
Import Competition	40	8,328	34	8,222	43	8,310	69	10,028	47	8,722
Labor-Management Dispute	43	12,592	26	2,824	47	40,387	---	---	29	13,951
Material Shortages	11	1,872	20	2,169	24	4,318	20	5,859	19	3,555
Model Changeover	17	16,441	21	7,186	17	9,089	15	3,039	18	8,939
Natural Disaster	6	561	4	919	4	678	---	---	4	540
Overseas Relocation	30	4,963	10	1,225	6	1,189	13	3,122	15	2,625
Plant or Machine Repairs	19	3,146	21	3,837	19	3,360	27	6,512	22	4,214
Seasonal Work	516	101,168	710	144,522	889	175,970	884	167,287	750	147,237
Slack Work	535	94,071	450	69,764	661	102,607	943	142,038	647	102,120
Vacation Period	17	4,161	21	3,650	22	5,871	15	2,106	19	3,947
Weather-Related Curtailment	13	1,246	43	4,285	63	11,009	84	11,815	51	7,089
Other (Including Reorganization)	240	51,207	229	51,744	255	46,778	284	97,474	252	61,801
Not Reported	162	23,826	276	45,764	210	53,604	168	24,704	204	36,975

* Includes environmental and safety-related shutdowns.

Source: U.S. Department of Labor, "Mass Layoffs in [various years]," Bulletin (Bureau of Labor Statistics), 2310, 2375, and 2395.

Four plants per year, out of more than 2,500 closed annually, were found to have closed primarily because of environmental or safety problems during the years cited.

The numbers can be doubled to roughly account for the remainder of manufacturing layoffs that were not included in the survey. This leads to an average figure of 1,300 jobs lost per year. As a comparison, 40 times more jobs were lost as a result of ownership changes in leveraged buyouts and mergers.[4]

For instance, IBM permanently laid off 18,000 workers in a single year, 1990, to contain costs in the face of heavy competition. This was nearly four times the total linked in the Labor Department survey to environmental protections over a span of four years ending with 1990.

The data indicate environmental protection expenses alone are not substantial enough to cause the shutdown of an otherwise healthy plant. Anti-pollution regulations, however, could rank among several factors in making production at certain locations unprofitable.

Environmental Laws and Disinvestment

Another common assumption is that manufacturers are shifting their investment capital to Third World nations to avoid stringent pollution regulations, thus hampering the creation of industrial manufacturing jobs in the United States.

Studies conducted to date do not support this assumption. The effect on investment decisions of environmental protection costs, according to the best data available, would appear negligible. Pollution control costs range in the vicinity of 1 percent to 2 percent of business expenses. A 1992 study by economist Timothy Koechlin[5] identified the primary determinants of U.S.

[4] It has been argued that opinion evidence of the type used by the Department of Labor is inherently unreliable. For instance, in the above data, several categories listed separately, such as bankruptcy, contract cancellation, import competition, material shortages, and overseas relocation, could have been caused by comparatively higher product costs due to environmental regulation, even though this category was separately listed. Balancing this fact, however, is the fact that the annual figure of 1,300 comes from information supplied by employers. If some employers were opposed to environmental restrictions, they might have had an incentive to link their layoffs to those restrictions in reporting them to the Labor Department.

[5] Timothy Koechlin, "Determinants of the Location of USA Foreign Investment," *International Review of Applied Economics*, 1992, Vol. 6, No. 2, pp. 203-216.

investment abroad, in order of importance, as a country's market size, wages, tax rates, political stability, its access to the European market and its distance from the United States. Also, a look at the destination of U.S. investment capital does not support any claim that manufacturers are disinvesting in the United States and moving to low-regulation venues.

At the beginning of 1992, 79 percent of all U.S. manufacturing investment abroad occurred in other highly developed nations, rather than in less-developed countries. The United Kingdom, Canada, Germany, and Switzerland, all highly developed nations with advanced industrial economies, received the largest dollar amounts of U.S. foreign investment. Germany, the country with the third-highest share of U.S. investment dollars, was also the country with the strictest pollution control regulations, as measured by the percentage GNP devoted to environmental protection. [6]

Much of the remaining 21 percent of U.S. investment dollars went to Mexico and Brazil. Mexico is close to the United States geographically, while Brazil has a large internal market of its own.[7] This is consistent with Koechlin's research showing market availability and location as primary determinants in investment decisions.

Is there proof indicating that industries are relocating to nations with less stringent environmental policies to minimize compliance costs? Empirical studies refute this hypothesis. Studies done at Cambridge University, the University of Maryland, and at Harvard University also found little or no evidence that pollution control measures have exerted any systematic effect on international trade.[8]

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[6] Ibid.

[7] Russel B. Scholl, Raymond J. Mataloni, Jr., and Steve D. Bezerganian, "The International Investment Position of the United States in 1991," *Survey of Current Business*, 1992, Vol. 72, No. 6 pp. 46-59.

[8] H.J. Leonard: Pollution and the Struggle for World Product, Cambridge England: Cambridge University Press, 1988.
J.A. Tobey, "The Effects of Domestic Environmental Policies on Patterns of World Trade: An Empirical Test," KYKLOS 43, No.2, 1980; pp.191 209.
M.E. Porter, The Competitive Advantage of Nations, New York: The Free Press, 1990, pp. 728-729.
Bezdek, Roger H. Environment, Vol. 35, No. 7,p. 6 Sept 1993.

The seminal work done by Professor M.E. Porter at Harvard went even farther. Porter's study showed that not only did environmental protection costs not hinder the comparative advantage of heavily regulated nations, to the contrary, those nations with the strictest environmental laws also had the highest rates of economic growth and job creation. [9]

Environmental Jobs are Concentrated in Blue-Collar Sectors

Finally, Maureen Cropper and Wallace Oates of the University of Maryland did an extensive literary review for Resources for the Future in Washington D.C., and found that as of June of 1992, "domestic environmental policies, at least to this point in time, do not appear to have had significant effects on patterns of international trade." [10]

What types of jobs are created by environmental protection spending? Statistical analysis shows environmental protection provides employment heavily weighted to the traditional blue-collar manufacturing, transportation, communication, and utility sectors. These sectors represented 22 percent of non-farm jobs in 1991, but accounted for a sizable 57 percent of employment generated by environmental protection spending.[11] These include jobs in recycling bottles, cans, and other materials as well as the manufacture of pollution abatement equipment and alternative energy components.

Are environmental jobs primarily in the public sector, financed by taxpayers? The answer is no -- 89 percent are in the private sector. An 11 percent rate of environmental protection employment in the public sector compares to 17 percent throughout the U.S. economy.[12]

While it is true the United States is going through a period of economic restructuring, and dwindling percentages of the work force are engaged in traditional manufacturing-based employment, the data suggests environmental protection costs are, at most, an insignificant factor in this trend.

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[9] M.E. Porter, "America's Green Strategy," *Scientific American*, April 1991, p. 168.
[10] M.L. Cropper and W.E. Oates, "Environmental Economics: A Survey," *Journal of Economic Literature*, 30, June 1992, p. 699.
[11] Roger H. Bezdek, "Environment and Economy: What's the Bottom Line?" *Environment*, 1993, Vol.35, No. 7, pp. 7-32.
[12] Ibid.

Job Losses in Extractive Industries

Critics complain that job growth is curtailed when natural resources are "locked up" in national parks or protected ecosystems, such as the formidable environs of the desert tortoise or the old-growth forests of the northern spotted owl.

Do laws protecting resources and ecosystems result in a national net loss of jobs in specific categories?

Dr. Stephen Meyer, director of the Project on Environmental Politics and Policy at the Massachusetts Institute of Technology, has studied this question at length. Meyer sought to determine if there were observable and substantial negative economic effects from Endangered Species Act (ESA) listings. Meyer hypothesized that with the ESA currently listing nearly 800 species, and with thousands of candidate species possibly eligible in the near future, impacts on state economic development should be apparent.

In his March 1995 paper, "Endangered Species Listings and State Economic Performance,"[13] Meyer estimates the impact of endangered species listings on state economic development from 1975 to 1990, the period for which complete data are available.

The study focused on two indicators of state economic performance that reflect development activity: construction employment and growth in gross state product. Construction employment is chosen because, "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."[14]

Furthermore, if ESA listings were as devastating to local economies as the anecdotal evidence might imply, then states with high numbers of endangered species should suffer economically in a measurable way. This negative impact would be detectable through changes in the gross state product.

None of the data studied support the assertion that endangered species protection resulted in measurable reductions in

[13] Stephen M. Meyer, *MIT Project on Environmental Politics and Policy*, March 1995.
[14] Meyer, p. 2.

construction employment growth during the time periods studied. If ESA listings are negatively impacting state economies there is no sign of that impact in the area of construction employment.

In comparing changes in gross state product with ESA listings, the pattern predicted by ESA critics again was not apparent in the Meyer study. "There is no trend of declining economic performance as species listings increase,"[15] Meyer found. Instead, modest rate increases in gross state product were observed.

There is another possibility that Meyer's initial study did not take into account. If states with higher numbers of endangered species listings are also states with underlying strong economies, the ESA could be retarding the rate of increase in state economic growth. If this were true, then it could be argued, the findings from 1975 to 1990 are irrelevant, because these states might have performed even better had they had fewer species listings.

The impact of the ESA should be evident when comparing each state's growth rate during periods precedent and subsequent. If larger numbers of listings decelerate economic growth, as might be suggested, then comparisons of the periods 1975 to 1980, 1980 to 1985, and 1985 to 1990 would show a tendency toward slower growth in states with burgeoning ESA lists relative to states with fewer ESA listings.

This hypothesis also was tested by Meyer. In fact, contrary to the hypothesis, 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,"[16] Meyer found. This also proves true for construction employment. The data could not support any conclusion that states that had accumulated higher numbers of listed species over time would have enjoyed stronger economic growth had ESA protections not been implemented.

Meyer concludes: *The data show that endangered species listings have not depressed state economic development activity as measured by growth in construction employment and gross state*

[15] Meyer., p. 3
[16] Meyer, p. 9.

area, population, population density, size of economy, structure of economy, population growth, and time.[17]

Does this study hold in individual cases such as the spotted owl controversy, where massive job losses were predicted when the bird was first proposed for listing? The fact is, significant job losses in the wood-products industry that affected timber communities across the Pacific Northwest likely would have occurred even without the controversial spotted owl protections triggered by the federal Endangered Species Act.

These "lock up" protections of the owl's habitat reduced the number of board feet of old-growth timber harvested in national forests. Estimates, based on late 1980s data, of direct and indirect job losses from old-growth protections range from around 15,000 to 30,000, total, depending on the severity of the timber restrictions and other underlying assumptions.[18]

But available data indicate that sustainable-yield forest practices, increased productivity, macro-economic forces driving the residential housing market, and regional production shifts exert a greater force on jobs in the timber industry than do environmental laws and regulations.

Opponents of the Endangered Species Act argue that, but for environmental restrictions, jobs in the wood-products industry would have been largely preserved. Some politicians predicted an epidemic of bank foreclosures and a severe recession, if not an actual depression, as a result of the spotted owl protections. Michael Burrill, speaking for many fellow mill owners, stated, "They just created Appalachia in the Northwest." U.S. Representative Bob Smith, from Eastern Oregon, said the logging restrictions "will take us to the bottom of a black hole."

But studies conclusively show that increased productivity in the timber industry during the 1980s, coupled with sustainable-yield practices necessary to ensure an adequate supply of harvestable timber into the future, already had doomed thousands of wood-products jobs when the owl protections became law in 1990.

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[17] Meyer, p. 1.

[18] Ross W. Gorte, "Economic Impacts of Protecting Spotted Owls: A Comparison and Analysis of Existing Studies," *Report for Congress 92-922 ENR*, Congressional Research Service, Washington, D.C., 1992.

While timber profits were higher prior to the spotted owl protections, robust harvesting levels of the 1980s were widely recognized as non-sustainable from an industrial perspective. Regulations to lower the harvest rates were needed to ward off depletion of federal timber resources,[19] regardless of whether additional actions were taken to protect the owl. The U.S. Forest Service drafted new forest-management rules that dramatically reduced the number of board feet cut on federal land. A report based on six separate employment studies[20] concluded the new management plans would have employment impacts ranging from approximately half as large to as large as spotted owl protection itself.

Moreover, the number of workers required to produce each board foot of timber had dropped in recent years, significantly boosting productivity in the highly competitive wood-products industry. From 1980 through 1988, during a period in which finished timber output grew by 19.2 percent, automation and productivity advances eliminated over 13,800 jobs in the industry.

According to a 1991 study,[21] if current productivity gains continue, productivity-induced direct employment losses will total in excess of 33,500 by 2010, roughly three times the number of direct jobs likely to be lost as a result of old-growth protection for the northern spotted owl.

Furthermore, many lost timber jobs have been related to the general slowdown in the economy. From 1990 to 1992, 20,000 workers were laid off in the industry. This cyclical unemployment, resulting from decreases in residential construction, is a permanent byproduct of resource-dependent industries. How much of this job loss is permanent is not yet clear.

In the past five years, Oregon has lost about 14,000 jobs in forest products, and Washington about 5,300, according to the Washington State Employment Security Department. However,

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[19] Michael Anderson and Jeffrey T. Olson, "Federal Forests and the Economic Base of the Pacific Northwest," Wilderness Society, Washington D.C., 1991.
[20] V. Alaric Sample and Dennis C. LeMaster, "Assessing the Employment Impacts of Proposed Measures to Protect the Northern Spotted Owl," Forest Policy Center, Washington D.C., 1992.
[21] Op. Cit.

other studies indicate that by the year 2040 about half of these jobs, and the old-growth forests they depend on, would be gone without adequate timber-cutting restrictions.[22]

Furthermore, timber production has shifted to the southern United States. As a result of restrictions in the Northwest, Anderson and Olson report, the nation's seven largest lumber and plywood manufacturers reduced capacity in the Northwest by 34 percent from 1978 to 1990 while increasing capacity in the South by 121 percent. There are clearly pockets of poverty in areas of the Northwest, especially in the smaller, more remote timber towns of Oregon, Washington, and California. But economic studies in Oregon show no county has an unemployment rate higher than 7.8 percent.

In Oregon, the nation's top timber-production state, recent studies have surprised many. Four years into a dramatic curtailment of logging in the federal forests, the state has posted its lowest unemployment rate in a generation -- just over 5 percent, compared to a national rate of 5.9 percent.

Economists consider this full employment -- a low jobless rate that still is significant enough to avoid the inflation induced by a shortage of labor. In the last year alone, the Oregon economy has added nearly 100,000 jobs. Interestingly, this is precisely the number of jobs that outspoken critics had claimed would be lost to owl-protection regulations. Twenty-thousand of these jobs have been in high-technology fields, with companies such as Hewlett-Packard and Sony opening and expanding plants in the state. In 1995, for the first time in Oregon history, high technology will surpass timber as the leading source of jobs in the state.

Moreover, as the number of logging jobs has fallen, the average relative wage has risen. In the peak year for timber cutting, 1988, wage levels in Oregon were 88 percent of the national average. In 1994 they were 94 percent.

Oregon is still the nation's timber basket, five years after spotted owl protections were instituted. Mills are using smaller trees, grown on private tree farms, and getting more use from the timber by processing previously discarded materials. A Springfield, Oregon, mill that had closed in 1989 because it

[22] Op. Cit.

could no longer buy large trees was recently retooled to process small-dimension wood from tree farms. The mill now employs 450 people.[23] Oregon and Washington combined added about 4,600 jobs in the forest-products industry between January 1993 and January 1995, according to the Washington and Oregon Employment Development Departments.

As Oregon has lessened its reliance on timber manufacturing it has become more appealing to high-technology manufacturing, mitigating net job losses. Despite a negative impact on some timber-dependent communities, the overall results show a neutral economic impact, at worst.

This is not meant to downplay the extent of impact in those communities where timber job losses have been most severe, but rather to indicate that economy-wide, Oregon has done well. Loggers and mill workers will most likely not fill the high-tech jobs, and appropriate programs are clearly necessary to deal with their long-term survival.

Impacts on the Fishing Industry

Timber-harvesting practices are a major contributor to riverine habitat damage both on and off national forest lands.[24] Consequently, an accurate assessment of the overall economic impacts of changing harvest levels should include effects on the fishing industry, an important sector of the Northwest economy.

At least 106 major populations of salmon and steelhead on the West Coast have been driven extinct, and over 214 native salmonid stocks risk extinction in the Northwest, according to the American Fisheries Society.[25]

Causes of these extinctions are cumulative, but the loss of riverine habitat is among the primary factors.[26] Although the numbers of salmon caught each year peaked a century ago, the commercial salmon harvest is still large and the fish-processing

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[23] Timothy Egan, "Oregon, Foiling Forecasters, Thrives as it Protects Owls," N.Y.Times, Tuesday, October 11, 1994.
[24] J. R. Sedell and F. H. Everest, 1991.
[25] W. Nehlsen, J.E. Williams and J.A. Lichatowich, "Pacific Salmon at the Crossroads: Stocks at Risk from California, Oregon, Idaho, and Washington Fisheries," 1991, 16(2):4-21.
[26] "Historic Changes in Pool Habitat for Columbia Basin Salmon under Study for TES Listing," Pacific Northwest Research Station, USDA Forest Service, Corvallis, OR.

industry is still important. Fishermen, their suppliers, processors, distributors and marketers depend on the commercial catch for their jobs and income.

The Pacific Rivers Council in 1992 identified 15,000 jobs in the Pacific Northwest that were dependent on the commercial salmon fishery alone in 1988.[27] Of these, 4,450 were in Oregon, 6,800 in Washington, and 4,000 in California. All 15,000 of these jobs would be threatened if the federal government canceled the salmon season due to non-sustainable fish populations.

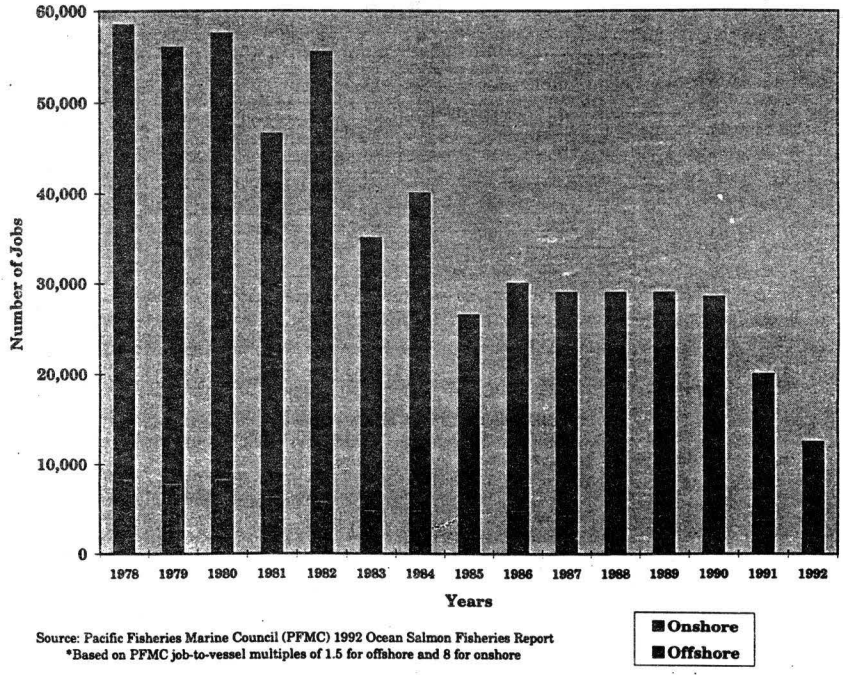
Total job losses in commercial fishing in California from all fisheries are represented in Chart 3. While habitat degradation is not the sole reason for these job losses, all available studies indicate it is a significant causative factor.

The recreational fishing industry, a prime tourist attraction and source of economic growth, also is threatened by riverine habitat destruction from non-sustainable forestry practices.

A number of studies have addressed spending by recreational anglers and their resulting economic impacts. Only one of them, the "1985 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation," by the U.S. Fish and Wildlife Service, covers the entire Pacific Northwest. It reports that trip-related expenditures on fishing by anglers in 1985 totaled $322.4 million in Washington, $226.6 million in Oregon, $106.8 million in Idaho, and $1.235 billion in California.

[27] The Economic Imperative of Protecting Riverine Habitat in the Pacific Northwest, Pacific Rivers Council Inc., Research Report, Nov.- Jan., 1992.

