

HOW TO PREVENT SALMON SPECIES FROM DISRUPTION OR EXTINCTION

HEARING
BEFORE A
SUBCOMMITTEE OF THE
COMMITTEE ON APPROPRIATIONS
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SPECIAL HEARING

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CONTENTS

	Page
Opening statement of Senator Slade Gorton	1
Opening statement of Senator Patty Murray	5
Statement of Representative Norman Dicks	7
Statement of William Ruckelshaus, Chairman, State Salmon Recovery Fund- ing Board	9
Prepared statement	12
Statement of the Washington Salmon Collaboration, March 15, 1999	16
Statement of Doug Sutherland, county executive, Pierce County, WA	22
Prepared statement	24
Statement of Jerry E. Clark, deputy director for regional programs, National Fish and Wildlife Foundation	24
Prepared statement	26
Statement of Ron Sims, county executive, King County, WA	27
Prepared statement	29
Statement of Jim King, consultant, Private and Municipal Planning Services	38
Prepared statement	40
Statement of Paula Mackrow, executive director, North Olympic Salmon Coa- lition	42
Prepared statement	44
Statement of Peter Heide, director, forest management, Washington Forest Protection Association	47
Prepared statement	49
Statement of Jack Kaeding, executive director, Fish First	50
Prepared statement	52
Statement of Joan Burlingame, coordinator, Friends of Rock Creek Valley	53
Prepared statement	55
Statement of James Waldo, lead facilitator, Hatchery Scientific Review Group	63
Prepared statement	65
Statement of Peter Bergman, director, biological services, Northwest Marine Technology	67
Prepared statement	69
Statement of Billy Frank, chairman, Northwest Indian Fisheries Commis- sion	70
Prepared statement	71
Statement of Jeff Koenings, director, Washington Department of Fish and Wildlife	72
Prepared statement	74
Statement of Frank Urabeck, member, Northwest Marine Trade Association ..	76
Prepared statement	77
Statement of Daniel Diggs, Assistant Regional Director for Fisheries, Pacific Region, U.S. Fish and Wildlife Service, Department of the Interior	86
Prepared statement	89
Statement of Frank L. Cassidy, Jr., chairman, Northwest Power Planning Council	90
Prepared statement	93
Statement of Victor W. Kaczynski, scientist	97
Prepared statement	99
Statement of Representative Jay Inslee	108
Statement of Will Stelle, regional administrator, National Marine Fisheries Service	112

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THURSDAY, APRIL 20, 2000

U.S. SENATE,
SUBCOMMITTEE ON INTERIOR AND RELATED AGENCIES,
COMMITTEE ON APPROPRIATIONS,
Redmond, WA.

The subcommittee met at 12:15 p.m., at the Veterans of Foreign Wars, 4330 148th Avenue, NE, Hon. Slade Gorton (chairman) presiding.

Present: Senators Gorton and Murray.

Also present: Representatives Dicks and Inslee.

OPENING STATEMENT OF SENATOR SLADE GORTON

Senator GORTON. Good afternoon, and welcome to a hearing on part of the U.S. Senate Committee on Appropriations, Subcommittee on the Interior. I appreciate the time that many of you are taking, many of you from considerable distances, to attend this, in some respects, summit on Washington State salmon recovery efforts.

As the chairman of that Interior Subcommittee, I'm delighted to Chair the hearing and welcome Senator Murray. I believe we'll have Congressman Dicks with us relatively soon. And we hope that Congressman Inslee will be with us a little later on in the afternoon, reflecting the broadened bipartisan view of the importance of the issue before us.

I want to express my appreciation to the Redmond Chapter of the Veterans of Foreign Wars for allowing us to have this meeting here in its hall. The men and women of that organization have distinguished themselves through honorable service to our country and continue to carry on the legacy and service to their community. We're pleased to be their guests this afternoon.

Today's hearing will center on a subject of importance to everyone in the Pacific Northwest—how to prevent salmon species from disruption or extinction.

On March 16, the Seattle Times printed an article on the front page with the headline, "Are we any closer to saving the salmon?" That is a question on the minds of many Washington residents, myself included.

A little more than a year has passed since the National Marine Fisheries Service listed the Puget Sound Chinook and several other salmon and steelhead species as threatened under the Endangered Species Act. That even served as a wake-up call for citizens across Western Washington.

Last year I chaired a field hearing at the Sea-Tac Airport at which local, State, Federal, and tribal representatives discussed the challenges ahead.

Now this hearing provides an appropriate opportunity to measure our progress so far to recognize those local and State recovery and preservation efforts that have been successful, to acknowledge those fields in which improvement is necessary and to move ahead together in an even stronger and more unified manner to save salmon for generations to come.

While we're here together in Redmond today—and the majority of those people present are residents of Western Washington—we must always keep mindful that this is a State-wide crusade. Residents of Eastern Washington are deeply aware of the crisis facing salmon and steelhead species on the Columbia and Snake River and on other tributaries, and in many respects have been dealing with the issue for a considerably longer period of time.

Farmers in the Methow Valley have lost their livelihoods as modifications to irrigation and canals with fish screens have been made to ensure that salmon are not harmed.

Growers of millions of tons of grain, wheat and other commodities produced in Southeast Washington and transported down the Snake and Columbia rivers are concerned that their very existence is threatened by proposals to remove the Snake River dams.

Over the last decade, some \$3 billion has been spent by Federal and State agencies for salmon recovery, often, unfortunately, with little to show for that expenditure and even less consensus among the various stakeholders as to what decisions ought to be made.

Some passionately advocate removal of the Snake River dams even though expensive studies by the U.S. Army Corps of Engineers have raised doubts as to whether the modest benefits to salmon would justify the enormous power, environmental, transportation and economic cost to the region that breaching dams would cause. Unfortunately, when the Corps of Engineers completed its study last December, it did not render a recommendation.

Yesterday, I think all of us were troubled to learn that the reason that no recommendation was given about dam removal was that high officials in the Clinton-Gore administration directed the Corps of Engineers to suppress the Corps' internal recommendation that the dams be kept in place.

That action raised serious questions about the administration's motives and, unfortunately, undercuts the trust of Washington citizens that future spending of their tax dollars on salmon recovery efforts would be based on sound science rather than on a political agenda.

I believe there are far more productive areas which we should focus on in our efforts to mitigate declining salmon runs, including habitat restoration and preservation, reforming hatcheries to meet clear recovery goals, controlling natural factors of salmon decline and addressing the controversial subject of harvest limits.

These are subjects that aren't unique to any one area of the State. We all share the goal of finding the most efficient and effective methods of preventing salmon species from going extinct.

There's no question that restoring salmon will continue to be expensive, and it will take years to produce tangible results. In my

view, however, giving Federal agencies a blank check to implement increased bureaucracy and a top-down management approach to salmon recovery has simply proven to be the wrong way.

While the Federal Government certainly has a continued obligation to fund the Pacific Salmon Treaty, and all of us here have supported that funding, I also believe that the State and local restoration projects have already proven to be more directly effective in saving salmon and at less cost than those imposed by the Federal Government.

That's why I'm pleased that Congress approved my request last year to direct \$18 million to the Washington State Salmon Recovery Board, \$750,000 to State-created regional fisheries enhancement groups, and an additional almost \$4 million to the National Fish and Wildlife Foundation to provide a more direct and efficient method of funding volunteer and locally-driven recovery projects.

This week the foundation will announce awards of nearly \$1.3 million in grants to local groups State-wide, including the Mid Puget Sound Fisheries Enhancement Group, The Northwest Chinook Recovery Group and the Tri-State Steelheaders.

I'm also proud with the support of Senator Murray and Congressman Dicks that we secured \$8 million from the Commerce Appropriation Subcommittee to support Washington's tribal recovery efforts, and an additional \$3 million for implementation of the Washington Forestries and Fish agreement.

At the same time that Congress provided these important funds to eight local salmon recovery efforts, it directed the National Marine Fisheries Service by July 1 of this year to come up with goals and objectives of the targeted number of fish that the National Marine Fisheries Service seeks to recover for every threatened Puget Sound salmon and steelhead species. That is a little more than 60 days away, and I expect the Fishery Service to abide by that request.

Measuring the performance of the myriad of salmon recovery efforts and Puget Sound in coastal regions will depend on upon having goals outlined in a timely manner.

The first panel of witnesses today will focus on issues of funding and coordination of salmon efforts on the Federal, State, and local level.

The second panel is an important transition from the first one. A number of regional, local habitat restoration groups are represented today by several individuals who are leaders not just in their communities but in their efforts to save salmon.

They will continue to have my full support for the successful course they're taking so far. These individuals have been on the ground actually improving habitats stream by stream so that fish may survive, many of them before any Federal agency wrote regulations telling them how they should do it. Federal agencies should be making it easier, and not more difficult, for these groups to carry on their activities.