CHART 3
SALMON FISHING INDUSTRY
OFFSHORE AND ONSHORE COMMERCIAL FISHING JOB LOSSES*



Source: Pacific Fisheries Marine Council (PFMC) 1992 Ocean Salmon Fisheries Report
*Based on PFMC job-to-vessel multiples of 1.5 for offshore and 8 for onshore

CHART 4
THE ECONOMIC IMPACT OF COMMERCIAL AND RECREATIONAL FISHING IN CALIFORNIA, 1992

Industry	Sales from Production & Processing ($ million)	Personal Income ($ millions)	Value Added ($ millions)	Number Employed
Commercial	$ 731	$ 701	$ 770	20,820
Recreational*	2,881	4,998	5,747	153,849
Groceries and Alcohol	416	738	855	23,270
Restaurants	134	249	279	8,567
Lodging	180	332	368	9,711
Transportation	391	560	657	15,092
Equipment/Clothing	618	1,324	1,522	46,401
Boat Purchases & Use	388	563	652	15,366
Recreational Vehicles**	576	847	999	23,137
Recreational Services***	169	373	403	12,058
Other	9	10	11	247
Total Fishing	$ 3,612	$ 5,699	$ 6,517	$ 174,669
CALIFORNIA TOTAL	N/A	$ 622,786	$ 804,357	$ 328,518
CA Totals as Percentage of National Total	N/A	0.86%	0.81%	1.27%

* Recreation values for 1985 were adjusted for inflation to their 1991 equivalent, assuming similar recreational fishing spending in 1992 and 1995.

** Recreational vehicles include travel, tent, or boat trailers, motor homes, pickups, campers or vans, trail bikes, dune buggies, and four-wheel-drive vehicles.

*** Recreational services include guide, pack and package fees, public and private land use fees, equipment rental, and dues and contributions to organizations.

Sources: Pacific Fisheries Marine Council calculations; California Department of Finance and California Statistical Abstract provided "California Total" personal income and employment figures and the base values from which the impacts were assessed.

Pacific Northwest commercial and recreational salmonid fisheries have an estimated economic impact of over $1 billion a year, according to the Pacific Rivers Council.[28] Without forest

[28] Economic Imperative of Protecting Riverine Habitat in the Pacific Northwest, *supra*.

protections and habitat restoration, these jobs are at risk. The impact of all commercial and recreational fishing combined is represented in Chart 4, which shows over 174,000 jobs directly related to fishing activities.

The Pacific Rivers Council report concludes:

Dramatic protection must be implemented on public land ... if extinctions are to be prevented and if the seed stock for future economic impact is to be preserved. It is not enough to protect the habitat that is still intact. Lost habitat must be restored. Watersheds of good recovery potential must be identified and forest management mandates that protect and restore the critical ecological functions must be established. Significant changes in forest land management will be the critical underpinning of each habitat recovery plan, including reforestation and bans on harvesting near ecologically significant streams, on steep slopes, in alluvial areas and floodplains.

Thus, the fact that fishing industry jobs may be saved or restored as a result of restricting timber harvests is a mitigating factor in determining the overall economic impacts of those environmental protections.

Environmental-Protection Jobs

On balance, the available studies indicate that environmental protection spending has led to a small net increase in the number of jobs in the U.S. economy. Job losses as a result of resource conservation can be subtracted from the job gains that result from environmental-technology products and services.

Developing nations often need the kinds of products and services designed to meet environmental protection mandates in the United States. In addition, many international lending and development institutions require environmental controls, such as instrumentation and monitoring equipment, before they will consider projects for funding. Forty-eight percent of the World Bank's 1990 project loans required environmental components.[29]

For example, Thailand decided to install scrubbers on its coal-fired power plants after a single episode of air pollution sent more than 4,000 of its citizens to doctors and hospitals. Smog-bound Mexico City is turning to emission controls on its cars and

[29] United States Department of Commerce, 1994.

factories. Taiwan is requiring catalytic converters on motorcycles.

Such mandates will almost exclusively benefit Germany because, as Harvard Business School economist Michael Porter explains, "Germany has had perhaps the world's tightest regulations in stationary air pollution control, and German companies appear to hold a wide lead in patenting and exporting air-pollution reduction and other environmental technologies."

In the United States, environmental standards were relaxed significantly during the Reagan and Bush years, often in the name of competitiveness. As a result, as much as 70 percent of the air-pollution control equipment sold domestically is produced by foreign companies.[30]

In Germany, a passion for environmental protection was fueled initially in the 1970s and early 1980s by reports of *waldsterben*, or "forest death" -- the widespread damage to the country's forests caused by air pollution. Germany's environmental consciousness has led to numerous programmatic and technological advances. Already running a close race with the United States as the world's leading exporter of merchandise, Germany is convinced its environmental regulations, easily the world's most stringent, will stimulate the development of a wide range of new "green" technologies that can be marketed globally just as demand for them is beginning to increase sharply. (See Chart 5.)

The cumulative effect of the German pollution-reduction effort is to place Germany in a commanding position, as nations beset with environmental problems search for ways to reduce pollution quickly and inexpensively. It has surpassed the United States as the largest exporter of environmental goods

[30] It has been argued that the market for environmental technologies will be served by U.S. companies, regardless of the level of environmental laws in the U.S. A counter argument is that, while market demand may be sufficient to promote development of simple, non-technological products such as buggy whips, environmental standards established by the government drive the technology for complex, sophisticated products. Advances in Germany exist as a result of government mandates, placing German firms in a position to capture the market as developing countries establish mandates of their own.

and services at $11 billion in products, to America's $10.5 billion and Japan's $5 billion.[31]

As in the United States, environmental initiatives in Germany are not universally popular. Wolfgang Higer, the chairman of Hoechst, Germany's largest chemical company, complained bitterly in 1991 that the government had lost all sense of proportion. He claimed that regulations threatened his company with losses of $100 million and over 250 jobs.[32]

Edda Muller, former chief aide to Germany's minister for the environment, in defending the economic impacts of strict environmental regulation, has stated, "What we are doing here is economic policy, not environmental policy."[33] Takefumi Fukumizu, representative to the United States for Japan's powerful Ministry of International Trade and Industry (MITI), says industrialists in his country see "an inescapable economic necessity to improve energy efficiency and environmental technologies, which they believe will reduce costs and create a profitable world market. The potential profit in such a market is limitless."[34]

Environmental Laws and Net Job Losses

While increased environmental spending has generated U.S. jobs, there are also real costs, in terms of other goods and services that have been foregone. These must be factored into any equation measuring the overall impact of these laws and regulations.

Certain industries, for instance, are highly susceptible to environmental regulatory costs. This would appear to be the case for a small number of highly polluting industries.[35] These include manufacturers of highly toxic substances such as asbestos and selected pesticides; copper, zinc and lead processing, and several producers of organic chemicals.

Assessing the overall impact on the economy is more problematic. A 1990 study by Dale Jorgensen and Peter

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[31] U.S. Congress, 1994, p.118.
[32] Curtis Moore and Alan Miller, *Green Gold: Japan, Germany, the United States, and the Race for Environmental Technology*, 1994, p. 118.
[33] Ibid.
[34] Ibid.
[35] H. Jeffrey Leonard, "Are Environmental Regulations Driving U.S. Industry Overseas?" 1994, Conservation Foundation, Washington, D.C., 1984.

Wilcoxen[36] estimates that environmental regulations slowed economic growth by about 0.2 percent per year between 1974 and 1985. This study looks at resources used and goods produced to measure economic growth. Consequently, the GNP was about 2.5 percent less by the early 1990s than it would have been in the absence of regulations. The authors did not estimate the impacts on employment. If one extrapolates from their data, it is possible to come up with the figure of 3 million fewer jobs nationally between 1974 and 1992 as a result of environmental regulations. However, there is a major flaw in this work. The study fails to address the number of jobs that result from these same regulations. A study conducted at the same time by Management Information Services, Inc. found that environmental regulations created 4 million jobs during the same period.[37] This does not mean that the net impact on jobs can be said to be 1 million created, as the studies are different. It does however, cloud the interpretation of Jorgensen's and Wilcoxen's results.

Jorgensen's and Wilcoxen's work is also interesting in that it contains many of the customary flaws in standard input-output modeling. As the authors themselves admit, they make no attempt to assess benefits that might accrue to producers or consumers as a result of these laws. Their models do not account for industries that result from compliance with environmental regulations, or export opportunities that may arise.

It should also be noted that other researchers, modeling econometric input-output studies similar to the Jorgensen and Wilcoxen's model, have come to very different conclusions.[38]

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[36] Dale W. Jorgensen and Peter J. Wilcoxen, "Environmental Regulation and U.S. Economic Growth," *Rand Journal of Economics*, 1990, Vol.21, No.2, pp. 314-340.

[37] Management Information Services Inc., The Net Impact of Environmental Protection on Jobs and the Economy, Washington D.C.: MISI, March 1993.

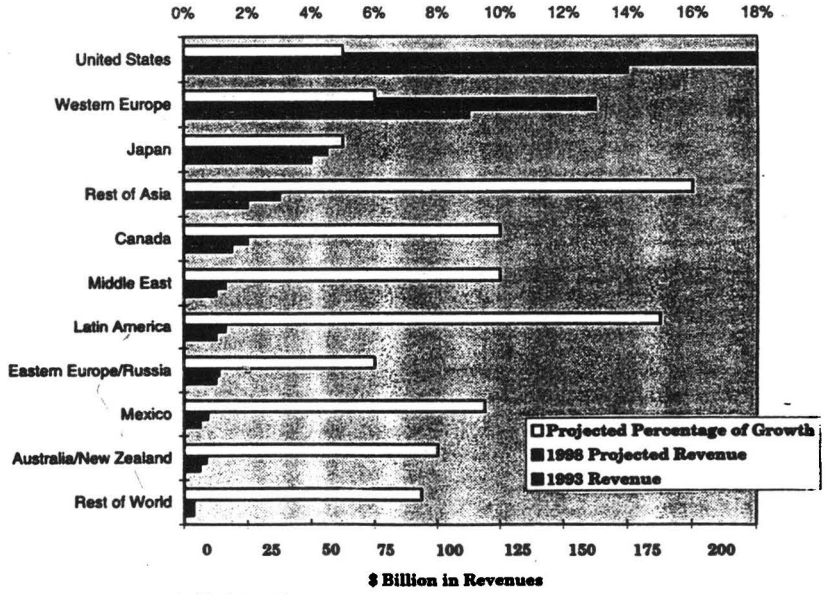
[38] Council on Economic Priorities, Jobs and Energy: The Employment and Economic Impacts of Nuclear Power, Conservation, and Other Energy Options, New York: Council on Economic Priorities, 1979. The authors compared the effects of using environmentally benign energy sources instead of fossil-fuel-based sources and concluded that their use would result in positive economic and job benefits.
R. Grossman and G. Daneker, "Energy, Jobs, and the Economy," Boston, Mass. Alyson Publications, 1979. The authors, also from the Council on Economic Priorities, came up with similar results.

Conclusion

The numerous studies available show the overall impact of environmental protections on the U.S. economy is not significant. Job losses or gains as a result of federal environmental-protection laws have not had a great impact on either the loss of manufacturing jobs or decisions to invest in less-developed nations. Overall, national timber harvests have not declined as a result of spotted owl protections -- reductions in the Northwest have been compensated by increased timber production in the South. Furthermore, reductions in timber harvests should lead to restorations in fishery-based employment, thus mitigating economic impacts.

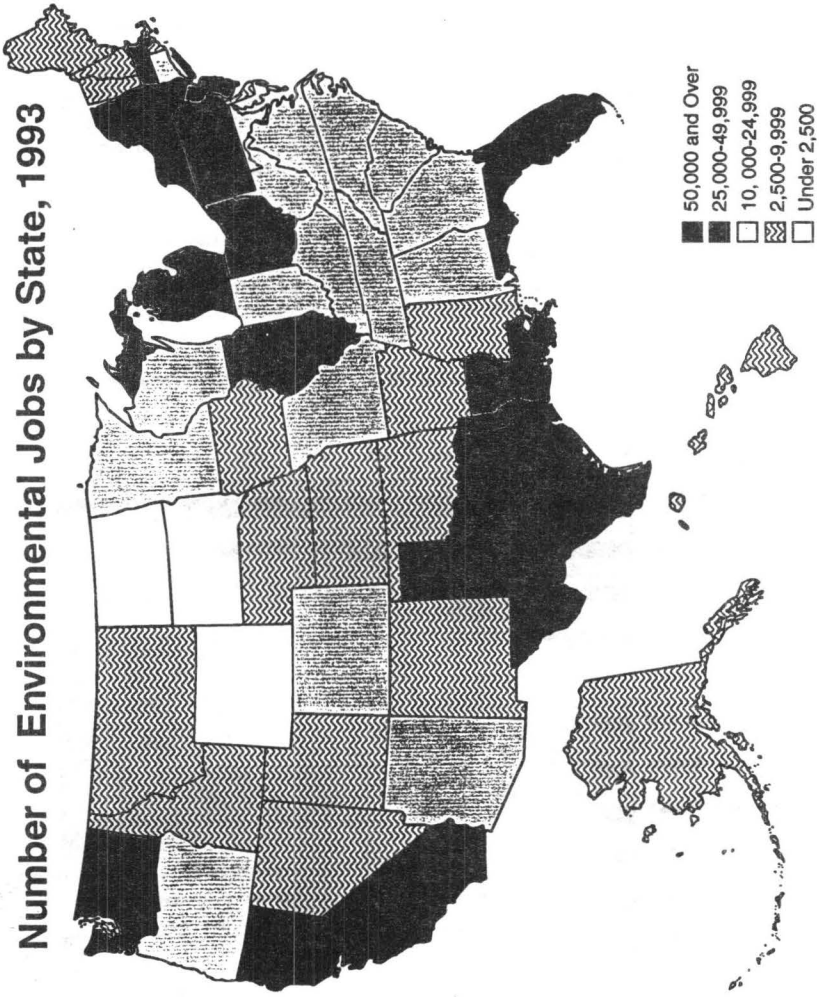
The question still remains: What are the impacts of environmental laws on individual states and jurisdictions and, in particular, on California? Was the California recession made worse by the level of environmental regulation in the state?

CHART 5
GLOBAL GROWTH OF ENVIRONMENTAL INDUSTRY
1993-1998



Source: Environmental Business International, Inc., San Diego, CA

CHART 6


Number of Environmental Jobs by State, 1993
50,000 and Over
25,000-49,999
10, 000-24,999
2,500-9,999
Under 2,500

Chapter II:
The California Economy

California Economy Remains Sluggish

California has long prided itself as the destination for visionaries, entrepreneurs and innovators, who have built the Golden State into one of the world's most vibrant economies. Even in troubled times, California remains the world's eighth-largest economic power with a gross state product that exceeds $800 billion. With 32 million residents and 10 million households, California is by far the nation's largest state market.

The recession of the 1990s, however, has destroyed the image of California as golden. Much of the self-confidence that characterized the state is evaporating along with the military bases and defense spending that fueled the boom. Structural problems facing California are far greater than those in the U.S. economy. This difference becomes clear in reviewing Chart 7, where job losses and gains in California are compared with those in the national economy for various categories of industries.

Even with the continuing U.S. economic recovery, the California economy is lagging. As shown in Chart 8 , there is a large gap in employment growth between a "normal recovery" and the expected recovery in California.[39]

[39] Dr. John Oliver Wilson, executive vice president and chief economist of Bank of America, speech to meeting of U.C. Regents, October 13, 1993.

CHART 7
JOB LOSSES, GAINS IN U.S., CALIFORNIA
(Percent Change, July 1990 - August 1993)

	United States	California
Downsizing Industries (Defense, construction, retail trade, finance)	-1.7	-6.3
Highly Cyclical Industries (Wholesale trade, machinery, electrical equipment, transportation)	-3.3	-10.4
Moderately Cyclical Industries (Business services, instruments, food processing, printing and publishing, apparel)	+2.5	-0.3
Stable-Growth Industries (Health services, engineering, and management services, communications, utilities)	+3.6	+1.7

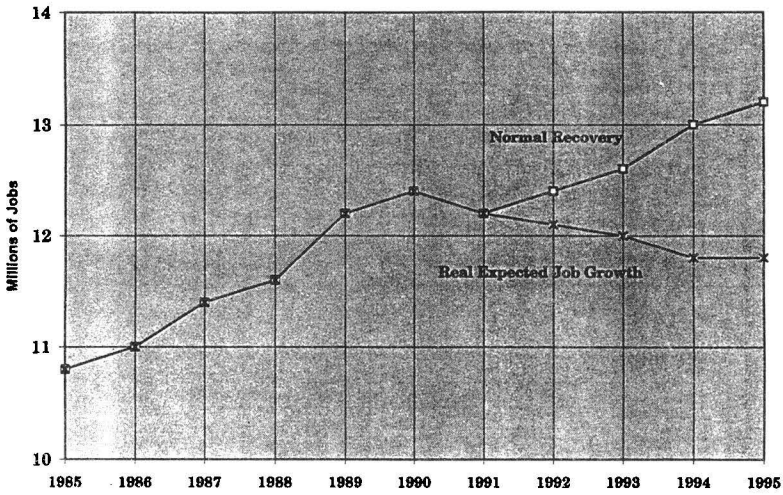
If the California economy were recovering in tandem with the U.S. economy, it would have 800,000 more jobs than currently exist.[40] (See Chart 9.)

The Recession of 1990-93: How Many Jobs Were Lost?

Chart 9 details the extent of California's economic decline during the recession, in comparison with the rest of the United States. Long-term job statistics have been substantially revised since they were first released; the Bureau of Labor Statistics (BLS) revised downward all of California's job estimates for 1983 through 1991. According to the BLS, the number of jobs during that period initially was over-reported because payroll processing firms were double-counting workers.

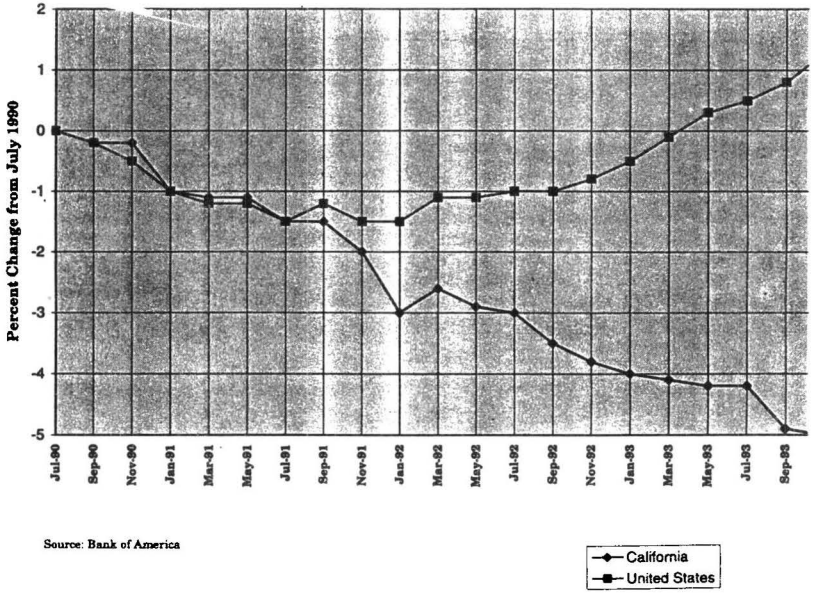
[40] Ibid.

CHART 8
EMPLOYMENT GROWTH IN CALIFORNIA
(In millions of workers)



Source: Bank of America

CHART 9
COMPARISON OF JOB TRENDS BETWEEN CALIFORNIA AND THE U.S.
July 1990 - December 1993



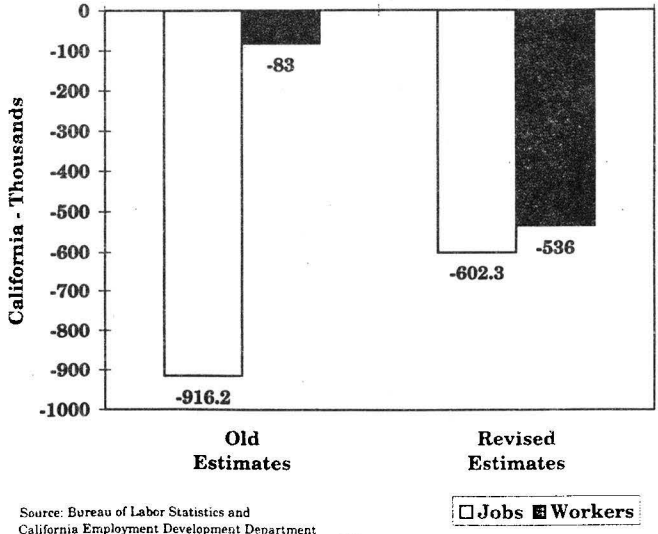
Source: Bank of America

For July 1990, the effect of the BLS revision was to lower the baseline number of jobs at the beginning of the 1990-93 recession from 12,901,500 to 12,542,600 -- a reduction of more than 350,000 jobs.