So while I'm interested in the positive success stories they have to share, I'm also interested in their recommendation and thoughts on how their valuable work can be made even more efficient and effective by help from the Federal level.

I add that the constraints of a 5-hour field hearing don't allow time to hear from the widespread great work being done beyond habitat restoration, including education by nationally recognized groups like Adopt-A-Stream, habitat preservation by numerous volunteer groups and local communities and regional efforts to remove barriers to fish passage and to improve water quality and streams across Puget Sound.

These groups are all deserving of our praise and support and are further evidence of Washington citizens' determination to do all that is necessary to save our state's rich salmon heritage. I believe so strongly in their work that I am pleased when I have the opportunity to meet with these groups when I'm in the State.

Tomorrow, I'm looking forward to participating in a project sponsored by Planet CPR, and I'll be meeting Saturday with organizers of the Hood Canal Salmon Enhancement Group and Long Live the Kings, a group that has also taken initiative to seek reform our State's hatcheries.

Our third panel will be devoted to the continued role that I believe hatcheries must play in the overall effort to recover salmon. There is recently evidence of spring chinook salmon returning from the Pacific Ocean to the Columbia River and other tributaries at a rate of double or triple the average number of chinook that have returned at this time of year for the past decade.

Many of these fish are hatchery fish. For more than a century, State, tribal, and Federal governments have built hundreds of hatcheries on the Columbia River and on Puget Sound and on coastal waters.

These hatcheries have produced millions of salmon and steelhead that have been vital recreational and commercial fisheries, as well as meeting tribal treaty obligations. In some cases, hatcheries have also provided the means to prevent runs of salmon on certain rivers and streams actually from going extinct.

While I support these hatcheries, I also support reforms that will ensure the important goal of preserving natural runs of salmon species and the producing hatchery fish for tribal, recreational and other productive uses.

I'm pleased to have a panel of witnesses representing tribes, sports fishermen and State and Federal policy and science expertise to describe the important objectives of hatchery reform and to set forth how independent scientific research will improve Washington hatcheries and eliminate the need for controversial policies like clubbing to death thousands of hatchery fish as a means to separate wild and hatchery fish.

Many have expressed skepticism about the agency-driven science involved in salmon recovery efforts. I share those concerns. Science must be accountable.

I introduced legislation a few years ago that helped create the independent, scientific review panel to ensure peer review of the millions of dollars that are spent each year on scientific projects by the Bonneville Power Administration and to assure that such projects have merit.

I'm concerned that the present salmon recovery science touted by the National Marine Fisheries Service and the Fish and Wildlife

Service does not adequately consider factors of salmon decline that have no direct link to human activity.

For example, recent studies have revealed that changes in the climate and the Pacific Ocean and the ocean estuary may greatly impact the nutrients that feed salmon and drastically reduce their survival rate. It's also clear that natural predators, such as Caspian terns, sea lions and other mammals feast on a significant number of salmon smolts and returning salmon in areas near the ocean. These factors must be addressed in any major policy decision that propose to regulate human activity. We will hear testimony from several witnesses on these issues in the fourth panel.

And finally, there will be an opportunity for the Federal and State officials to respond to what they have heard throughout the afternoon by other panelists and to answer questions.

I reiterate my message to the Federal agencies that they should be encouraging and should be giving incentives to State, tribal, local governments, and volunteer groups to come up with creative efforts to save the salmon, not to make it more difficult for them.

I hope that the National Marine Fisheries Service can find the time to await for the important planning efforts taking place right now in the Tri-County region with respect to 4(d) rules.

I request of the Federal officials, is that as questions arise about Federal actions, they will listen and offer constructive and concrete suggestions on how to remedy any obstacles created by those actions.

A unified partnership involving all entities is the best way to move salmon recovery forward. And I hope that by the time another salmon summit is convened in a year or so, we will have even more positive stories to share.

With that, we will hear from Senator Murray.

OPENING STATEMENT OF SENATOR PATTY MURRAY

Senator MURRAY. Thank you very much, Mr. Chairman. I'm pleased to be here today with you and Congressman Norm Dicks 1 year after our last gathering to hear how salmon recovery efforts are progressing.

It is really great to see so many involved and interested parties that have come here today to share their thoughts on salmon recovery efforts, and I want to thank everybody who's taken time to be here today to participate in this important hearing.