At the same time, the BLS revised another figure, this one pertaining to the number of employed residents, or workers. This revision, making California's figures consistent with the 1990 census estimates of workers in California, raised the estimated number of California workers during the recession.

The BLS and Employment Development Department officially estimate that total nonagricultural wage and salary jobs (seasonally adjusted) fell by just over 600,000 in California between the peak in July 1990 and the low point in December 1993. Prior to the revision, a figure of 950,000 lost jobs was generally accepted, thus magnifying the perception of the severity of the economic downturn. (See Chart 10, adjusted indicators of job loss.)

CHART 10
INDICATORS OF JOB LOSS
July 1990 - December 1993



Source: Bureau of Labor Statistics and
California Employment Development Department

Between July 1990 and May 1991, the number of jobs in the U.S. and California economies fell by 1.3 percent, as shown in Chart 9. Chart 7 shows the difference in job losses by sector during the same period. The nationwide recession was a cause of job losses in California, but does not explain the magnitude of California's downturn when compared with the United States as a whole.

The serious slump in California occurred after the national economy began its recovery. California remained in recession for another 2 1/2 years. Between May 1991 and December 1993, while the nation added 3 million jobs, the state lost another 450,000.

The fact that California stayed in recession while the nation began a recovery did not, however, indicate a loss in long-term competitiveness. California attracted a record level of venture capital in 1993 and again in the first quarter of 1994.

According to the Center for the Continuing Study of the California Economy (CCSCE), a respected source of independent information about long-term economic trends in California, the 1990-93 recession was deeper and longer in California as a result of four specific factors:

- A sharp decline in residential building,
- A fall in federal defense spending,
- A simultaneous drop in commercial aircraft orders, and
- A drop in spending relative to income, which cost California $28 billion in retail sales throughout the recession.[41] (See Chart 11 for a comparison of certain economic activity.)

California Job Losses in the Los Angeles Basin

California's job losses were not spread evenly across the state. They were concentrated in Southern California -- and Los Angeles County absorbed 70 percent of them. The Los Angeles basin, made up of Los Angeles, Orange, Riverside, San Bernardino and Ventura counties, accounted for 473,500 of California's 602,300 lost jobs between July 1990 and December 1993. (See Chart 12.)

[41] "The Outlook for the California Economy," Center for the Continuing Study of the California Economy, 1994, Palo Alto, California.

CHART 11
CALIFORNIA MANUFACTURING JOBS
(Thousands)

	July 1990	December 1993	Change	Percent Change
Aerospace	350.4	219.1	131.3	-37.5%
High Tech	392.0	346.5	-45.5	-11.6%
Construction-Related	177.0	134.1	-42.9	-24.2%
Other Manufacturing	1,158.2	1,062.0	-94.2	-8.3%
Total Manufacturing	2,077.6	1,761.7	-316.9	-15.2%

Source: California Employment Development Department
Note: Data are not seasonally adjusted.

CHART 12

CALIFORNIA JOBS BY MAJOR REGION
July 1990 - December 1993
(Thousands)

Region	July 1990	December 1993	Change	Percent of State Change
Los Angeles Basin	6,248.0	5,774.9	-473.1	78.5%
Los Angeles County	4,130.8	3,702.3	-428.5	71.1%
San Francisco Bay Area	2,938.4	2,832.4	-106.0	17.6%
San Diego County	966.4	933.9	-32.5	5.4%
Sacramento Region	622.5	623.9	1.4	-0.2%
Rest of State	1,767.3	1,775.2	7.9	-1.3%
California	12,542.6	11,940.3	-602.3	100.0%

Source: California Employment Development Department: seasonally adjusted.

Chart 12 shows that some parts of the state, including Sacramento, actually gained a small number of jobs during the recession. The San Francisco Bay Area lost approximately 100,000 jobs and accounted for 17.6 percent of the losses.

The spotty geographical distribution of job losses strongly supports a hypothesis that specific factors, not a general and persistent deterioration in competitiveness, accounted for most of the state's job losses. Los Angeles County, for instance, also was severely affected by the aerospace downturn and construction declines.

Business-related conditions and requirements -- such as workers' compensation, public infrastructure and state taxes -- for the most part are similar throughout California. Therefore, the fact that different geographical areas of the state had very different job losses indicates that statewide "business climate" issues were not the primary cause of California's long recession. It might seem an exception could be made for Southern California's environmental regulations, which are significantly more stringent than in the rest of the state, but a subsequent discussion of this issue (beginning on page 41) will show those regulations are not tied to a net loss of jobs.

Defense Cutbacks in the Los Angeles Basin

Two general explanations have been widely offered to account for the fact manufacturing jobs fell more in California than in the nation as a whole:

- Decreased defense spending led to national declines in aerospace and high-technology employment as a result of the end of the Cold War, and/or
- A lack of competitiveness spurred companies to relocate or expand outside the state.

According to the CCSCE, evidence is now clear that most of the manufacturing job losses can be explained by specific factors in specific industries. The deepest losses in the manufacturing sector were in aerospace -- primarily in aircraft and missile production, and in space, search and navigational equipment. More than 130,000 jobs disappeared between July 1990 and December 1993 -- a drop of more than one-third in the size of California's aerospace manufacturing sector. (See Chart 11.)

The aerospace job losses, not unique to California , were related to national trends that reduced aerospace jobs by over 400,000, or 30 percent, in 3 1/2 years.

It is important to recognize that twin factors acted upon the aerospace industry. A cutback in commercial airline orders and exports as well as defense spending reductions caused drastic declines in aerospace jobs.

While this was a substantial loss, it was not unprecedented nor unexpected. Compare this cutback in military spending with the major reductions between 1969 and 1971, when President Nixon reduced U.S. involvement in Vietnam. That triggered an 11.3 percent drop in California manufacturing jobs compared to losses of 15.2 percent between July of 1990 and January of 1993.

During the most recent recession, high-technology jobs fell by 11.6 percent in California, mirroring the rate in the rest of the nation and leaving the state's share of the national industry unchanged.[42]

Losses in high-tech manufacturing jobs do not represent a decline in high-technology production in the state, but instead reflect rapid increases in productivity, according to CCSCE statistics. Fewer workers are producing more sales and profits. In 1993, high-tech firms in the Silicon Valley reached record sales and profits.[43] According to Bank of America, significant future job growth can be expected as a result of productivity and technology advances. (See Chart 13.)

No Evidence of Fleeing Industry

Are environmental regulations part of a negative business climate forcing many industries out of the state to more friendly environs in Arizona, Utah, Nevada, Texas and elsewhere, as is commonly believed?

According to CCSCE, while the number of persons coming to California from other states has fallen sharply since 1990 in response to the recession, the number of people leaving California has risen only slightly. Further eroding a notion that jobs are heading across the state borders, and skilled employees

[42] "The Outlook for the California Economy," Center for the Continuing Study of the California Economy, May 1992.
[43] Ibid.

with them, census data show that people who came to California from other states between 1985 and 1990 were more highly educated and better paid than those who left.

A major study of manufacturing-sector business relocations, reported in a May 1995 draft report by the California State University, Fullerton (CSUF), Institute for Economic and Environmental Studies, shows that 12,000 more jobs were lost from relocations during California's recession than were lost in the previous three years. (64,413 for 1990, 1991, and 1992, compared to 52,719 during 1987, 1988, and 1989). The report, entitled "Significance of California Air Pollution Control Regulations for Business Locations Decisions," was prepared for the California Air Resources Board. Business climate decisions are clearly one factor in this rising number of relocations. However, factors, other than pollution controls appear to be the primary causes of this "business climate" problem. The report concludes that the 22 percent change in the number of relocations (even if all had been related to air pollution regulations) was not a significant factor in California's recent job losses. Moreover, the number of relocations fell in 1993, although the economy was still struggling.

In surveys reported in the CSUF report, other business climate issues, such as workers' compensation costs, taxes, litigation issues, land use permitting, labor costs, and health care costs, were listed as the major business climate concerns leading to decisions to relocate. Air pollution regulations were not identified as one of the two or three significant causes of the relocations that did occur.

Southern California Air Pollution Control Regulations

Could the fact that 70 percent of the state's recession-era job losses occurred in Los Angeles County be related to the region's stringent air pollution regulations?

The CSUF institute in April of 1995 released an important study titled, "The Automobile, Air Pollution Regulation and the Economy of Southern California 1965-1990." The study, the first of its kind, sought to determine whether air quality regulations have unduly hampered economic growth in Southern California when compared with other parts of the country. The study focused on the long-term relationship between regulation and economic performance, specifically during the period from 1965 to 1990.

Fighting Smog in Los Angeles

In 1943, a new type of air pollution, different from the smoke and soot of Pittsburgh and Birmingham, was noticed in Los Angeles. The Los Angeles Times described the phenomenon as a source of eye irritation. In response to the local concern, over strong protest, air pollution control departments were established in both the city and county of Los Angeles.

California in the decades to come established a national reputation for its technological and regulatory quest to control the numerous pollutants that teamed with sunlight to create the yellowish brown haze that became known as smog. Nowhere was success or failure more critical than in the Los Angeles basin, home to millions faced with inhaling unhealthy levels of ozone and other pollutants trapped against a ring of coastal mountains.

In addition to minor irritations, smoggy skies can reduce lung function, increase cancer risks and lead to premature mortality, cardiovascular illnesses and pulmonary disorders. Children are more sensitive to air pollutants, especially lead, and the elderly in particular are susceptible to breathing difficulties.

Smitten of the problem led the California Legislature in 1945 to create the nation's first special district formed exclusively for curbing air pollution, forerunner of the South Coast Air Quality Management District (SCAQMD).

Arie J. Haagen-Smit, a Cal Tech professor, by 1950 had created smog in a laboratory test tube by irradiating a combination of reactive hydrocarbons and oxides of nitrogen. He determined vehicle emissions and oil refineries were smog's primary culprits.

Governor Pat Brown, responding to an increasing awareness of the negative impacts of air pollution, in 1960 convened a special session of the Legislature that ultimately propelled California into the forefront in forcing auto manufacturers to curb emissions. Legislators, dissatisfied with the state Department of Public Health's record and authority in establishing exhaust controls, created a new state entity, the Motor Vehicle Pollution Control Board (MVPCB).

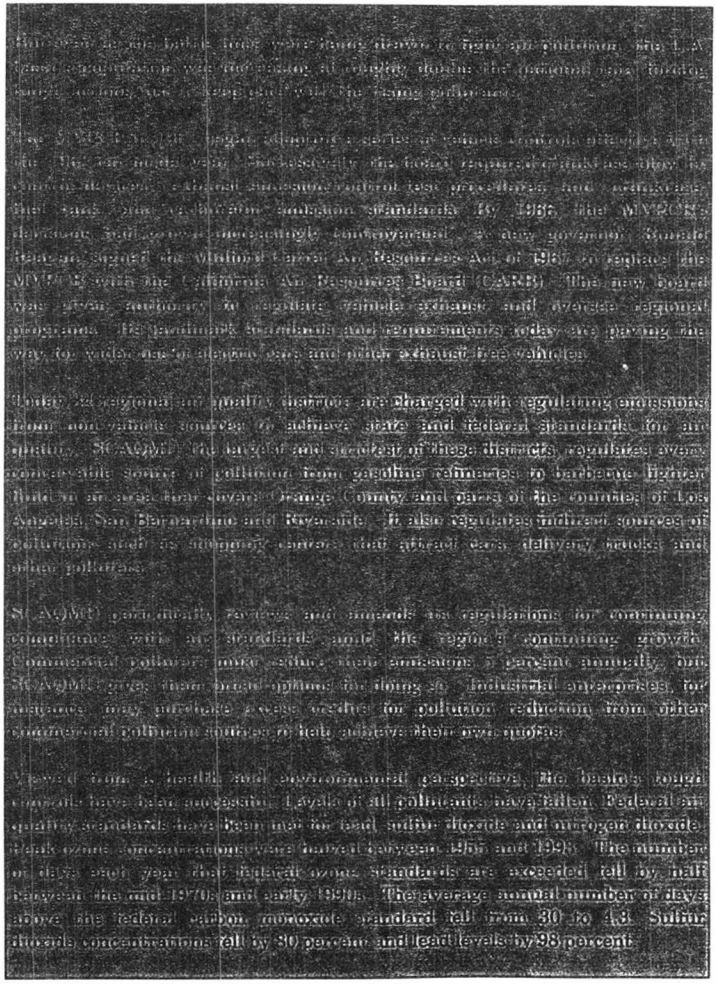
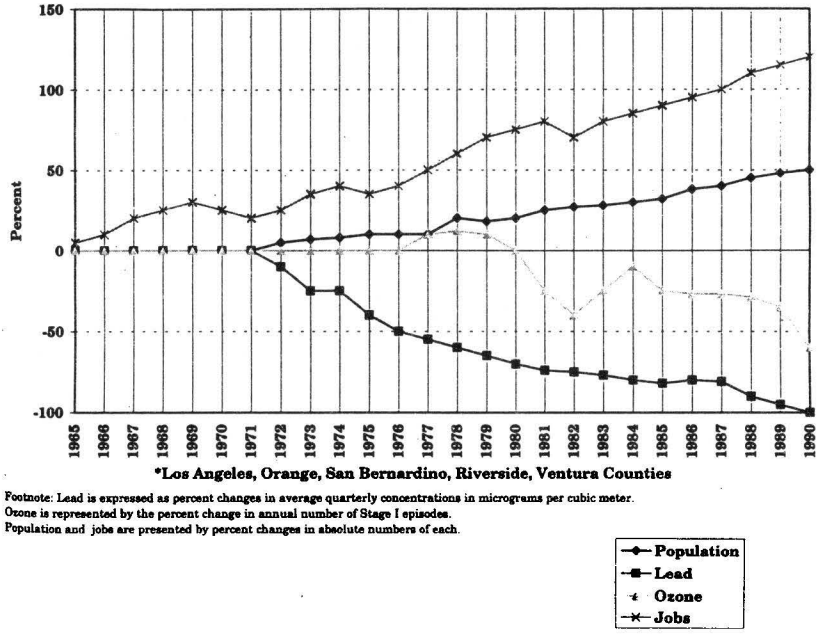


CHART 13

CHANGES IN AIR QUALITY,
JOBS AND POPULATION IN THE SOUTH COAST AIR BASIN*
1964-1990



***Los Angeles, Orange, San Bernardino, Riverside, Ventura Counties**

Footnote: Lead is expressed as percent changes in average quarterly concentrations in micrograms per cubic meter.
Ozone is represented by the percent change in annual number of Stage I episodes.
Population and jobs are presented by percent changes in absolute numbers of each.

Chart 13 illustrates the basic economic, air quality and population trends in the south coast air basin from the late 1960s to 1990. It is clear that, while airborne lead and ozone declined precipitously, population and job growth continued to rise.

California's early environmental standards were the forerunners of federal controls. But the air pollution regulations in place today in the South Coast Air Quality Management District (SCAQMD) are stricter than those anywhere in the state or nation.

If it is true that strong environmental regulations negatively impact economic performance, that finding should surface in the Cal State Fullerton study, which examined the most heavily regulated industries in the most heavily regulated air basin in the country.

According to the study, the region's economic performance improved, rather than deteriorated, over time. The basin's economy grew faster than the nation's during the affected decades. Total jobs increased by more than 85 percent, compared with about 53 percent nationwide. (See Chart 14.)

CHART 14
GROWTH IN TOTAL JOBS
LOS ANGELES BASIN AND UNITED STATES
1969-1990
(Percent)

	1960-1990	1969-1979	1979-1990
Los Angeles Basin	85.3%	35.8%	36.4%
United States	52.7%	24.3%	22.9%

Source: Bureau of Economic Analysis, U.S. Department of Commerce

The study considered the possibility that increased regulatory costs would affect job growth over a period of time. If this were true, then job growth in the basin should have fallen relative to national trends in the 1980s, as more stringent regulations were developed and implemented. The evidence studied did not support this hypothesis. The Los Angeles basin out-performed

the nation in job growth by more in the 1980s than it had in the 1970s. Among nearly 30 metropolitan areas surveyed for the study, it ranked roughly at the mid-point in both population and job growth -- suggesting its economic pace matched its growing size. See Chart 15.

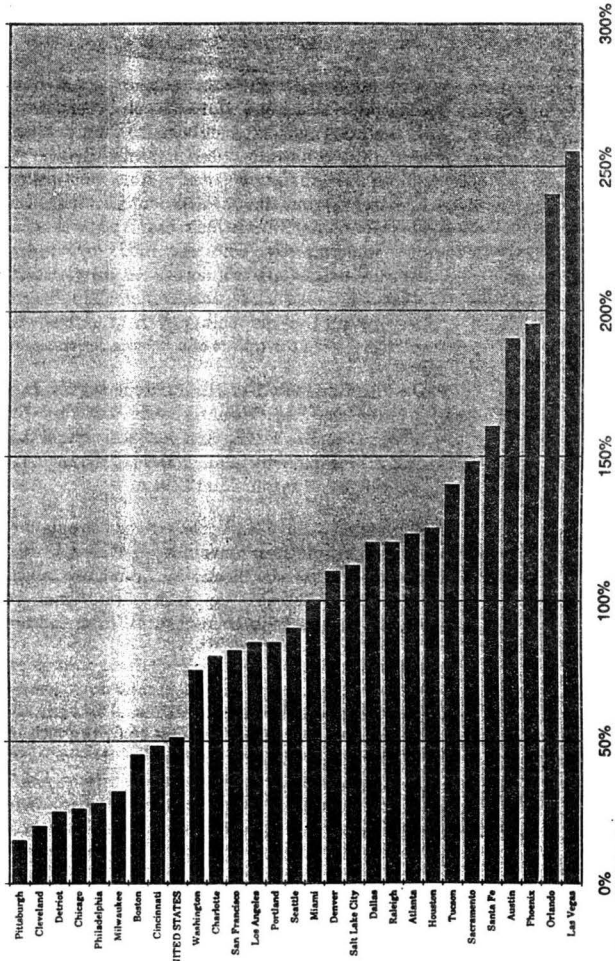
Air quality regulations would be expected to have more effect on the manufacturing sector than on other sectors of the economy in the Los Angeles basin because manufacturing is an area the SCAQMD could most directly impact. Seventy percent of air pollution in the region results from mobile-source emitters (cars and trucks), but the development patterns of the region and the lack of public transit make control of this sector problematic. Stationary-source polluters, led by large manufacturers, especially the oil and aerospace industries, are much easier objects for regulatory attention. Though contributing only 30 percent of the air pollution in the basin, stationary-source emitters were the object of the brunt of the regulations.

Despite this fact, manufacturing jobs grew by nearly 17 percent in the Los Angeles basin, even as they declined 4 percent nationally. The Los Angeles basin had 5.1 percent of U.S. manufacturing jobs in 1972, 5.9 percent in 1979, and 6.3 percent in 1990, as shown in Chart 16.

Some firms have chosen to relocate outside the region. Air quality regulations were not identified in the study as among the most significant causes of reported relocations. One-sixth (16.5 percent) of regulated firms mentioned air quality regulations as an important factor in their location decisions.

Wage levels and average household income in the Los Angeles basin remained 10 to 15 percent above the national average. Average household income for Hispanic, black, and Asian households increased by more than the national average in the 1980s in the five-county region. "No evidence was found that the region's economy was significantly affected by the regulation of vehicular smog," the study determined. Further study will be necessary to update this data. The recession of 1990-1993 is not included in the data on which these conclusions were based.

CHART 15
PERCENTAGE GROWTH IN TOTAL JOBS, 1969-1990



Source: CSUF Study

CHART 16
PERCENTAGE SHARE OF TOTAL JOBS IN MANUFACTURING, BY U.S. CITY 1990

Source: CSUF Study

According to Robert K. Arnold, co-author of the CCSCE report:

> *The California economy faces substantial economic challenges, however, the most important problems are being left unaddressed by the current focus on business climate issues, such as environmental laws.*
>
> *The highest priority is for more public and private investment and increased productivity and competitiveness. There are more important determinants of California's competitiveness than business climate issues. Investment in education, infrastructure, research and development and new technology, and quality of life issues such as congestion, housing costs and pollution are much more critical to California's future. We should be focusing on competing with Germany and Japan, not worrying about whether a very small number of firms move to Arizona, Utah, and Nevada.*

Stephen Levy, director of the center, states in the report's executive summary that "the serious problems facing the California economy are those which the state shares with the nation." Levy defines such problems as very slow improvement in living standards during the past two decades and widening inequality in incomes, trends highlighted by recent census reports.

Conclusion Nearly 600,000 jobs have been lost in California since mid-1990, largely due to the nationwide recession, defense spending cuts and a sharp decline in construction. Business flight was not a significant factor.