I still believe that the people of our State and region continue to face the challenge of salmon recovery with the determination and commitment. We are faced with a remarkable challenge, and our State, our counties, our cities, our tribes and citizen groups are working together to bring our runs back to a healthy State, while maintaining a healthy economy, both of which are very important to our quality of life here in Washington State.

I do believe concern and apprehension are rising across the State as we come closer to a decision on the four lower snake dams and the implementation of the 4(d) rule, and while this is understandable, we should be consciously trying to avoid unnecessarily inflating tensions.

And I must say, I'm concerned with what I believe is a difference in the constructiveness of the debates that are occurring in different parts of our State.

While the recovery efforts here in the Puget Sound area and other parts of Western Washington has its share of problems, I believe that there remains a shared desire to move forward in the recovery of salmon. On the east side, however, I worry that we are failing to move beyond the dam debate. Perhaps that's impossible until NMFS releases its biological opinion, but we all know changes are necessary in the other 3Hs for recovery to succeed, and I hope we can start to move forward to develop shared visions in those areas.

There is no one-person agency or industry responsible for our situation. Our conscience and the law of the land say we have a responsibility to recover our salmon stocks, and it's a responsibility we all share. We can meet that responsibility if we cooperate, if we seek innovative solutions, and if we maintain open and constructive communications.

There are good recovery planning and action efforts, both big and small, that are occurring across our State. Last June, I attended the reopening of the Hazell Dell Slough. That project is just one example of collaborative, on-the-ground activities that are occurring around our State.

New efforts will hopefully include one in the Okanogan, where the Colville Tribe and the Okanogan irrigation district have proposed a joint effort on water use that I hope we in Congress will be able to help and support. Senator Gorton has legislation to study a similar proposal by the Kennewick irrigation district, and I will certainly support that effort.

I have introduced legislation to create the Puget Sound Ecosystem Restoration Initiative and with Senator Gorton as a cosponsor. I also want to thank Congressman Inslee for his leadership on this legislation in the House. He has his bill supported by Congressmen Dicks, McDermott, Metcalf, Smith, and Baird. So we do have good constructive efforts in a bipartisan way moving forward.

What should be noted is that all of the initiatives I just mentioned were conceived at the local level. This bottom-up approach to recovery is absolutely vital to all of our efforts.

Let me be clear. We need local communities. We need their commitment and their unique knowledge of local conditions to get results.

We also need to work on larger policy and framework issues. The Timber Fish Wildlife agreement is a good example of a large scale effort to meet recovery goals and provide certainty to our economic base.

I applaud those who are positively engaged in the similar agriculture, fish, and water process. The Governor and Jim Jesernig, who's director of the State's Department of Agriculture, have done a tremendous job of moving this process along, which I believe holds great promise. I hope industry will continue in this constructive dialogue, and I urge the Federal agencies to prioritize the AFW process as they did with the TFW agreement.

As I mentioned, this is a shared responsibility, and I also want to recognize today the leadership of the Clinton-Gore administration in helping the region deal with this complex issue.

From going toe-to-toe with Canada on the Salmon Treaty to providing local resources for recovery efforts, the president and vice president have shown commitment to this issue. From local communities to the administration, we all have a role to play, and I'd like to spell out what I think NMFS and the Congress needs to do to ensure that we produce real results.

First, NMFS needs to provide clear goals, and then they need to help in reaching those goals, and overall, expedited communication.

Congress also has responsibilities in this relationship. Congress needs to first ensure that NMFS is communicating with constituents, identifying goals and working with constituents to meet those goals. Congress also needs to provide resources, including to NMFS in the form of manpower, to ensure that when cities or counties have questions, there is someone there who can get them the answers.

We all know that the best opportunity to protect our economy and our quality of life is to work together. We must recognize and identify problems, and then approach them constructively. I believe the initiatives mentioned before our perfect examples of such approaches, and I look forward to supporting more such proposals.

As some say, the low hanging fruit has already been picked. The harder work is yet to come. I strongly believe, however, that in the end, what is best for salmon will likely be what is best for us and for our children's future.

Mr. Chairman, I do want to apologize to you and some of our later witnesses. I do need to leave about 2:15. I have another hearing on youth violence that is very appropriate for today as well that has been planned for some time. But I will be reading the testimony of all the witnesses, and I do want to thank Senator Gorton and Congressman Dicks for participating in today's hearing. Thank you.

Senator GORTON. Congressman Dicks.

STATEMENT OF REPRESENTATIVE NORMAN DICKS

Mr. DICKS. Thank you, Mr. Chairman, and Senator Murray, it's good to be with you today.