Chapter III:
Comparing Economic Performances of States with Strong or Weak Environmental Laws

To this point, the national economy as well as the California economy have been reviewed in an attempt to discover a correlation between strong environmental protections and negative economic impact. Analyses of existing studies, surveys, and data do not show a significant correlation, however, between environmental controls and the national de-industrialization or the prolonged California recession. There is still one remaining critical question: Do states with strong environmental laws suffer in economic terms for having them, everything else being equal?

In 1991, a study by the Goodman Group, of Boston, found that investments in conservation and various environmental programs would have substantial employment and economic benefits for the state of New York.[44]

In a 1992 study of Maine energy options, it was found that environment-based, demand-side management programs --

[44] M.W. Tennis, I. Goodman and M. Clark, "Employment Impacts of New York State Energy Options," The Goodman Group, Boston MA, 1991.

attempting to reduce electricity demand through conservation strategies rather than constructing additional power plants -- would create more jobs in Maine than would alternative programs.[45]

In a 1988 study, Timothy J. Bartik studied the impact of state government air and water pollution control expenditures, average cost of compliance, and allowed particulate emissions on plant location decisions. He found that firms are sensitive to cost variations among the states when deciding where to locate new facilities. However, environmental regulations had insignificant effects on plant location decisions.[46]

An analysis of the relationship between indicators of environmental risks and economic risks by two professors, Paul Templet of the Louisiana State University Institute for Environmental Studies and Stephen Farber of the University of Pittsburgh Graduate School of Public and International Affairs, found the two are inversely related. The study developed ratios based on pollution emissions and jobs. It used emissions data from the Toxic Release Inventory (TRI), maintained by EPA, and employment data from the U.S. Census Bureau.

Total TRI emissions were divided by manufacturing employment to arrive at an emissions-to-jobs (E/J) ratio for each state. An analysis of the relationships among economic indicators, environmental indicators, energy-use indicators, and the E/J ratios showed that poor environmental conditions, weak environmental policies, and higher E/J ratios were all inversely related to economic welfare indicators, such as poverty, unemployment, and income disparity.[47]

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[45] M. Clark, I. Goodman, M. Anthony, and P. Kelly-Detwiler, A Comparison of the Employment Creation Effects of the AES-Harriman Cove Coal-Fired Generating Station and Maine Demand-side Management, The Goodman Group, Boston, MA, 1992.

[46] T. Bartik, "The Effects of Environmental Regulation on Business Location in the United States," Growth Change, Summer 1988, 19(3) pp 22-24.
In a 1989 analysis Bartik followed up this study by reviewing the impact of state -level environmental regulations on the start-up rate of small businesses. In this study he did observe a significant, negative impact, but the effect was substantially small.
T. Bartik "Small Business Start-ups in the United States," Southern Economics Journal, April 1989, 55(4) pp. 1004-18.

[47] Paul H. Templet and Stephen Farber, "The Complementarity Between Environmental and Economic Risk: An Empirical Analysis," *Ecological Economics*, Vol. 9, No.2, February 1994, pp. 153-165.

In a second national study, the Institute for Southern Studies in Durham, North Carolina,[48] examined the relationship between environmental ranking and economic growth, using 20 indicators of each, to determine state ranking. California rated 19th among the 50 states on the "gold" economic scale and 13th on the "green" environmental scale. These studies showed states that placed in the top third in environmental ranking (1-16) averaged a placement of 8.5 among the 50 states in their economic ranking. Conversely, those states with poor environmental rankings, that placed in the lower third (34-50), averaged a ranking of 42.5 in economic performance. Complete data for the states' economic and environmental indicators are in the appendix.

Comparing the two lists offers numerous revelations:

- Nine states ranked among the top 12 on both the economic and environmental scales.
- Conversely, 12 states were among the lowest 14 on both lists.
- New England, Minnesota and Wisconsin rank best on both scales.
- The states most dependent on mining and oil production generally fair poorest on both lists.

The study refutes the hypothesis that states with strong environmental regulations would show evidence of weaker economies. The institute found:

> *States with stronger environmental policies did not experience inferior rates of economic growth and development compared to states with weaker environmental regulations. In fact the converse was true: states with stronger environmental policies consistently out-performed the weaker environmental states on all economic measures.*

This study is not conclusive, however, as the method of analysis simply compares ranks on two scales (rank order correlation) and is not the strongest statistical measure.

[48] Institute For Southern Studies, Green and Gold, Bob Hall, Oct 1994.

In the most significant study of its type, Stephen Meyer, director of the Massachusetts Institute of Technology's Project on Environmental Politics and Policy, ranked and categorized the states on the breadth and depth of their environmental programs and economic health between 1973 and 1992.[49] Dr. Meyer and his colleagues at MIT have conducted rigorous studies of various industries, utilizing a variety of economic indicators, and covering different periods. Because studies at the national level are suspect due to the inability to control for the effects of coincidental political, economic, technological, and social changes on basic economic performance, the MIT state comparative studies are critical, as they allow the opportunity to investigate the relationship between environmental and economic performance while controlling for numerous "nuisance" effects. Since the 50 states share common political, economic, technological, and social ground, but have developed widely variant environmental policies, state comparative statistical studies are most useful.

The MIT study investigated the relationship between environmental regulation and economic performance in four analytical steps.

1) Meyer sorted out and ranked the states by evaluating the relative strength of their environmental policies.

The Clean Water Act, Clean Air Act, Endangered Species Act, and other national environmental laws were passed in the past 25 years out of concern that the varying state laws would harm interstate commerce. It was feared that states attempting to protect their environments would be at a competitive disadvantage with states that had lax environmental enforcement. While national laws have leveled the playing field, important differences remain among the different states. The first step in the MIT analysis was to score the states on a set of roughly 20 environmental policy indicators, for example: wetlands protection, hazardous waste disposal policy, and endangered species protections. These lists were prepared for two separate time periods, 1982 and 1990. These appear in Chart 17. The states with more rigorous standards appear at

[49] Dr. Stephen Meyer, The Economic Impact of Environmental Regulation; *Journal of Environmental Law and Practice* (publishing date as yet unknown).

the top (1-10), and the states with lesser standards of environmental protection are at the bottom of the list (40-50). California is near the top in environmental protection in both periods studied.

2. *Meyer measured the performance of state economies by reviewing four key state economic indicators: annual gross state product growth, annual non-farm employment growth, annual manufacturing employment growth, and annual business failure rates.*

3. *Meyer then cataloged distinguishing state characteristics that could confound relationships between environmental regulation and economic performance.*

Chart 18 lists the 13 state characteristics used for statistical control. These are used because certain characteristics -- high personal incomes, for example -- could skew the data. A state with high per-capita income might have strong environmental laws because there is a demand for them among a contingent of well-educated, affluent people, and high incomes provide a strong capital base leading to a stronger economy.

4. Finally, Meyer combined the data in a multiple regression (cross- sectional, time-series) analysis for the years 1982 to 1989. He also ran comparisons among the top 10 states and the bottom 10 in his rankings. He then asked the critical question: "Did states that adopted strong environmental laws suffer in economic terms for having done so?"

The short answer is no. The MIT studies found no systematic relationship between gross state product growth and environmental standing.

They did not find a negative relationship between nonfarm employment growth and stronger environmental policies. In fact, "job growth -- not job loss -- is associated with stronger environmental policies. The 10 states with the strongest environmental policies appear to have experienced annual employment growth rates almost 0.6 percent higher than those of the 10 states with the weakest environmental policies."[50]

[50] Meyer, at p.8.

In measuring annual growth in manufacturing employment, the results are similar. Meyer found that "many factors may account for the general trend in manufacturing job losses among the states, but strong environmental policy does not appear to be one of the more important ones."[51]

Critics of strong environmental laws might argue that negative impacts of strong environmental regulation would have been masked during the 1982-1989 period by the overall strong economy. They might contend the true impact would be felt only if analyzed during a recessionary period. Meyer repeated his studies for the years 1990-1992, a period in which the U.S. economy contracted.

Findings during this period show a mixed result. According to Meyer, the 10 states with the strongest environmental policies showed a .25 percent higher annual rate of job losses during the recession. Classical analysis would dismiss this result as insignificant, as was the rate of job gain during the growth years.

The odds that environmentalism is negatively associated with job growth during the recession are 3:1, which cannot be so readily dismissed. However, annual business failure rates are lower in the states with strong environmental laws than in those with weaker laws. While the stronger states lost more jobs, fewer businesses went under, providing a basis for a stronger recovery. The two other measures studied, annual growth in gross state product and nonfarm employment, showed statistically insignificant relationships.

Meyer went on to study one additional phenomenon. He explored whether states with strong economic growth in the '70s had adopted stringent environmental laws at that time with an accumulative effect in the '80s of putting a brake on growth in comparison to their prior economic strength in the '70s.

The MIT team measured the difference in a single state between economic growth in the '70s and the '80s.

The results once more showed a positive, but statistically insignificant, relationship:

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[51] Meyer at p.9.

In general, moving from the 1970s to the 1980s, the 10 states with the strongest environmental policies saw an average annual increase of 0.4 percent in gross state product growth, nonfarm employment growth, and manufacturing growth, over and above what the 10 states with the weakest environmental laws experienced. The drop in the business failure rate for states with stronger environmental policies is further evidence against a negative effect.

"These results strongly undermine the belief that a drag effect is present."

Chart 17
State Environmental Standings

Duerksen - 1982	Renew America - 1990
1. Minnesota	1. California
2. California	2. Wisconsin
3. New Jersey	3. New Jersey
4. Massachusetts	4. Massachusetts
5. Oregon	5. Connecticut
6. Washington	6. Oregon
7. New York	7. Florida
8. Montana	8. Minnesota
9. Wisconsin	9. New York
10. Maryland	10. North Carolina
11. Indiana	11. Michigan
12. Hawaii	12. Iowa
13. Kentucky	13. Maryland
14. Vermont	14. Maine
15. Connecticut	15. Illinois
16. Maine	16. Virginia
17. Florida	17. Rhode Island
18. Ohio	18. New Hampshire
19. South Dakota	19. Vermont
20. Michigan	20. Washington
21. Delaware	21. Pennsylvania
22. Iowa	22. Ohio
23. Virginia	23. Nebraska
24. Pennsylvania	24. Georgia
25. Illinois	25. Hawaii
26. Arkansas	26. South Carolina
27. Colorado	27. Indiana
28. Rhode Island	28. Missouri
29. South Carolina	29. Delaware
30. Georgia	30. Colorado
31. North Carolina	31. Kansas
32. Arizona	32. Arizona
33. Kansas	33. Montana
34. Wyoming	34. Idaho
35. Alaska	35. Texas
36. Tennessee	36. Kentucky
37. West Virginia	37. Oklahoma
38. Utah	38. South Dakota
39. Nevada	39. New Mexico
40. Texas	40. North Dakota
41. North Dakota	41. Tennessee
42. Nebraska	42. Utha
43. Louisana	43. Nevada
44. New Hampshire	44. West Virginia
45. Oklahoma	45. Alaska
46. New Mexico	46. Alabama
47. Idaho	47. Louisana
48. Mississippi	48. Arkansas
49. Missouri	49. Mississippi
50. Alabama	50. Wyoming

CHART 18
STATE CHARACTERISTICS USED FOR STATISTICAL CONTROL

- Size of Land Area
- Economic Weight of Extractive Industry Sector
- Population Crowding and Land Use
- Energy Cost
- Economic Weight of Manufacturing Industry Sector
- Size of Consumer Market and Labor Pool
- Size of Economy
- Technological Capacity
- State Wealth
- Extent of Economic Development and Urbanization
- Manufacturing Labor Cost - 1
- Manufacturing Labor Cost - 2
- Tax Rate

Meyer is not willing to argue that strong environmental laws lead to strong economic growth because he believes there are too many other variables, such as education levels, to reach that conclusion.[52] However, he said:

> *The data show that at a minimum the pursuit of environmental quality does not hinder economic growth and development. The environmental impact hypothesis, while theoretically plausible, has no empirical foundation and focuses attention on what is probably one of the least influential factors affecting the pace of economic growth and development among the states.*[53]

Two literature reviews support the Meyer findings. In a complete review of the literature for the September 1993 issue of "Environment," Roger Bezdek, who studies the impact of environmental laws on employment, concludes:

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[52] Stephen M. Meyer, "Environmentalism and Prosperity: An Update," Cambridge, Massachusetts, MIT Project on Environmental Politics and Policy, 1992.

[53] Stephen M. Meyer, "Environmentalism and Economic Prosperity: Testing the Environmental Impact Hypothesis," 1992.

> *Recent major empirical studies unanimously reject the hypothesis that there is a negative relationship between environmental protection and economic growth. In fact, when statistically significant relationships are found, they are invariably positive; in other words, the U.S. states and nations of the world with more stringent environmental regulations show the best economic performance.* [54]

> *Overall, there is relatively little evidence to support the hypothesis that environmental regulations have had a large adverse effect on competitiveness, however that elusive term is defined. Although the long-run social costs of environmental regulation may be significant, including adverse effects on productivity, studies attempting to measure the effect of environmental regulation on net exports, overall trade flows, and plant-location decisions have produced estimates that are either small, statistically insignificant, or not robust to tests of model specification.*[55]

Environmental protection policies may cause the loss of some jobs. But the above studies, among others, conclude that -- while the positive economic value of strong environmental policies still may be debated -- they do not result in a net job loss at the national level.[56]

According to the Center for the Continuing Study of the California Economy:

> *The California economy has strong long-term growth potential. The principal threat to job and income growth in California is the lack of a strategy to prioritize and fund critical public investments.*

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[54] Roger H. Bezdek: Environment, Vol., No.7, p. 6-13, September 1993.
[55] A. Jaffe, S. Petersen, P.Portney, and R. Stavins: "Environmental Regulation and the Competitiveness of U.S. Manufacturing: What Does the Evidence Tell Us? Journal of Economic Literature: Vol.XXXIII, March 1995, pp. 132-163.
[56] Jacob Park, "Going for the Green," Book Review of *Green Gold: Japan, Germany, and the United States, and the Race for Environmental Technology* by Curtis Moore and Alan Miller, February/March1995, pp.78-79.

Chapter IV:
Conclusion

Numerous studies have measured the impact of environmental laws and regulations on the national and state economies. These studies have not documented:

- Any correlation between environmental policies and the ongoing restructuring of the economy in the United States,
- Any link between strong environmental protections and a shift from manufacturing to service-sector employment,
- Any correlation between environmental laws and decisions to shift investments from the United States to less-developed countries.
- Any slowing of state economic development as a result of endangered species listings.

Contrary to common perceptions, environmental jobs are actually more heavily concentrated in private-sector employment than are other categories of work.

No link has been established between environmental laws and productivity losses. While certain resource-dependent jobs have been lost in particular regions, studies indicate that, overall, such losses are mitigated by related job growth in other regions.

The California economy shows, at worst, only minimal overall negative impacts from environmental regulation. Furthermore, in the Los Angeles basin, the economy has actually outperformed the nation during the studied periods, despite having the strictest air pollution regulations in the nation.

Finally, in the most conclusive study, states with strong environmental protection laws correlate with states that have maintained the most robust economies in the past 20 years. No evidence was found showing a correlation between strong environmental protection and weak economic performance.

As a result of these studies, it can be concluded that shifts in environmental policy -- whether intended to expand environmental controls or reduce them -- have no discernible negative impact on state economic performance. If environmental protections do have negative economic impacts, they are so marginal and transient that they are completely lost in the noise of much more powerful domestic and international influences.

Meyer of MIT places the public policy debate in the following terms:

> *Those who live and work in states that have vigorously pursued environmental quality and are now contemplating rolling back environmental standards as a quick fix to jump-starting their economies out of recession should reconsider. Based on the evidence, there is no reason to expect that loosening environmental standards will have any effect on the pace of state economic growth.*

APPENDIX

Economic and Environmental Health Indicators Developed by Stephen Meyer of MIT for His 1992 Study, "Environmentalism and Prosperity: Testing the Environmental Impact Hypotheses"

Sources for Economic Indicators

1. Workplace deaths

Rate of traumatic deaths occurring at work, per 100,000 workers, for 1980-1989.

Source: "Fatal injuries to Workers in the U.S., 1980-1989," August 1993. Published by National Institute for Occupational Safety and Health, Center for Disease Control, U.S. Department of Health and Human Services, 944 Chestnut Ridge Road, Morgantown, WV 26505. Phone: (304) 284-5843.

2. Workers in high-injury jobs

Percent of 1989 manufacturing workforce employed in major industries (two digit SICs) with illness and injury rates at least twice the national average for all private employers -- 8. 6 cases per 100 full-time workers. The five industries are lumber and wood products (19.5 cases), primary metals (19.4 cases), fabricated metals (18.8 cases), food and kindred products (18.5 cases), and transportation equipment (17.7 cases). These were also the five industries with the highest nonfatal illness and injury rate for 1992.

Source: "Occupational Injuries and Illnesses in the United States, 1988" (August 1990) and December 15, 1993 press release (#93-553). Published by Bureau of Labor Statistics, U.S. Department of Labor, August 1990. Employment data from Bureau of Labor Statistics printout of 1989 employment.

3. Workers in toxic industries

Percent of 1989 manufacturing workforce employed in major industries that released the most toxic chemicals. The five industries accounted for 75 percent of all releases in 1989. They are chemicals (48.1 percent), primary metals (13.3 percent), paper products (5.5 percent), transportation (4.3 percent), and fabricating metals (3.6 percent).

Source: "Toxics in the Community, 1989: National and Local Perspectives," September 1991. Published by Office of Toxic Substances, U.S. Environmental Protection Agency. Same employment data as in 2.

4. Workers in jobs with high-risk of disease.

Percent of 1991 nonagricultural workforce in the six industries with highest rates of occupational diseases, particularly lung diseases from fumes or dust, as identified by the U.S. Occupational Safety and Health Administration. The six are mining, cotton weaving mills, manufacturers of other cotton products, chemicals and allied products, rubber and miscellaneous products, and leather tanning and manufacturing.

Source: "The Climate for Workers in the United States," 1994. Published by Southern Labor Institute, Southern Regional Council, 60 Walton Street, NW, Atlanta, GA 30303. Phone: (404) 522-8764.

5. Disability benefits

Maximum weekly benefits paid by state workers' compensation system to workers whose injuries make them permanently and totally disabled, 1992.

Source: "State Workers' Compensation Laws," Table 7, January 1993. Published by Office of Workers' Compensation Programs, Employment Standards Administration, U.S. Department of Labor.

6. Employer health insurance

Percent of nonelderly population in 1992 who received insurance coverage through their employer.
Source: "Sources of Health Insurance and Characteristics of the Uninsured," January 1994. Published by Employee Benefit Research Institute, 2121 K Street, NW, Washington, DC 20005. Phone (202) 659-0670.

7. Laws protecting workers

Grade given by Southern Regional Council based on the weighed grouping of 17 possible state laws that protect a worker's rights and access to health information.
Source: Same as 4.

8. Unemployment rate

Percent of all civilian workers unemployment, average for 1993.
Source: Local Area Unemployment Division, Bureau of Labor Statistics, U.S. Department of Labor, January 1994.

9. Youth unemployment rate

Annual average percent of non-institutional youth, age 16-19, unemployed for 1992.
Source: "Geographic Profile of Employment and Unemployment," July 1993. Published by Bureau of Labor Statistics, U.S. Department of Labor.

10. Unemployment Duration

Percent of unemployed who were jobless more than 27 weeks but still looking for work, annual average for 1992.
Source: Same as 9

11. Employment Growth

Percent change in annual average employment of residents, from 1985 to 1993.
Source: Local Area Unemployment Division, Bureau of Labor Statistics, U.S. Department of Labor, January 1994.

12. Women's opportunities in top jobs

Percent of jobs held by women in 1990 that are in higher paying categories: officials and managers, professional, and technicians.
Source: "Job Patterns for Minorities and Women in Private Industry," 1991. Published by Equal Employment Opportunities Commission.

13. Minority opportunity in top jobs

Percent of jobs held by minorities in 1990 that are in higher paying categories: officials and managers, professional, and technicians.
Source: Same as 12.

14. Annual pay

Average annual pay in 1992 for all workers covered by unemployment insurance.

Source: "Average Annual Pay by State and Industry, 1992." September 16, 1993 news release (#93-372) from Bureau of Labor Statistics, U.S. Department of Labor.

15. Households in poverty

Percent of population living in households with incomes below the poverty line, 1992.

Source: "Poverty in the United States: 1992," Series P-60, No. 185, 1993. Published by Bureau of Census, U.S. Department of Commerce.

16. Income gap between rich and poor

Ratio of mean family income of wealthiest 20 percent of the population to the mean family income of the poorest 20 percent for 1990-1992.

Source: Calculation by Jon Haveman, Perdue University, 1993. Based on merged U.S. Census Bureau's Current Population survey data for March 1991-1993.

17. High-school educational attainment.

Percent of household heads with at least 12 years of education, 1990-1992.

Source: Same as 16.

18. Tax fairness

Score by Corporation for Enterprise Development based on equitable distribution of tax burden, including personal income tax progressivity, sales tax burden on low-income families, and use of unitary or combined business tax reporting.

Source: "The 1994 Development Report Card," 1994. Published by Corporation for Enterprise Development, 1725 K Street NW, Washington, DC 20006. Phone: (202) 293-7963.

19. Business start-ups

Number of companies applying for new employment service account numbers, per 1,000 workers (seasonally adjusted), October 1992 to September 1993.

Source: Office of Advocacy, U.S. Small Business Administration, 1993. Based on data from Employment and Training Administration, U.S. Department of Labor.

20. Job growth in new business.

Percent of growth in employment at companies four years old or younger, 1987-1992.

Source: David Birch, Anne Hagerty, and William Parson, "Who's Creating Jobs?" May 1993. Published by Cognetics, Inc., 100 Cambridge Park Drive, Cambridge, MA. Phone (617) 661-0300.

Sources for Environmental Indicators

1. Hazardous waste generated

Pounds per capita of RCRA-regulated hazardous waste produced in state during 1991.

Source: "National Biennial RCRA Hazardous Waste Report," 1994. Office of Solid Waste, U.S. Environmental Protection Agency. Based on reports filed under the Resource Conservation and Recovery Act (RCRA). Some states include waste-laden water in total pounds, others do not.

2. Toxic chemical discharges

Pounds per capita of toxic chemicals released to the environment or transferred off-site by reporting manufacturing facilities during 1992.

Source: "1992 Toxics Release Inventory," April 1994. Published by Office of Pollution Prevention and Toxics, U.S. EPA.

3. Cancer-causing toxins

Pounds per capita of toxic chemicals released to the environment in 1991 that are classified as positive or suspected human or animal carcinogens by the International Agency for Research on Cancer.

Source: "Poisons in Our Neighborhoods: Toxic Pollution in the U.S.," November 1993. Published by the Citizens Fund, 1120 19th Street, NW, Washington, DC 20036. Phone (202) 775-1580.

4. Solid waste generated

Pounds per capita of municipal solid waste produced in 1993; many states include industrial waste destined for the same disposal facilities. Total U.S. solid waste is estimated at 614 billion pounds for 1993.

Source: "The State of Garbage in America," BioCycle magazine, April 1994. Published by JG Press, 419 State Avenue, Emmaus, PA 18049. Phone (215) 967-4135.

5. Solid waste recycled

Estimates by the states of percent of solid waste that is recycled, average of 1992 and 1993 figures. National total is about 19 percent.

Source: Same as 4.

6. Pesticides

Estimated total pounds of active ingredients in herbicides, fungicides, and insecticides applied per 1987 acre of harvested cropland.

Source: L.P. Gianessi and C.A. Puffer, "Herbicides Use in the U.S.," December 1990; "Fungicide Use in U.S. Crop Production," August 1992; and "Insecticide Use in U.S. Crop Production," November 1992. Published by Resources for the Future, 1616 P Street, NW, Washington, DC 20036. Phone (202) 328-5000.

7. Fertilizer use

Pounds per capita of single-nutrient fertilizer used in 1993. A total of 56 billion pounds was used in 1993, about 60 percent of the total for all fertilizers.

Source: "Commercial Fertilizers, 1993," December 1993. Published by the National Fertilizer and Environmental Research Center, Tennessee Valley Authority.

8. Total water use

Gallons per day capita used of surface and ground water for all offstream purposes, 1990.

Source: "Estimated Use of Water in the U.S. in 1990," 1993. Published by the Geological Survey (Circular 1081), U.S. Department of the Interior.

9. Hazardous spills

Gallons of unauthorized releases of oil and hazardous substances, totaled for 1990, 1991 and 1992.
Source: Emergency Response Notification System database, Office of Solid Waste and Emergency Response, U.S. EPA.

10. Global warming gases

Tons per capita of gases from human sources contributing to global warming (carbon dioxide, carbon monoxide, volatile organic compounds, nitrogen oxides, methane, and chlorofluorocarbons).
Source: "National - and State-Level Emission Estimates of Radiatively Important Trace Gases (RITGs) from Anthropogenic Sources," January 1991. Published by Air and Energy Engineering Research Laboratory, U.S. EPA.

11. Air quality

Score based on degree to which residents live in areas that exceed national ambient air quality standards for ozone and/or carbon monoxide, 1992-1993.
Source: "The 1994 Development Report Card," 1994. Published by Corporation for Enterprise Development, 1725 K Street NW, Washington, DC 20006. Phone: (202) 293-7963.

12. Gasoline use

Average miles traveled by car, truck or bus per gallon of gas consumed, 1992.
Source: "Highway Statistics, 1992," 1994. Published by Office of Highway Information Management, Federal Highway Administration.

13. Miles driven

Thousands of miles driven in 1992 by cars, trucks or busses, per square mile of land in state.
Source: Same as 12.

14. Energy consumption

Millions of British Thermal Units (BTUs, standard measure of heat) consumed per capita from all energy sources, 1992.
Source: "State Energy Data Report, 1992," May 1994. Published by Energy Information Administration, U.S. Department of Energy.

15. Change in energy consumption

Percent change in per-capita energy consumption from 1973 to 1992. Most states decreased per-capita energy use following the oil embargo.
Source: Same as 14.

16. State spending on environment

Total spending in fiscal 1991 for state program addressing environmental and natural resource protection. Includes state, federal, and other funds (fines, licenses, etc.) that pass through the state budgetary process. Excludes funds raised and spent by local governments.
Source: "Resource Guide to State Environmental Management," 1993. Published by the Council of State Government, P.O. Box 11910, Lexington, KY 40578. Phone 9606) 231-1939.

17. Portion of state budget for environment

State spending for environmental and natural resource protection as a percent of state's total budget for fiscal 1991.

Source: Same as 16.

18. Environmental policy record

Score based on 67 policy indicators (from recycling programs to ground water protection) measuring state initiative to protect the environment.

Source: "1991-1992 Green Index," August 1991. Published by Island Press, P.O. Box 7, Covelo, CA 95428. Phone (800) 828-1302.

19. Pollution subsidy versus investment

Score based on capital expenditures for pollution abatement made by a state's industries compared to national average for industries with similar chemical emissions. The higher the number, the greater the eventual subsidy required from public to pay for industries' poor pollution prevention strategies; a negative number means industries invest more than national average on pollution abatement equipment.

Source: Paul H. Templet, "Grazing the Commons: An Empirical Analysis of Externalities, Subsidies and Sustainability," 1994. Available from Templet at Institute For Environmental Studies, Louisiana State University, 42 Atkinson Hall, Baton Rouge, LA 70803. Phone (504) 388-6428.

20. Emissions-to-Job ratio

Pounds of toxic chemical emissions per manufacturing job for 1991.

Source: Same as 19. The E/J ratio, developed by Paul Templet, uses EPA's Toxic Release Inventory and employment data from U.S. Bureau of the Census.

Economic Health Indicators

	1		2		3		4		5	
State	Workplace Deaths Per 100,000 Rate	Rank	Workers in High-Injury Industries % Mfg.	Rank	Workers in Most Toxic Industries % Mfg.	Rank	Workers in High-Disease Industries % Mfg.	Rank	Max. Weekly Disability Benefits $	Rank
Alabama	9.2	31	37.8	32	29.7	32	2.51	41	400	29
Alaska	34.8	50	78.1	50	5.6	5	4.95	48	700	3
Arizona	3.7	6	17.3	3	8.3	6	1.00	24	488	9
Arkansas	12.0	41	45.0	41	24.5	25	1.48	34	252	48
California	6.3	17	33.9	24	28.0	30	0.59	16	336	37
Colorado	8.9	28	31.9	21	20.8	15	1.28	31	414	27
Connecticut	1.8	1	40.5	34	45.8	45	0.51	14	769	1
Delaware	5.6	13	27.7	13	60.7	50	0.86	19	328	39
Florida	9.1	30	33.7	23	26.9	27	0.46	12	425	26
Georgia	9.6	33	30.6	18	23.3	22	1.25	30	250	49
Hawaii	6.1	15	47.0	43	> 1.0	1	0.05	1	460	13
Idaho	16.7	47	58.6	48	15.3	11	0.98	23	336	37
Illinois	6.3	17	32.0	22	31.1	35	1.14	26	688	4
Indiana	7.4	22	42.2	39	40.0	43	0.95	22	360	33
Iowa	9.0	29	39.0	33	21.4	17	0.42	11	755	2
Kansas	8.6	26	49.1	44	38.7	42	1.16	27	299	44
Kentucky	11.6	39	30.3	17	27.7	28	3.05	43	394	31
Louisiana	11.0	37	41.0	37	45.9	46	4.94	47	307	43
Maine	7.6	24	35.8	28	34.1	39	0.27	5	441	21
Maryland	5.3	11	30.7	19	27.9	29	0.35	8	494	8
Massachusetts	2.3	2	19.0	7	22.8	20	0.54	15	543	7
Michigan	5.1	10	55.6	46	56.0	49	0.73	18	457	15
Minnesota	4.1	7	29.5	15	24.0	23	0.61	17	482	10
Mississippi	14.5	45	36.5	30	22.1	19	1.11	25	236	50
Missouri	5.3	11	40.7	35	37.1	40	0.95	21	450	17
Montana	20.9	48	55.0	45	5.5	4	2.13	39	349	34
Nebraska	10.9	35	43.3	40	17.2	14	0.39	9	265	47
Nevada	10.8	34	16.5	2	14.2	9	2.15	40	432	24
New Hampshire	4.4	8	17.9	5	15.8	13	0.15	2	677	5
New Jersey	3.3	4	19.7	8	33.9	38	1.18	29	431	25
New Mexico	11.8	40	28.7	14	12.6	8	3.01	42	322	40
New York	2.6	3	20.8	10	21.8	18	0.32	7	400	29
North Carolina	7.0	21	18.1	6	15.8	12	1.87	38	442	20
North Dakota	13.5	43	40.9	36	14.6	10	1.70	36	343	35
Ohio	4.6	9	41.5	38	43.0	44	1.68	35	460	13
Oklahoma	8.6	26	35.2	27	26.9	26	4.21	46	277	45
Oregon	10.9	35	57.6	47	21.2	16	0.25	4	445	19
Pennsylvania	5.9	14	34.8	26	32.5	37	1.35	32	475	11
Rhode Island	3.3	5	22.5	11	24.5	24	0.46	13	440	22
South Carolina	6.8	20	17.4	4	23.0	21	3.53	44	393	32
South Dakota	14.2	44	23.0	12	> 1.0	2	0.90	20	321	41
Tennessee	7.8	25	29.6	16	29.7	33	1.79	37	318	42
Texas	11.3	38	34.4	25	32.2	36	3.64	45	456	16
Utah	12.3	42	46.9	42	38.4	41	1.46	33	341	36
Vermont	6.7	19	20.3	9	11.0	7	0.23	3	611	6
Virginia	9.4	32	31.4	20	28.2	31	1.16	28	434	23
Washington	7.5	23	63.7	49	50.9	48	0.30	6	461	12
West Virginia	15.7	46	36.8	31	48.3	47	7.93	49	405	28
Wisconsin	6.2	16	36.1	29	30.7	34	0.41	10	450	17
Wyoming	29.0	49	10.0	1	> 1.0	3	9.62	50	269	46

ECONOMIC HEALTH INDICATORS

State	6 Coverage By Employer's Health Ins. %	Rank	7 Statutory Protections For Workers Grade	Rank	8 Unemployment Rate %	Rank	9 Unemployment For Youth %	Rank	10 Unemployment Duration Weeks	Rank
Alabama	64.8	25	2.0	49	7.5	41	23.7	43	13.4	14
Alaska	59.7	36	12.0	25	7.6	45	18.8	26	12.0	10
Arizona	60.8	35	6.0	46	6.2	22	29.9	50	15.9	22
Arkansas	54.9	45	11.5	26	6.2	22	21.4	37	13.6	13
California	55.5	43	17.5	1	9.2	49	25.1	46	20.7	34
Colorado	66.2	21	11.0	33	5.2	12	22.0	40	13.7	15
Connecticut	73.8	3	17.0	2	6.2	22	10.9	2	36.2	50
Delaware	71.2	5	12.5	24	5.3	13	10.9	2	22.5	38
Florida	53.7	47	10.0	38	7.0	32	24.9	45	19.5	33
Georgia	57.1	39	9.0	41	5.8	18	19.3	29	22.5	38
Hawaii	74.0	2	13.0	22	4.2	5	16.4	18	7.4	1
Idaho	62.3	30	9.5	39	6.1	21	16.6	19	8.5	2
Illinois	64.0	27	14.5	13	7.4	38	21.4	37	22.0	36
Indiana	70.1	9	8.5	43	5.3	13	18.7	25	12.9	12
Iowa	67.4	17	11.5	26	4.0	4	13.0	8	10.6	4
Kansas	67.1	19	11.5	26	5.0	9	11.7	5	11.9	8
Kentucky	61.4	32	13.5	18	6.2	22	15.7	15	25.2	43
Louisiana	50.7	50	4.0	48	7.4	38	20.4	35	18.1	29
Maine	64.1	26	15.0	7	7.9	48	19.0	28	23.6	41
Maryland	69.2	12	14.5	13	6.2	22	26.4	47	26.1	44
Massachusetts	70.2	8	15.0	7	6.9	31	20.2	34	34.9	49
Michigan	68.8	15	15.0	7	7.0	32	20.5	36	19.3	32
Minnesota	65.3	24	16.5	3	5.1	11	12.1	6	14.8	18
Mississippi	53.6	48	0.0	50	6.3	27	28.2	48	15.9	22
Missouri	63.9	28	11.0	33	6.4	28	12.1	6	18.1	29
Montana	59.6	37	13.5	18	6.0	19	14.7	12	15.2	20
Nebraska	66.6	20	11.5	26	2.6	1	11.1	4	11.0	6
Nevada	61.2	33	11.5	26	7.2	36	16.0	16	17.0	27
New Hampshire	68.7	16	15.0	7	6.6	30	24.2	44	23.8	42
New Jersey	69.2	12	13.5	18	7.4	38	19.6	31	29.4	46
New Mexico	54.2	46	13.5	18	7.5	41	19.9	32	14.1	16
New York	62.1	31	15.5	4	7.7	46	22.0	40	28.6	45
North Carolina	63.5	29	11.5	26	4.9	8	18.9	27	14.8	18
North Dakota	59.2	38	13.0	22	4.3	6	14.4	11	16.6	25
Ohio	69.4	11	11.5	26	6.5	29	19.9	32	21.3	35
Oklahoma	52.5	49	11.0	33	6.0	19	15.0	13	17.8	28
Oregon	69.2	12	14.5	13	7.2	36	19.5	30	14.7	17
Pennsylvania	71.2	6	14.5	13	7.0	32	18.5	24	22.3	37
Rhode Island	69.4	10	15.5	4	7.7	46	16.3	17	33.8	48
South Carolina	55.9	41	5.0	47	7.5	41	17.4	22	16.9	26
South Dakota	55.6	42	10.5	36	3.5	2	10.1	1	10.9	5
Tennessee	60.9	34	10.5	36	5.7	17	17.2	21	12.4	11
Texas	55.2	44	9.5	39	7.0	32	23.4	42	15.4	21
Utah	74.1	1	9.0	41	3.9	3	13.5	10	11.5	7
Vermont	71.0	7	15.0	7	5.4	15	16.8	20	22.5	38
Virginia	65.6	23	6.5	45	5.0	9	21.8	39	18.5	31
Washington	65.7	22	14.5	13	7.5	41	15.2	14	16.1	24
West Virginia	56.6	40	15.5	4	10.8	50	29.5	49	30.4	47
Wisconsin	71.4	4	15.0	7	4.7	7	13.0	8	11.9	8
Wyoming	67.4	17	8.5	43	5.4	15	18.4	23	9.8	3

ECONOMIC HEALTH INDICATORS

State	11 Employment Growth 1985-1993 %	Rank	12 Opportunity in Top Jobs for Women %	Rank	13 Opportunity in Top Jobs for Minorities %	Rank	14 Average Annual Pay $	Rank	15 Households With Income Below Poverty %	Rank
Alabama	12.1	25	18.9	45	10.2	45	22,340	31	17.1	40
Alaska	22.1	8	27.1	16	17.2	21	31,825	4	10.0	6
Arizona	24.9	4	26.9	18	15.7	29	23,161	26	15.1	32
Arkansas	13.5	21	16.6	47	8.6	48	20,108	46	17.4	41
California	15.0	17	29.5	9	22.0	5	28,934	6	15.8	38
Colorado	11.5	29	28.9	10	17.2	18	25,040	16	10.6	12
Connecticut	3.1	42	31.6	3	17.5	16	32,587	1	9.4	4
Delaware	18.0	13	28.6	11	17.2	20	26,596	10	7.6	1
Florida	22.8	6	25.1	29	16.6	23	23,144	27	15.3	33
Georgia	21.5	9	19.2	43	11.3	44	24,373	21	17.8	42
Hawaii	23.5	5	n/a		n/a		25,613	12	11.0	14
Idaho	19.4	10	22.4	39	15.6	31	20,649	44	15.0	31
Illinois	7.4	37	26.7	20	17.4	17	27,910	7	15.3	33
Indiana	10.6	31	21.9	40	14.1	32	23,570	23	11.7	20
Iowa	14.5	19	21.4	41	12.5	37	20,937	43	11.3	17
Kansas	6.6	39	23.0	38	12.0	39	21,982	35	11.0	14
Kentucky	9.7	32	20.9	42	13.2	34	21,858	37	19.7	46
Louisiana	-1.0	47	25.3	27	12.8	35	22,340	31	24.2	49
Maine	11.1	30	23.9	34	16.6	25	21,808	38	13.4	26
Maryland	16.3	15	29.8	8	19.2	10	27,145	9	11.6	19
Massachusetts	0.8	45	33.0	2	21.9	6	29,664	5	10.0	6
Michigan	11.6	28	26.7	21	18.2	14	27,463	8	13.5	27
Minnesota	12.0	27	27.0	17	19.6	8	25,315	14	12.8	25
Mississippi	12.3	24	14.5	50	6.9	50	19,237	48	24.5	50
Missouri	7.5	36	25.0	30	17.2	19	23,550	24	15.6	36
Montana	7.2	38	30.3	6	13.5	33	19,378	47	13.7	28
Nebraska	8.9	34	24.3	31	11.6	43	20,355	45	10.3	9
Nevada	45.4	1	15.3	49	9.3	46	24,743	20	14.4	29
New Hampshire	12.0	26	26.2	23	25.8	3	24,925	18	8.6	2
New Jersey	2.4	44	30.5	5	21.3	7	32,125	3	10.0	6
New Mexico	19.3	11	26.6	22	17.7	15	21,051	42	21.0	47
New York	2.8	43	30.7	4	22.8	4	32,399	2	15.3	33
North Carolina	14.7	18	16.8	46	8.7	47	22,248	33	15.7	37
North Dakota	-2.9	49	33.0	1	19.1	11	18,945	49	11.9	22
Ohio	9.7	33	25.1	28	16.0	27	24,846	19	12.4	24
Oklahoma	-1.5	48	23.2	37	16.8	22	21,699	39	18.4	44
Oregon	22.6	7	27.8	13	18.3	13	23,514	25	11.3	17
Pennsylvania	7.8	35	28.5	12	18.3	12	25,785	11	11.7	20
Rhode Island	-0.8	46	27.6	14	11.7	42	24,315	22	12.0	23
South Carolina	15.9	16	16.4	48	7.7	49	21,423	40	18.9	45
South Dakota	6.4	40	24.2	32	11.7	41	18,016	50	14.8	30
Tennessee	13.8	20	19.1	44	11.9	40	22,807	29	17.0	39
Texas	13.3	22	26.2	24	16.6	24	25,080	15	17.8	42
Utah	27.4	3	23.6	35	15.7	30	21,976	36	9.3	3
Vermont	12.8	23	26.9	19	36.5	2	22,347	30	10.4	11
Virginia	18.90	12	25.8	25	15.8	28	24,937	17	9.4	4
Washington	29.62	2	30.3	7	41.6	1	25,553	13	11.0	14
West Virginia	5.72	41	27.2	15	19.2	9	22,169	34	22.3	48
Wisconsin	17.57	14	24.0	33	12.5	36	23,022	28	10.8	13
Wyoming	-3.00	50	23.4	36	12.3	38	21,215	41	10.3	9

ECONOMIC HEALTH INDICATORS

	16		17		18		19		20			
	Gaps in Income Distribution		Educational Attainment: High School		State Tax Fairness		Business Starts Per 1000 Workers		Job Growth In New Business		Final Score	
State	Gap	Rank	Grads	Rank	Grade	Rank	#	Rank	%	Rank	#	Rank
Alabama	10.21	41	73	42	11.6	48	5.5	38	10.1	12	704	46
Alaska	8.35	21	89	1	42.5	19	10.9	2	11.5	9	405	13
Arizona	9.08	32	83	15	64.4	5	6.5	27	5.4	35	446	18
Arkansas	9.20	34	73	43	19.4	41	7.2	19	3.1	42	714	47
California	10.80	46	81	20	77.9	1	10.0	4	7.5	28	471	19
Colorado	8.37	22	88	2	55.0	10	8.3	13	8.5	20	395	11
Connecticut	6.90	4	86	5	49.8	12	5.9	33	2.1	43	337	4
Delaware	7.10	6	80	27	39.3	24	7.2	20	18.2	1	349	5
Florida	9.18	33	80	27	19.2	42	9.8	6	10.6	11	550	36
Georgia	10.95	47	75	41	19.5	40	7.7	18	1.9	44	666	42
Hawaii	7.78	14	86	6	48.3	14	6.1	31	11.3	10	252	1
Idaho	7.80	15	81	22	64.9	4	10.5	3	8.9	18	494	22
Illinois	9.73	39	80	25	47.0	16	5.8	35	0.5	46	530	29
Indiana	8.43	23	77	39	15.8	45	5.3	41	8.0	24	579	38
Iowa	6.63	1	82	18	29.0	37	4.5	47	12.4	8	419	15
Kansas	7.60	10	86	7	48.2	15	6.0	32	8.3	21	500	23
Kentucky	11.21	48	70	47	31.6	32	5.2	42	7.7	27	675	45
Louisiana	13.99	50	71	45	23.6	39	5.6	37	10.0	13	783	50
Maine	8.51	26	81	23	72.6	3	8.0	16	0.9	45	533	31
Maryland	8.04	18	80	24	49.4	13	8.9	10	6.2	34	373	10
Massachusetts	9.48	36	84	13	39.1	26	5.0	44	5.1	37	400	12
Michigan	9.27	35	80	31	43.4	18	4.4	49	9.3	15	506	25
Minnesota	7.60	10	85	10	74.6	2	4.4	48	14.3	4	299	2
Mississippi	10.75	45	69	49	31.0	33	5.9	34	8.6	19	766	49
Missouri	10.36	42	80	27	32.2	31	5.7	36	15.8	3	532	30
Montana	7.99	17	85	11	63.2	6	8.9	9	5.2	36	507	26
Nebraska	6.67	3	86	8	51.3	11	5.4	39	14.2	5	430	16
Nevada	8.47	24	86	9	17.0	44	8.1	15	3.3	41	525	28
New Hampshire	7.68	12	82	16	39.2	25	9.1	8	-9.9	50	355	6
New Jersey	8.98	30	81	19	38.0	27	6.9	22	8.1	23	435	17
New Mexico	10.64	44	80	26	30.4	35	8.2	14	7.5	28	581	39
New York	11.21	48	78	35	41.2	21	6.9	22	7.8	26	471	19
North Carolina	8.88	29	72	44	30.2	36	6.6	26	9.1	16	537	32
North Dakota	7.69	13	79	33	55.5	9	5.2	43	-6.5	49	541	34
Ohio	8.49	25	80	30	33.9	30	3.9	50	6.7	32	570	37
Oklahoma	9.77	40	78	36	30.8	34	6.6	25	6.8	31	668	43
Oregon	8.04	18	84	14	61.0	7	8.8	11	12.5	7	361	8
Pennsylvania	8.08	20	79	34	40.7	23	4.6	45	6.6	33	477	21
Rhode Island	8.68	28	75	40	36.6	28	8.7	12	-6.2	48	503	24
South Carolina	8.99	31	70	46	41.1	22	5.3	40	4.5	38	673	44
South Dakota	7.17	7	78	38	6.5	50	6.4	29	8.2	22	544	35
Tennessee	9.72	38	70	48	14.1	46	6.2	30	8.0	24	630	41
Texas	10.44	43	78	36	12.8	47	7.0	21	9.6	14	626	40
Utah	6.63	1	88	4	42.5	20	7.9	17	16.0	2	407	14
Vermont	7.85	16	82	17	60.6	8	9.2	7	4.5	38	302	3
Virginia	8.51	26	79	32	35.1	29	6.7	24	7.3	30	508	27
Washington	7.55	9	88	3	10.4	49	12.5	1	13.4	6	357	7
West Virginia	9.60	37	68	50	26.0	38	6.4	28	3.8	40	731	48
Wisconsin	7.02	5	81	21	46.8	17	4.6	46	9.1	16	369	9
Wyoming	7.23	8	85	12	19.0	43	9.9	5	-2.5	47	539	33

Environmental Health Indicators

State	1 Hazardous Waste Generated Lb p/c	Rank	2 Total Toxic Chemical Discharges Lb p/c	Rank	3 Cancer Causing Toxins Lb p/c	Rank	4 Solid Waste Generated Lb p/c	Rank	5 Solid Waste Recycled %	Rank
Alabama	2,230	23	44.0	39	23.0	44	2,529	37	14	27
Alaska	19,705	45	25.7	29	1.9	16	1,704	11	6	46
Arizona	1,511	18	19.7	23	0.8	9	1,879	18	9	41
Arkansas	1,336	15	45.3	40	3.3	22	1,796	13	11	33
California	3,134	26	7.8	6	1.4	12	2,884	44	11	33
Colorado	884	9	5.9	5	1.5	13	2,536	39	23	12
Connecticut	6,539	38	15.7	17	27.9	46	1,403	3	20	15
Delaware	3,178	27	25.9	30	24.7	45	3,048	46	23	13
Florida	172	6	9.5	10	0.5	6	2,877	43	29	5
Georgia	6,350	37	19.7	22	4.1	25	2,340	31	12	30
Hawaii	11	2	0.9	1	0.1	1	3,448	49	8	44
Idaho	11,320	43	10.4	11	0.7	8	1,661	10	9	38
Illinois	3,305	28	35.8	35	7.3	35	2,530	38	16	22
Indiana	3,120	25	96.2	49	45.0	48	1,554	4	8	42
Iowa	1,097	13	24.5	28	2.4	18	1,622	8	20	17
Kansas	4,289	30	59.7	45	5.6	27	2,178	28	6	47
Kentucky	5,072	32	42.5	37	28.5	47	1,716	12	15	24
Louisiana	21,320	47	166.2	50	93.5	50	1,625	9	14	27
Maine	53	4	16.3	19	2.1	17	2,018	24	30	4
Maryland	931	11	9.2	8	2.9	21	2,037	25	19	19
Massachusetts	1,379	16	9.3	9	7.9	36	2,251	30	29	5
Michigan	17,280	44	35.6	34	7.1	33	2,861	42	26	8
Minnesota	4,536	31	14.2	16	2.8	20	1,964	20	40	1
Mississippi	7,187	41	72.1	48	5.9	29	1,377	2	9	38
Missouri	927	10	66.9	47	9.8	39	2,889	45	16	22
Montana	57	5	56.6	43	0.5	5	1,806	15	5	48
Nebraska	1,905	21	23.1	26	1.7	15	1,619	7	8	42
Nevada	39	3	3.2	2	0.2	3	3,466	50	13	29
New Hampshire	1,582	19	13.4	13	2.6	19	1,996	21	10	35
New Jersey	20,573	46	27.3	31	4.5	26	1,874	16	37	2
New Mexico	1,084	12	13.4	14	5.6	28	1,951	19	7	45
New York	5,846	34	8.1	7	6.7	30	2,782	41	22	14
North Carolina	1,223	14	35.0	33	7.0	32	2,014	23	5	48
North Dakota	2,259	24	3.8	3	0.1	2	1,572	5	17	21
Ohio	790	8	40.9	36	6.8	31	3,172	48	20	17
Oklahoma	3,726	29	16.1	18	15.6	42	1,806	14	10	35
Oregon	1,798	20	13.8	15	3.4	23	2,085	26	25	9
Pennsylvania	11,312	42	22.9	25	8.1	38	1,582	6	15	25
Rhode Island	5,109	33	17.5	20	0.9	10	2,388	35	18	21
South Carolina	2,192	22	46.3	42	7.1	34	3,164	47	20	15
South Dakota	8	1	5.3	4	0.6	7	2,368	32	10	35
Tennessee	30,540	50	59.5	44	12.8	41	2,189	29	9	38
Texas	22,143	48	46.1	41	72.9	49	2,776	40	12	31
Utah	6,228	36	64.6	46	1.2	11	2,148	27	13	28
Vermont	1,453	17	10.5	12	11.9	40	2,456	36	27	7
Virginia	7,181	40	19.5	21	3.9	24	2,384	34	24	10
Washington	6,134	35	20.1	24	1.6	14	2,374	33	34	3
West Virginia	26,141	49	43.4	38	17.2	43	1,876	17	11	33
Wisconsin	489	7	23.9	27	8.0	37	1,997	22	24	10
Wyoming	6,845	39	32.3	32	0.4	4	1,373	1	4	50

ENVIRONMENTAL HEALTH INDICATORS

State	6 Pesticides Per Acre of Harvest Crop Lbs	Rank	7 Fertilizer Use Per Capita Lbs	Rank	8 Total Water Use Per Capita Gal/day	Rank	9 Spills of Haz. Liquids 1990-1992 Gal	Rank	10 Global Warming Gases Per Capita Tons	Rank
Alabama	4.2	42	197	29	2,002	34	471	21	32.8	41
Alaska	n/a		21	7	1,165	14	212	6	n/a	
Arizona	7.8	47	104	17	1,793	32	1,762	38	19.0	18
Arkansas	2.5	23	509	41	3,335	44	267	13	30.9	38
California	23.9	49	111	19	1,573	26	8,057	48	15.6	10
Colorado	1.6	9	204	30	3,864	45	2,455	42	23.1	27
Connecticut	3.1	28	3	1	1,475	24	131	4	13.1	4
Delaware	3.5	30	194	28	2,055	35	410	20	25.2	32
Florida	41.3	50	36	11	1,386	22	9,461	49	12.9	3
Georgia	5.2	44	133	22	827	4	332	16	26.0	33
Hawaii	n/a		95	14	2,472	39	244	12	n/a	
Idaho	2.2	18	1,043	46	19,568	50	762	27	15.7	11
Illinois	2.4	22	474	39	1,577	27	1,548	36	30.8	37
Indiana	2.6	24	441	38	1,701	30	700	25	48.5	46
Iowa	3.0	27	1,620	48	1,030	9	180	5	26.4	34
Kansas	1.1	5	988	45	2,454	38	649	24	32.1	40
Kentucky	2.1	16	311	35	1,172	15	307	15	34.4	43
Louisiana	4.0	41	166	25	2,217	36	4,571	46	51.6	47
Maine	3.9	38	23	8	929	8	226	10	18.4	16
Maryland	2.9	26	96	15	1,341	19	2,236	41	17.5	14
Massachusetts	6.3	46	5	2	917	7	1,011	32	14.3	8
Michigan	4.0	40	150	23	1,248	17	1,489	35	20.9	21
Minnesota	1.8	13	657	44	747	3	476	22	19.7	19
Mississippi	3.6	34	410	37	1,413	23	490	23	20.8	20
Missouri	1.7	11	503	40	1,354	21	773	28	24.2	29
Montana	0.5	2	619	42	11,655	48	1,561	37	39.5	44
Nebraska	2.2	17	1,913	49	5,667	47	217	8	24.7	31
Nevada	0.3	1	9	4	2,789	42	2,460	43	21.2	22
New Hampshire	1.4	7	9	5	1,185	16	212	7	14.2	7
New Jersey	8.1	48	8	3	1,658	29	730	26	13.2	5
New Mexico	3.7	37	115	20	2,297	37	279	14	44.2	45
New York	3.7	36	31	10	1,056	10	858	31	11.5	2
North Carolina	3.6	33	165	24	1,350	20	840	30	18.7	17
North Dakota	0.8	3	2,164	50	4,195	46	230	11	89.1	49
Ohio	2.4	20	249	33	1,079	11	2,037	40	27.0	35
Oklahoma	0.8	4	378	36	529	2	2,653	44	33.0	42
Oregon	3.6	32	249	32	2,966	43	344	17	13.4	6
Pennsylvania	2.7	25	40	12	827	5	7,767	47	23.3	28
Rhode Island	5.7	45	20	6	524	1	70	3	9.6	1
South Carolina	4.6	43	105	18	1,721	31	3,597	45	17.8	15
South Dakota	1.2	6	1,097	47	851	6	40	2	21.6	23
Tennessee	1.7	12	190	27	1,884	33	831	29	24.7	30
Texas	2.4	21	169	26	1,484	25	9,750	50	31.2	39
Utah	2.3	19	125	21	2,600	41	1,789	39	28.4	36
Vermont	1.5	8	41	13	1,123	13	12	1	14.5	9
Virginia	3.6	31	97	16	1,109	12	1,415	34	17.3	13
Washington	3.6	35	216	31	1,633	28	359	18	17.1	12
West Virginia	1.8	14	27	9	2,554	40	391	19	61.7	48
Wisconsin	1.9	15	310	34	1,331	18	221	9	21.9	24
Wyoming	1.7	10	655	43	16,753	49	1,359	33	163.4	50

ENVIRONMENTAL HEALTH INDICATORS

State	11 Air Quality Grade	11 Air Quality Rank	12 Average Miles Per Gallon Gas #	12 Average Miles Per Gallon Gas Rank	13 1000s of Miles Driven Per Sq Mile #	13 1000s of Miles Driven Per Sq Mile Rank	14 Total Energy Consumption Million BTUs p/c	14 Total Energy Consumption Million BTUs Rank	15 Change In P/c Energy Consumption %	15 Change In P/c Energy Consumption Rank
Alabama	0.18	15	16.84	26	902	28	400	39	-3.0	33
Alaska	0.81	28	13.47	48	7	1	1,043	50	77.6	50
Arizona	1.62	38	16.71	29	308	14	246	11	-21.0	2
Arkansas	0.00	1	14.12	47	443	17	332	30	-13.1	16
California	5.41	50	17.18	22	1,683	40	230	6	-19.2	4
Colorado	1.18	32	16.77	27	279	11	276	12	-13.1	18
Connecticut	4.29	47	17.63	9	5,461	47	232	7	-2.4	34
Delaware	2.78	42	17.63	9	3,526	45	350	33	-13.8	12
Florida	0.73	26	16.74	28	2,119	42	227	4	-7.5	26
Georgia	1.18	32	17.72	7	1,345	34	310	25	3.3	39
Hawaii	0.00	1	20.33	1	1,256	33	227	3	-14.8	9
Idaho	0.00	1	17.67	8	130	7	363	35	-13.2	15
Illinois	3.18	44	16.22	35	1,576	37	300	21	-15.5	8
Indiana	0.82	29	16.95	25	1,591	38	425	44	-7.9	25
Iowa	0.00	1	14.83	45	428	16	330	29	-1.6	35
Kansas	0.00	1	16.99	24	295	13	402	40	-5.3	30
Kentucky	0.66	20	16.01	37	958	29	408	42	12.0	47
Louisiana	0.45	17	15.37	41	777	26	830	48	-1.1	37
Maine	1.25	34	17.37	19	394	15	300	20	-8.1	23
Maryland	3.41	46	17.51	15	4,286	46	245	8	-14.6	10
Massachusetts	3.33	45	18.27	5	6,041	48	228	5	-14.0	11
Michigan	1.17	31	17.53	13	1,482	36	295	17	-12.2	20
Minnesota	0.53	19	17.40	17	517	19	306	22	-3.9	32
Mississippi	0.00	1	16.34	34	559	20	370	37	6.2	42
Missouri	0.70	24	15.64	40	773	25	289	15	-1.3	36
Montana	0.05	14	15.05	42	59	2	413	43	-12.0	21
Nebraska	0.00	1	14.92	43	190	9	315	27	-7.1	27
Nevada	0.68	22	13.11	50	99	6	310	26	-23.2	1
New Hampshire	0.69	23	17.91	6	1,122	30	220	2	-13.2	14
New Jersey	5.09	49	16.51	31	8,008	50	308	24	5.0	40
New Mexico	0.30	16	17.63	9	152	8	369	36	-13.5	13
New York	4.49	48	17.53	13	2,327	44	200	1	-17.3	5
North Carolina	0.72	25	17.34	20	1,386	35	295	18	6.9	43
North Dakota	0.00	1	14.39	46	88	4	514	46	59.4	49
Ohio	1.37	37	17.39	18	2,325	43	339	31	-13.1	17
Oklahoma	0.00	1	17.10	23	511	18	405	41	7.6	44
Oregon	0.67	21	16.69	30	291	12	316	28	-11.5	22
Pennsylvania	2.08	41	16.16	36	1,990	41	300	19	-16.2	6
Rhode Island	2.99	43	18.99	2	7,345	49	246	10	5.7	41
South Carolina	0.01	13	16.01	37	1,164	31	340	32	10.8	45
South Dakota	0.00	1	14.84	44	95	5	288	14	11.4	46
Tennessee	0.75	27	16.35	33	1,213	32	357	34	-5.9	28
Texas	1.62	38	16.41	32	624	21	562	47	-15.7	7
Utah	1.14	30	17.43	16	198	10	307	23	-20.6	3
Vermont	0.00	1	17.31	21	651	22	246	9	-4.1	31
Virginia	1.26	35	17.61	12	1,602	39	291	16	3.0	38
Washington	1.36	36	18.31	4	742	24	388	38	-5.6	29
West Virginia	0.52	18	15.99	39	684	23	438	45	-12.8	19
Wisconsin	1.85	40	18.51	3	877	27	280	13	-7.9	24
Wyoming	0.00	1	13.32	49	64	3	906	49	14.4	48

ENVIRONMENTAL HEALTH INDICATORS

State	16 State Spending On The Environment		17 State Budget Spent On Environment		18 Environment Policy Record		19 Pollution Subsidy vs. Investment		20 Emissions To Jobs Ratio		Final Score	
	$ p/c	Rank	%	Rank	Grade	Rank	#	Rank	#	Rank	#	Rank
Alabama	22.43	40	1.02	38	25.6	47	59	40	325	38	681	46
Alaska	519.79	1	5.79	1	25.5	48	192	47	1,252	48	551	31
Arizona	15.63	49	0.73	47	34.2	35	98	42	362	39	567	35
Arkansas	25.66	35	1.29	27	23.1	50	48	39	225	35	579	37
California	68.44	8	2.38	9	77.4	1	-48	5	45	5	423	13
Colorado	68.41	9	3.22	4	41.1	26	-51	4	38	3	377	5
Connecticut	20.98	44	0.62	50	66.4	5	-38	11	60	8	442	18
Delaware	63.70	10	1.83	15	40.0	28	-243	1	102	17	518	24
Florida	29.30	31	1.51	22	58.6	12	17	32	186	33	461	20
Georgia	21.69	42	1.06	36	39.6	30	-26	14	116	21	544	30
Hawaii	34.04	26	0.84	43	42.3	25	-22	15	47	6	360	4
Idaho	81.22	4	3.55	3	33.0	37	2	24	167	29	425	15
Illinois	35.17	25	1.63	19	50.6	18	-22	15	126	22	563	34
Indiana	13.98	50	0.67	48	43.3	24	32	37	230	36	687	47
Iowa	23.74	37	0.97	39	54.5	17	30	35	174	30	491	22
Kansas	23.16	39	1.12	34	39.8	29	172	45	401	41	625	44
Kentucky	28.38	32	1.16	32	35.4	33	-42	9	231	37	594	40
Louisiana	49.16	15	1.97	13	34.3	34	410	49	2,623	50	708	50
Maine	47.35	16	1.66	18	62.7	9	-103	2	160	27	331	3
Maryland	31.98	29	1.22	29	55.7	14	-47	6	67	11	413	12
Massachusetts	39.08	22	1.16	32	63.2	8	-12	20	35	2	389	8
Michigan	23.56	38	0.91	40	59.5	10	-11	21	107	18	541	29
Minnesota	50.50	13	1.74	16	64.6	7	10	28	108	19	381	7
Mississippi	30.41	30	1.51	22	28.8	43	170	44	473	44	612	43
Missouri	50.31	14	2.78	7	45.3	23	11	29	150	25	530	27
Montana	72.32	7	2.42	8	33.6	36	283	48	2,073	49	559	33
Nebraska	27.89	34	1.35	25	40.1	27	46	38	155	26	520	25
Nevada	46.17	17	1.61	20	28.5	44	7	26	134	23	434	17
New Hampshire	39.50	21	2.05	12	46.1	22	-7	22	63	9	310	2
New Jersey	51.85	12	1.70	17	67.8	2	-77	3	39	4	464	21
New Mexico	35.62	24	1.19	30	32.0	39	65	41	982	46	533	28
New York	32.08	28	0.90	41	65.3	6	-27	13	65	10	424	14
North Carolina	16.96	47	0.75	46	56.7	13	28	33	135	24	578	36
North Dakota	79.48	5	2.83	6	30.0	41	7	26	110	20	458	19
Ohio	16.26	48	0.64	49	49.9	19	-17	17	164	28	586	38
Oklahoma	19.12	45	0.83	44	32.1	38	29	34	209	34	588	39
Oregon	58.06	11	2.28	10	67.1	4	-16	18	92	16	395	9
Pennsylvania	24.13	36	1.07	35	47.8	20	-38	11	79	13	511	23
Rhode Island	40.38	20	1.17	31	59.0	11	-43	8	48	7	397	11
South Carolina	32.92	27	1.27	28	38.3	31	-5	23	182	32	611	42
South Dakota	45.02	18	2.21	11	23.6	49	13	30	88	15	396	10
Tennessee	22.04	41	0.88	42	31.7	40	174	46	436	42	698	48
Texas	18.36	46	1.06	36	37.4	32	14	31	445	43	703	49
Utah	43.95	19	1.84	14	29.8	42	411	50	967	45	556	32
Vermont	89.60	3	2.90	5	54.8	15	-16	18	24	1	282	1
Virginia	28.27	33	1.31	26	47.0	21	30	35	175	31	521	26
Washington	78.45	6	1.58	21	54.8	15	-39	10	87	14	430	16
West Virginia	21.02	43	0.79	45	27.5	45	3	25	370	40	652	45
Wisconsin	36.75	23	1.44	24	67.6	3	-44	7	75	12	379	6
Wyoming	221.20	2	5.53	2	26.6	46	102	43	1,204	47	601	41

Economic Well-Being and Environmental Protection in the Pacific Northwest

A Consensus Report by Pacific Northwest Economists

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Economic Well-Being and Environmental Protection in the Pacific Nort

Executive Summary

By almost any measure of economic vitality, the four states of the Pacific Northwest—Idaho, Montana, Oregon, and Washington—have been remarkably healthy and vibrant over the past decade. For example, between 1988 and 1994:

- The number of jobs in the region increased by 940,000 or 18%.
- Total personal real income of the region's households increased by $42 billion or 24%.
- Total real earnings of the region's workers increased by $28 billion or 24%.
- The average real income of the region's residents increased $1,750 or 9%.

For each of these variables, the growth in the Pacific Northwest was two to three times the national rate, and economic projections for the region indicate that growth in jobs and incomes in this region should continue to outpace the rest of the nation for the foreseeable future. Although some areas will see much more growth than others and some will struggle to maintain existing levels of economic activity, virtually all communities within the region will enjoy some of this growth. The current cyclical slowdown in the national and regional economies should not be allowed to obscure these impressive performances and optimistic forecasts.

Despite this exceptional performance, many residents feel uneasy about the regional economy and have the impression that it is about to collapse. Some are urging local, state, and national leaders to take corrective action. But action to correct a problem that does not exist can do far more harm than good.

The net result is that the region is successfully navigating from being dependent on a few extractive industries to having a modern, widely diversified economy.

This consensus report, supported by over thirty economists from all five Pacific Northwest states, attempts to clarify what is happening in the regional economy. It also offers guidance to workers, households, students, firms, and communities about how best to take advantage of the region's economic strengths.

Both the region's strong economic performance and a significant part of the unease that is felt by the public stem from the same origin: ***The economy of the Pacific Northwest is undergoing a profound transition.*** During the last decade the industries once central to the region's economy—aerospace and the natural-resource industries (agriculture, timber, fishing, and mining)— have experienced significant declines and have eliminated tens of thousands of

value-added activities which increase jobs without similarly increasing the level of resource extraction. Overall, the new jobs outside of the historic extractive base have paid high enough wages for real earnings per job to rise almost four times as rapidly as in the nation as a whole.

In short, the Pacific Northwest does not have to choose between jobs and the environment. Quite the opposite: A healthy environment is a major stimulus for a healthy economy.

This is not to say that protecting the region's environmental advantages will be without cost, for both money and political will are required to prevent environmental degradation harmful to the economy. Such harm occurs whenever the region's natural resources are allocated to low-value uses when protecting and enhancing them has a higher value. An equally potent threat comes from growth itself, which can overwhelm the environment with more people, congestion, and urban sprawl. **If the residents of this region want a healthy economy, they will have to make the economic and political investments necessary to guard against both types of environmental degradation.**

Protecting the environment, by itself, cannot ensure that everyone in the region has a bright future. As in the rest of the nation, workers in this region with lower levels of education, experience, and skill are seeing their earnings shrink relative to those with higher levels of education, experience, and skill. The workers being harmed by the transformation of the economy are those whose skills and work experience are not easily transferred to the new

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The pain of the lost jobs should not obscure the new jobs that are being created.

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expanding sectors of the economy. As a result, the transition for them and their communities is disruptive and painful. These negative consequences of the economic transformation should not be trivialized or ignored. But these consequences cannot be avoided by trying to turn back the economic clock. The pain of the lost jobs should not obscure the new jobs that are being created. **The best way to help those at risk of being left behind as the region's economy develops is to help individuals and communities acquire the capability and flexibility to take advantage of the opportunities that are being generated in the new economy.** The winners in our increasingly risky economy need to assist those disadvantaged by the changes to successfully negotiate the transition.

This consensus statement on Economic Well-Being and Environmental Protection in the Pacific Northwest is the product of a two-day meeting in Portland during the summer of 1995 of about two dozen regional economists. At that meeting a subcommittee was asked to work with the transcripts of the meeting to prepare a statement for public distribution. Several drafts were circulated among regional economists and from that review process emerged this statement and its endorsements. No attempt was made to maximize the number of endorsements, only to show the broad geographic distribution of support.

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Economic Well-Being and Environmental Protection in the Pacific Northwest

1. Introduction: What's Really Happening to the Economies of the Pacific Northwest?

By most indicators, the economies of the Pacific Northwest states have consistently outperformed the rest of the nation over the past decade. Employment, earnings, and population have all grown at rates two to three times the national average. And, although there may be temporary setbacks now and then as the regional and national economies move through normal business cycles, **the Pacific Northwest should continue to outperform the rest of the nation for the foreseeable future.**

Despite this rosy economic outlook, however, many residents of the Pacific Northwest feel anything but positive and confident about the economy upon which they rely. There is a widespread feeling of unease and insecurity about the changes taking place within the economy and the impact those changes will have on residents' ability to provide for themselves and their families.

These feelings of economic insecurity are understandable. Nationwide, the economic news is regularly disconcerting: Workers in nonmanagement jobs continue to see the purchasing power of their wages decline. National corporations repeatedly announce wide-scale layoffs, eliminating thousands of familiar, high-paying jobs. There is a pervasive perception that, although some elements of the economy are prospering, the negative impacts on families, communities, and the environment threaten the traditional fabric of American life.

The Pacific Northwest should continue to outperform the rest of the nation for the foreseeable future.

In addition, there have been significant changes within the economies of the Pacific Northwest states that contribute to a sense of foreboding. The historically important natural-resource industries, including timber, agriculture, fishing, and mining, have been contracting. Other major components of the economy, such as aerospace firms, are also shrinking with the end of the Cold War. Many fear that these changes will lead to the collapse of jobs, families, and communities.

The combination of these national and regional changes in the economy leave residents uncertain and fearful about the economic future and lead them to view the recent economic past and present in relatively bleak terms. As a result, the relatively impressive performance of the regional economy over that past half decade tends to get ignored and the very positive projec-

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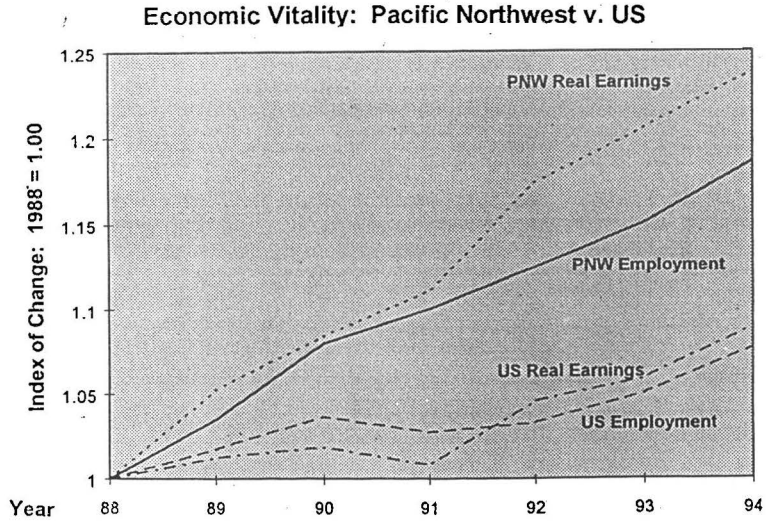
The other states' performances, however, have not been "shabby." The "worst" performances (Oregon and Montana) had employment growing at a rate "only" 2.2 times the national average and real earnings climbing at a rate "only" 2.5 times the national average.

For the region as a whole, total personal income, which includes dividends, rent, interest, and retirement income as well as labor earnings, grew at a rate 2.2 times the national average after adjusting for inflation. Real earnings by themselves grew almost three times faster. Real per capita income improved at a rate over two times faster as did employment. Population also grew at twice the national rate as the region drew new immigrants from across the nation. *(See Table 1.)* ***The accompanying graph provides a visual picture of the superior performance of the regional economy in terms of generating both jobs and earnings.***

Table 1
Measures of the Vitality of the Economies of the Pacific Northwest States

State	Employment (88-94)		Personal Income (88-94)		Average Income (88-94)		Earnings (88-94)		Population (90-94)	
	change	State/US	change	State/US	change	State/US	change	State/US	change	State/US
ID	27.7%	3.6	31.5%	2.8	14.4%	3.3	34.5%	3.9	12.0%	2.7
MT	17.0%	2.2	18.7%	1.7	10.9%	2.5	22.6%	2.5	7.0%	1.6
OR	17.0%	2.2	22.6%	2	8.5%	1.9	20.3%	2.3	8.0%	1.8
WA	17.2%	2.3	24.4%	2.2	8.0%	1.8	24.0%	2.7	9.0%	2.1
PNW	17.9%	2.4	23.9%	2.2	9.1%	2.1	23.8%	2.7	8.8%	2
US	7.7%	1	11.1%	1	4.3%	1	8.9%	1	4.4%	1

Sources: U.S. Bureau of Economic Analysis, Regional Economic Information System. Income data converted to 1994 $s using the CPI.



There are important lessons here regarding the resiliency and diversity of the regional economy. In particular, ***it is apparent that the economic fate of the entire region no longer rests solely, or even predominantly, on these two industries.*** The regional economy is more balanced, diversified, and resilient than implied by the common description of it as a "natural resource economy" threatened by loss of access to raw materials.

This superior economic performance during the last decade, despite declines in industries that historically were the centerpiece of the regional economy, should not be looked upon as a temporary "fluke" that will be reversed in time. The economic forecasts developed by each state for the coming years indicate that jobs and incomes in the region should continue to grow faster than in the rest of the nation, despite ongoing declines in forest products and aerospace. *(See Table 2.)* Growth may be slower than in the recent past, however, primarily because the recent, almost explosive expansion may not be sustainable over a long period of time. A recent Oregon forecast suggests that labor shortages and rising labor costs may slow the rate of business expansion (Oregon Department of Administrative Services, 1995, p.16). It is important to note that this problem is one caused by workers not moving to the region fast enough rather than a failure of the economy to create sufficient job opportunities. There also are indications, however, that growth in the high tech sectors in Washington and Oregon is continuing at a high rate.

Table 2
Summary of State Government Economic Forecasts
Pacific Northwest States

State	Employment Growth	Real Income Growth	Forecast Period
Idaho	3.3%	3.9%	1995-1998
Montana	1.5%	1.0%	1995-1997
Oregon	3.0%	3.7%	1995-1996
Washington	2.0%	2.9%	1995-1997
PNW States	2.4%	3.1%	1995-1997
United States	1.6%	2.4%	1995-1997
PNW/US	1.5	1.3	1995-1997

Sources: Washington Economic and Revenue Forecast, June, 1995
Oregon Economic and Revenue Forecast, September, 1995;
Idaho Economic Forecast, July, 1995;
Economics Montana, BBER, U of MT, Spring, 1995.

distinguishing feature. Further to the east, the high desert and the Northern Rocky Mountains, with their rivers, lakes, and forests, identify a region of world class recreational opportunities and scenic beauty. The region retains a good part of its natural pristine character and is relatively uncrowded compared to other areas. These environmental features are not just aesthetic qualities that are nice but of little economic importance: They are also one source of the economic vitality of the region because of these two basic economic facts:

- Many people move to this region, and remain here, because they want to enjoy its high-quality living environment.
- That growth in population stimulates the development of new businesses and the expansion of existing ones.

Of course, economic causality does not run just one way, with migration stimulating job creation. Job creation also stimulates immigration. A complex dynamic process has been triggered in the region. One part of that dynamic process seems to be clearly tied to the region's amenities.

In short, one of the reasons jobs and incomes in the PNW are growing faster than elsewhere in the U.S. is because the region's population is growing faster, and **the population is growing faster because many people believe that this is a wonderful place to live, work, and raise a family.** The attractiveness of the region assures an adequate and attractive labor supply and growing markets for goods and services. The result is that economic activities, investment, firms, jobs, and incomes are shifting from other regions to the PNW as workers and households migrate to this region in pursuit of preferred living environments.

The region is perceived as providing a superior, attractive environment in which to live, work, and do business. The natural environment appears to be especially important.

Thus, the transition in the economy of the PNW is being partially driven by the interaction of two important factors. One is that, in a society where people are more mobile than ever, large numbers of people want to live in this region and, hence, many more move to this region each year than move out of it. The other is that, as transportation and communication costs decline and industries focus more and more on the production of value-added goods and services, industrial activity is increasingly footloose, i.e., it can locate almost anywhere. In other words:

> "[T]here is less 'stuff' in the stuff that we buy today. Wood products, for instance, used to mean plywood and dimensional lumber [but today] less of the total value of the product comes from wood and more of the value comes from engineering. And that engineering can happen almost anywhere. In short, less of the value of our goods comes from the raw materials and more comes from intellectual activity. This shifts regional economies away from natural resource bases toward human resource bases. As our old ways of explaining regional economic activity will

A large number of the new jobs pay wages higher than those in the natural-resource industries. In Oregon, for instance, the average annual wage in 1993 in the high tech sectors was almost $40,000 while, by contrast, the average annual wage in the lumber-and-wood-products industry was about $28,000. Just as important, while the pay associated with high tech and services has been rising, the real annual wage associated with lumber-and-wood products has been falling steadily, from $36,000 in 1978 to $28,000 today. In many respects, the lumber-and-wood products industry no longer is a high-wage industry: Where wages in the industry once were 40 percent higher than average wages, they now are only 15 percent higher and this differential may largely reflect the industry's greater risk of injury. [Oregon Employment Department, March, 15, 1995]

It is not only high tech manufacturing that is creating relatively high paying jobs. Some of the fastest growing service sectors—business, legal, and medical services—also pay higher than average wages, and so do other sectors, such as wholesale trade, that are expanding as a result of the transition in the regional economy. Over the last decade, for the region as a whole, ***earnings per job have been growing at almost four times the national rate and average incomes have been growing over twice as fast as the national average.***

c. Responding to Economic Disruption and Dislocation

The shift in this region's economy, away from natural-resource industries and to industries whose prosperity depends on the region's attractive environment, has been painful to many households and communities, especially in some nonmetropolitan areas. Workers have lost jobs, families have lost incomes, local governments have lost revenue and curtailed services, and communities have lost their sense of history and stability. We encourage all the citizens of this region to support meaningful efforts to mitigate the economic and social distress that accompanies the closure of a sawmill, the termination of a commercial fishery, or the exhaustion of a mine's ore reserves.

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It is important to realize, however, that proposals to reverse the economic transition, such as those that call for blanket increases in timber harvests from federal lands, with disregard for the overall environmental and economic impacts, offer little meaningful relief to those who are enduring much of the cost of the transition, and, in the end, they are likely to do more harm than good. The quality of this region's natural environment has tremendous economic value and is one of the driving forces behind the growth in jobs, incomes, and industrial diversification. **Policies and actions that significantly diminish the natural environment may threaten this region's economic future and should be undertaken only after careful deliberation shows that they are worthwhile.**

and skill faster than workers are completing school and acquiring those skills. The resulting intense competition for highly skilled workers has raised their real wages while wages for those with less education and lower skills are declining. The result has been increasing inequality among workers (Bound and Johnson, 1995). This is of particular concern in some of the natural-resource industries where, in the past, workers with below-average levels of education could earn above-average wages. As those jobs are eliminated some of the dislocated workers will find it difficult to qualify for new jobs in other industries paying comparable wages.

The high levels of in-migration into the region can compound the problems for existing residents who have lost their jobs. The in-migrants tend to be more highly educated and have more work experience. Their very migration represents a self-selection of the more confident and competitive job seekers. As a result, even within an ongoing employment and population boom, unemployed existing residents may find their employment difficulties made worse. That, for example, appears to have been the case in Oregon as the number of workers exhausting their unemployment benefits rose significantly during the employment boom of the early 1990s (Oregon Labor Department, 1993 and 1994). The lesson here is a strong one: Current residents of the region will enjoy fully the benefits of the economic transition that is taking place here only if they obtain more education and training. If the individuals, families, communities, and the states of this region fail to make efficient, effective investments in education, they also will fail to keep pace.

4. Environmental Protection and Economic Performance in the PNW

No other region has a longer, more intense history of controversy over the economic impacts of environmental protection. Our history of environmental conflict shows that the impacts of protection are many, some positive and some negative, but our strong economic performance over the past decade clearly indicates that, overall, the net effect has not been negative. **Reversing these efforts to protect our environment could impose serious economic harm on the region.** This is not to say, however, that the region has approached the issues of environmental protection and economic development in an efficient manner. The region can do better.

a. The Causes of Job Loss in the PNW's Natural Resource Industries

Because jobs in the natural-resource industries have declined at the same time that there have been bitter battles in the region associated with protecting endangered species (owls, salmon, caribou, grizzly bears, wolves, bull trout, etc.), **it has become commonplace to assume that environmental protection necessarily caused all of the job loss. *This represents a serious misunderstanding, both within the region and across the nation.*** For reasons that have little to do with environmental protection, all of the industries that historically made up the region's economic base have been in relative or absolute decline as sources of jobs and income. All of the natural-resource industries—agriculture, fishing, mining, and timber—are mature industries where technological developments have dramatically raised productivity and reduced

Given that employment in the PNW has grown considerably faster than the national average, at the same time that the region experienced widespread injunctions affecting the management of forests, water, and other resources, ***it seems unlikely that these environmental protection measures have had much negative impact on overall employment growth in this region.***

c. The Employment Impact of Environmental Quality

Except where environmental regulation is grossly inefficient and ineffectual, it yields benefits as well as costs. The most obvious benefits are the improvements in the living environment. As discussed earlier, the higher quality living environments in the PNW have been one of the driving forces behind its economic vitality. **Because people care where they live and because businesses care where people choose to live, environmental quality has a positive impact on the local economy.** Put negatively, degraded environments are associated with lower incomes and depressed economic conditions (Templet and Farber, 1994; Been, 1994; Meyer, 1992 and 1993).

Given that the region's recent economic vitality is partially tied to its comparative advantage in environmental quality compared to both Southern California and other of the nation's more degraded environments, protection of that advantage through efficient environmental regulation is likely to have positive net impacts on regional economic well-being.

d. Being Clear: What We Are Not Saying

Although we believe that the points we make above represent sound conventional economic analysis and judgment, nonetheless some of the points may be perceived as controversial, or even partisan. Hence, it is important that those points not be misinterpreted.

We are not saying that the natural-resource industries (agriculture, timber, fishing, and mining) are not important to the regional economy. Natural resources industries *are* still important in the PNW and will remain so into the foreseeable future. The point we have tried to make is not that they are unimportant but that increased volumes of material extracted are not likely to be sources of expanding employment and income. That is an important distinction. In the region's rural areas there are many communities that are highly dependent upon

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Our economy is in transition and the pace of the transition, if anything, will accelerate.

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our natural resource industries. But even there, it is important to realize that additional income and jobs will be generated in the future in new value-added natural resource activities or outside the traditional natural resource industries altogether. It is for that reason that most of those communities are already searching for ways to diversify their economies away from sole reliance on the volume of natural resources extracted.

6. Efficient and Effective Environmental Protection: Working with Economic Incentives and Protecting Everyone's Property Rights

To point out that high-quality living environments contribute to economic well-being and to local economic vitality is not to suggest that one should be uncritical about *how* the region pursues that high-quality environment. In particular, **it is not a blanket endorsement of all current environmental regulation nor support for the proposition that environmental protection can only be had through the command-and-control approach that has dominated many regulations.** Recognizing that environmental protection can enhance our economic welfare is important but just a first step. We need to develop innovative and imaginative approaches that modify the incentives we face and encourage environmentally benign private decision making. Bottle-deposit laws and other recycling incentives are examples of this approach. Complex government regulation is only one tool among many to be considered and often not the best tool.

Recognizing that environmental protection can enhance our economic welfare is important but just a first step.

Nor does pursuit of a high-quality environment necessarily imply that private property rights have to be weakened. Environmental regulation often involves conflicts between two parties, where each is seeking to protect or enhance the value of his or her property. In that sense, environmental regulations enhance property rights by specifying how conflicting rights are to be settled. For instance, where manufacturers' air and water discharges threaten the health and property values of adjacent residents, having laws that clearly limit the damage one property owner can impose on another's property cannot be said to weaken property rights in any way. Good environmental policy seeks to resolve conflicts over property rights and to clarify the rights of all concerned.

When one's property rights are clearly specified and understood, those rights are all the more valuable. **Indeed, a fundamental role of government in our society is to specify and protect the property rights of individuals.** Government also enhances property rights and values in other ways, for example by making investments and providing services in situations where public action appears to be the most efficient mechanism. Many believe that the government acts in a similar manner when it seeks to protect an ecosystem, prevent the extinction of a species, or accomplish other environmental objectives. Others, however, urge less reliance on government regulation and a heavier reliance on markets and incentives. We do not take a position on this issue other than to offer these two observations:

- **Attempts to impose a one-size-fits-all resolution of this issues is unlikely to be either efficient or equitable.** For instance, enacting laws saying that governments must compensate all private property owners adversely affected by any environmental regulation, even when failure of the government to act

about whether or how to harvest timber fail to consider the costs imposed on valuable downstream fisheries.

The other threat to the region's economic vitality comes from the very forces that underlie it. Jobs and incomes in this region are growing partly because the region's amenities attract and hold people who find the environment attractive. **But population growth eventually can overwhelm the environment with congestion and environmental degradation that destroys the very amenities that contributed to growth in the first place.**

The residents of this region must guard against both of these threats if they are to realize sustained prosperity. They will have to avoid squandering the high-quality characteristics of the environment in an effort to insulate the region's historically important natural-resource industries from the realities of today's economy. They also will have to put significant effort into managing the environmental impacts of future population growth.

The risks associated with the ongoing economic change are real, but, so are the opportunities being created. Many in the region bear a disproportionate economic and social cost as others enjoy a disproportionate share of the benefits. For the most part, this inequity is occurring, not because one group is maliciously taking advantage another, but because of changes in the

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Consequently, those who are prospering from the transition have an obligation to assist those who are bearing the costs.

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regional, national and international economies that are ongoing and unavoidable. The existence of the inequity creates risks for everyone, however, because it gives those disadvantaged by the changes powerful incentives to oppose and undermine the economic transition that is underway. Consequently, those who are prospering from the transition have an obligation to assist those who are bearing the costs.

There are other risks as well. One is that individuals, communities, and political leaders may fail to recognize the realities of the new economy and fail to equip themselves for the transition. As employment in historically important resource-extraction industries in the PNW continues to shrink due to forces driven by the global economy, workers whose skills are specific to those industries will be increasingly vulnerable. The best way to secure prosperity for these workers is for them, their communities, and the region to invest in efficient and effective education and training programs.

Political forces, even powerful special interests, cannot bring back the economy of a past era. The unique natural resources of the Pacific Northwest remain among its most important economic assets. But the new jobs and income that are vital to the region's economic future will depend more on the *protection* of those assets than on their degradation.

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The Impact of Endangered Species Listings on Home Building and the Real Estate Industry

Summary

The harmful ecor omic effects of the Endangered Species Act are epitomized by the listing of the Northern Spotted Owl, which drove up timber prices significantly and subsequently increased the cost of new single family homes across the nation.

This is the National Home Builders Association's core indictment of the Endangered Species Act. A cursory glance at the data on Douglas Fir (the primary Pacific Northwest tree species used in home construction) production and prices would seem to support this assertion.

Between 1988 and 1994 Pacific Northwest production of Douglas Fir dropped from 10 billion board feet (bbf) to about 7 bbf – a 30% decline. During the same period the stumpage price for Douglas fir rose from $260 per thousand board feet to $650.

The average single family house uses about 10,000 board feet of lumber. So one could estimate that the increase in Douglas Fir stumpage prices would add between $5000 and $8000 to the price of a new house, assuming that other construction lumber prices rose proportionately and that the framing lumber cost was about twice the timber stumpage price. A 1993 National Home Builders Association ad claimed that the Spotted Owl listing added about $5000 to the price of a new home.

A more careful and serious look at the very same data, however, demonstrates that the Spotted Owl listing was *merely coincidental* to the rise in timber prices, as was the collapse of the Soviet Union. It appears that the Endangered Species Act listing served as a politically convenient explanation for what was a more fundamental market phenomenon.

FIGURE 1 compares Douglas Fir production and new single family home construction for the period 1975-1994. The decline in Douglas Fir production post-1988 is clearly evident. However, when viewed in the context of the longer time line it is clear that the observed decline was only part of a repeating boom-bust cycle in timber production – a cycle tied intimately to the rate of new home construction.

The data show that throughout the period Northwest timber production rose and fell *dramatically and systematically* as a function of new home construction. A full cycle seems to average about eight years. When housing construction crashed between 1978 and 1982 so did Pacific Northwest timber production, dropping 35%. As housing construction began to recover after 1983 Douglas fir production rose in synchrony, with a two year lag. Then the 1990 recession hit, the new home market collapsed, and demand for Douglas Fir dropped. Timber production fell accordingly. What this shows is that the "impact" of the Spotted Owl listing on Pacific Northwest timber production, to the extent there is one, is dwarfed by the more fundamental market relationship between timber supply and demand.

Moreover the data also show that Northwest timber production peaked at an all time high between 1987 and 1989. The subsequent production decline in the early 1990s, therefore, yielded a grossly exaggerated impression of an industry in collapse.

FIGURE 2 compares the growth in median single family home prices against Douglas Fir prices. As shown home prices are not significantly affected by the cost of timber from the Pacific Northwest. When Douglas fir prices fell 70% (current dollars) in the early 1980s home prices rose about 25%. When Douglas fir prices stayed flat during the mid 1980s home prices rose by almost 40%. And as Douglas fir prices almost doubled in the latter half of the 1980s home prices rose 15%. In other words, home prices rise – and rise significantly – regardless of the magnitude of the rise or fall in the cost of Pacific Northwest timber.

Two related observations are worth noting. First, in *constant* dollars Pacific Northwest timber prices today are no higher than they were in that late1970s. So one is left to wonder how this translates into real construction cost increases.

Second, as shown in **FIGURE 2** Douglas fir prices began to climb in 1986, well before the listing of the Northern Spotted owl and at a time when Pacific Northwest timber production was reaching record levels. From the curves in **FIGURE 1** it is clear that this steep rise i timber prices was driven by the housing

industry's demand for lumber, a demand that greatly outpaced timber supply. The near doubling of Pacific Northwest timber prices between 1987and 1989 and the continued demand-side pressures would have led one to forecast the early 1990s price jump in Douglas Fir prices regardless of the Spotted Owl's status. We also see that, as in the 1980s, the collapse of the housing industry in the early 1990s drove down the demand for Douglas Fir.

Lastly, **FIGURE 3** compares prices fluctuations for Douglas Fir and White Pine – a primary construction timber. Quite plainly the two price series have nothing in common. White Pine prices are insensitive to Douglas Fir prices regardless of how much the latter fluctuates. In fact White Pine stumpage prices held steady until 1993-1994 when bad weather affected timber harvests in the southeast producing a supply shortfall just as the home building industry was coming out of the recession. The weather-related price jump in white pine lumber may have added to home building costs, but it is obvious that the Spotted Owl listing was irrelevant to that price rise.

One important observation from the data reflects on the sorry state of anti-Endangered Species Act rhetoric. Today about 7 billion board feet of Douglas Fir is being harvested from the Pacific Northwest. This is about 15% *more* than was cut a decade ago prior to the owl listing and still represents only a portion of the total timber harvest from the reg on. Yet on March 13, 1996 Texas Senator Kay Bailey Hutchinson stood on the floor of the US Senate and remarked: "... There is no reason for people in the Northwest to have the entire timber industry shut down because of the Spotted Owl."

In sum, we see that housing construction rates drive long-standing cycles of production and prices in Pacific Northwest timber. There is no evidence that the listing of the Spotted Owl had any demonstrable impact on timber prices or that the price of Pacific Northwest timber had any measurable effect on home prices. The data strongly indicate that the growth in home prices would have grown at exactly the same rate even if the Spotted Owl had never been listed.

The Accumulation of Endangered Species Listings Has Seriously Eroded Private Property Values by Preventing Best Economic Use and Development of Land

If implementation and enforcement of the Endangered Species Act is trampling property rights (preventing property owners from maximizing economic value) and consequently gutting property values as severely as the rhetoric of the property rights movement suggests, then we should be able to find clear traces of the effect tied to accumulating species listings. In particular states with the largest numbers of listed species should exhibit the most severe drag on real estate values.

A strong and consistent indicator of real estate value growth (or loss) across the states is the change in the component of the gross state product derived from services in the real estate industry. Since the real estate industry works by commission as a percentage of the property sale value growth (or decline) in industry revenues will tend to reflect property value shifts over time.

The graphs in **FIGURE 4** depict the relationship between the number of listed endangered species and the growth in real estate industry performance by state. Three five-year periods are compared 1975-1980; 1980-1985; and 1985-1990. The vertical axis on each graph corresponds to the (adjusted) five year average annual growth in the value of real estate industry goods and services. The horizontal axis corresponds to the (adjusted) number of endangered species listings. (The numbers for species listings are transformed counts and therefore are not simple positive integers.)

These graphs are a special form of scatter plot that show how the two variables move together *after taking into account (compensating for) differences among the states in terms of land area, population and economy size, percent of economy in extractive industries, urban population, and region.* In other words, both axes are adjusted (using standard regression techniques) to remove the effects of these confounding influences.

If endangered species listings systematically harm real estate values then we should see a pattern moving from the upper left of the graph to the lower right. The states with the fewest listed species should have the most vibrant real estate industries (upper left). The states with the largest number of species should have the poorest performing real estate industries (lower right).

This is clearly not the case for any of the graphs. The data for the period 1975-1980 show a flat line. There does not appear to be any systematic relationship. This is as might be expected since during the first half decade of the Endangered Species Act the relative number of species listings was small and implementation and enforcement of the Endangered Species Act were restricted to public lands.

However, the two graphs for the subsequent periods show a *positive relationship*. Larger numbers of listed species are associated with better real estate industry performance. Comparing the three graphs we find that as the total number of listed species accumulates the association with better real estate industry performance gets more positive and stronger! (See regression tables at the end).

The results are easily interpreted: states with exploding populations, dynamic economies, and as a consequence powerful real estate markets putting increasing pressure on wildlife habitats. This increases the likelihood of new species listings under the Act. Thus, endangered species listings are not driving the real estate market down, but rather the real estate market is driving endangered species listings up without any apparent braking effect on the former.[1]

[1] County-level studies in Texas and the West have reached similar conclusions.

Figure 1: Douglas Fir Production & New Home Construction

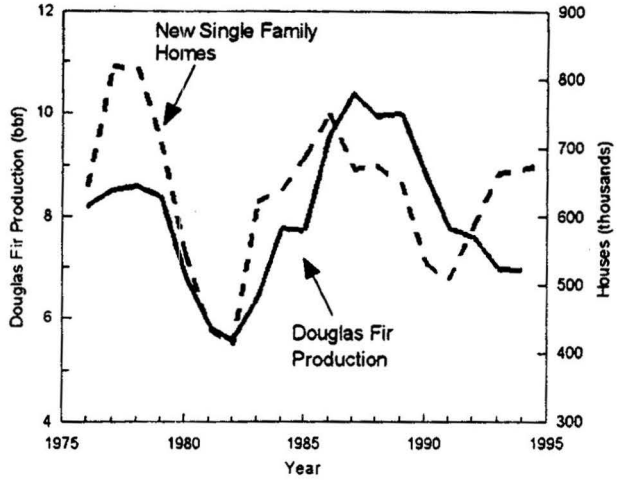


Figure 2: Price Changes for New Single Family Homes and Douglas Fir

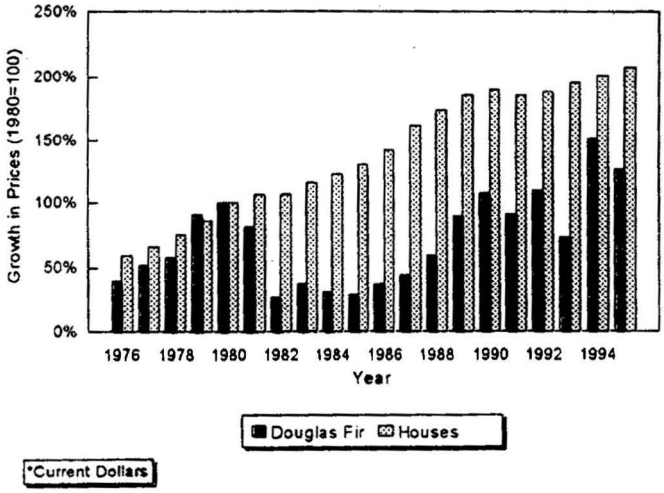
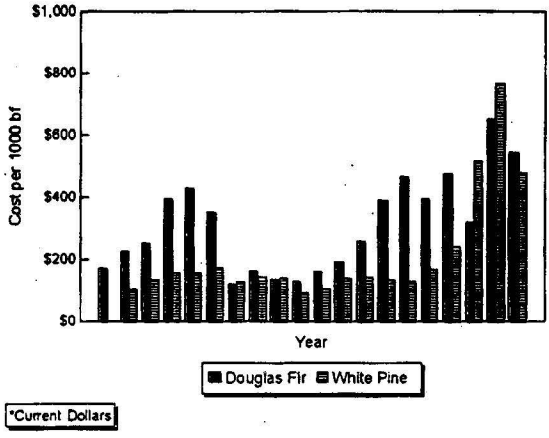


Figure 3: Douglas Fir & White Pine Prices



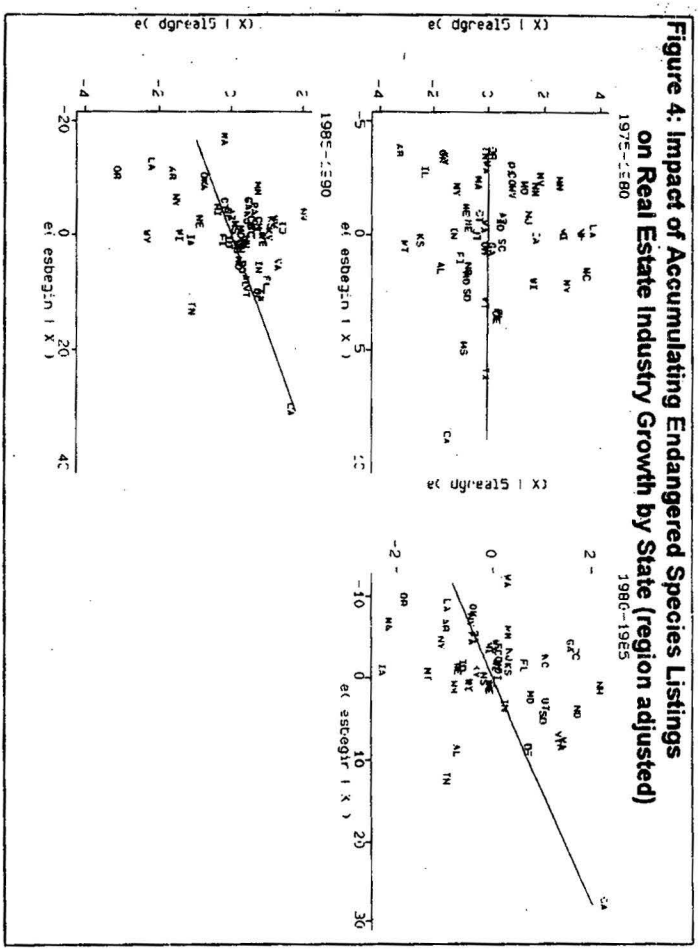


Figure 4: Impact of Accumulating Endangered Species Listings on Real Estate Industry Growth by State (region adjusted)

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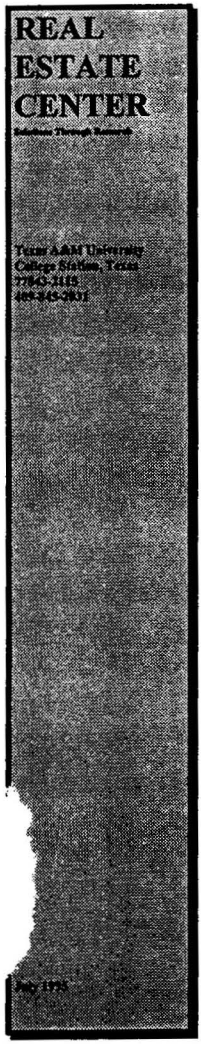
Massachusetts Institute of Technology
Cambridge, MA
617-253-8078



An Analysis of the Impact of the Endangered Species Act on Texas Rural Land Values

by

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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**	4,887	4,114	4,885	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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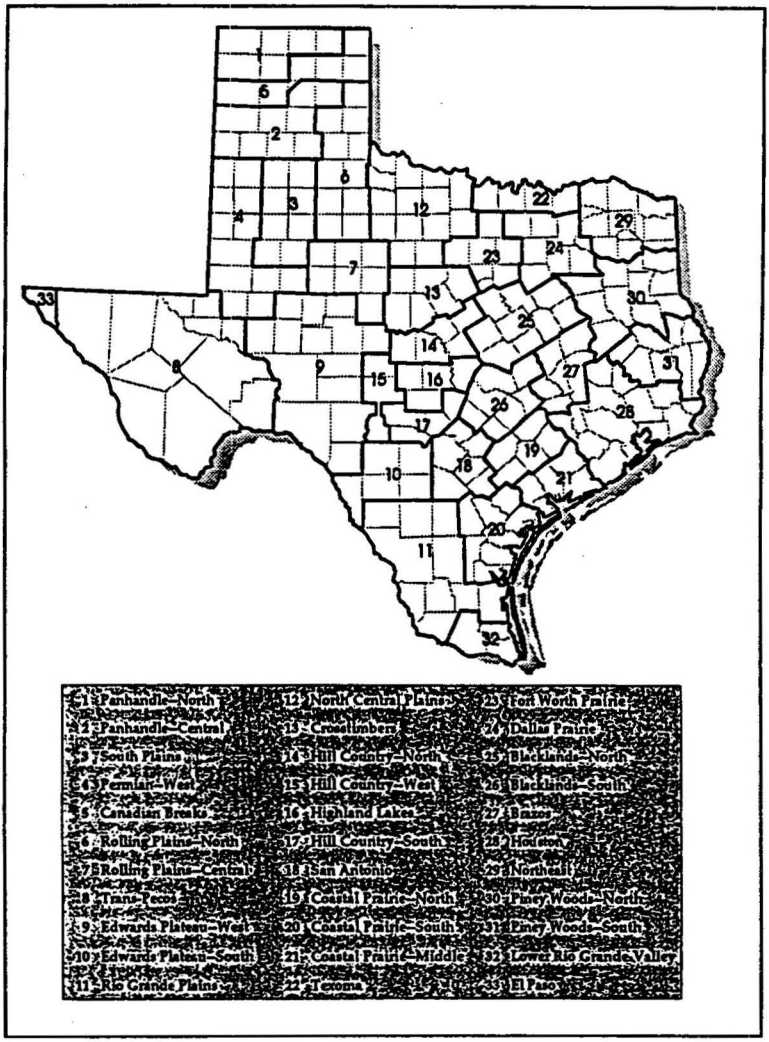
Appendix

Texas Land Market Areas



Source: Real Estate Center at Texas A&M University

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