I'd like to start by offering my thanks to Senator Gorton for holding this hearing again this year and for asking me to participate with him. As a ranking Democratic member on the House Interior Appropriations Subcommittee, and with Senator Gorton chairing the Senate Interior Subcommittee, and of course, Patty Murray being on the Appropriations Committee, we all look forward to the continuing key role we can play to help the region respond to the salmon and bull trout listings.

Many of the witnesses that we will hear from today also participated last year. I look forward to hearing their perspective now that we are a year into our recovery effort and beginning to face important deadlines under the Endangered Species Act.

We are both very pleased that so many of our colleagues are able to join us today. And Representative Inslee, as I'm told, will be joining us a little later this afternoon. And we each extend our ap-

preciation for the individuals and groups who will be providing testimony.

We thank you for your time and commitment to restoring these salmon runs. I'm pleased that we can again listen to the region in this forum. I think it is imperative that Congress fully understands the significance of these particular listings under the Federal Endangered Species Act.

People in the region have probably heard this before, the point is extremely important. There has never been an ESA listing impacting such a large urban area, and the species itself is one of the most complex ever listed.

We will need to pool our efforts and our expertise if we are to be successful in the recovery of these fish. And no one agency or group can do it alone. This will require massive cooperation among all levels of government and with private groups.

As many of you are aware, President Clinton and Vice President Gore, at the request of our delegation, and particularly Senator Murray and I, included \$100 million for the West Coast Salmon Recovery Initiative last year and again this year in the administration's budget request. That's always helpful. It's much more difficult to add money if it's not in the budget.

This funding last year helped provide critical support to our local governments and tribes as we began implementation of restoration activities in the Puget Sound area. And I want to commend Senator Gorton for getting \$80 million added in the Senate bill last year. He played a crucial role.

We are deeply committed to securing these funds again this year because we recognize that the recovery will be a multi-year effort and that these funds will again be very well used. I am pleased that the administration recognized that this effort requires a substantial Federal commitment, but any Federal commitment must be a partnership with the region.

The Federal salmon money requires a State match. You have our assurance that we in the Congress will do whatever we can to secure additional Federal dollars this year and are pleased to see the State has also demonstrated its firm commitment by providing State funding.

The Salmon Recovery Initiative is crucial, and it has an even better chance of success now that we have reached, as Senator Murray mentioned, a new agreement with Canada on the U.S.-Canadian Pacific Salmon Treaty.

To implement the new agreement, the administration requested \$60 million last year, which we were not able to fully fund, but we did get started. And this year, the administration is requesting, again, those same level of funding, which I hope the Congress will be able to provide.

We must acknowledge the linkage of the State's recovery efforts with the Salmon Treaty because of the basic life cycle of salmon. And agreement to reduce the harvest on these threatened endangered runs is providing invaluable help to each of the State's recovery efforts.

The administration has, again, included requested funding for tribal participation in the Salmon Initiative. We must recognize our commitment and legal obligation to the Pacific Northwest tribes,

and I'm committed to securing additional funds this year to ensure their full participation in the recovery effort.

I'm pleased that my good friend, Chairman Bill Frank of the Northwest Indian Fisheries Commission, will join us today and look forward to his testimony. As co-managers of our State's fisheries, we must act in tandem with the tribes on any and all recovery strategies.

I also want to compliment the local efforts in the region for their dedication and devotion to his very difficult issue. And I'm pleased that the Senator is meeting with the Hood Canal Salmon Enhancement Group, a group from my area, over in the 6th Congressional District, that we have been funding over about a 5-year period. And I believe that the work that they're doing, along with Long Live the Kings, has really been instrumental in helping to restore salmon runs in the Hood Canal area. They've done some amazing work in removing culverts and improving habitat and doing a supplementation. I think it's a real example—a key example in the State—of how we can get this done.

And I might add that I even went out last year in September and viewed some of these Chinook salmon jumping right out in front of Lilliwaup, and it was quite enticing.

So I'm with the Senators. I think these salmon enhancement groups all over our State—and we've been helping support them from the Federal level back to the State and now through the foundation—have done some extraordinary work and can do much more. And we need to support them; we need to enthusiastically give them a little help.

It is my hope that this year's hearing will help us clarify and focus our efforts on the massive task of recovering these fish. I look forward to hearing the witnesses' testimony, and knowing that our time is limited, look forward to reading any additional testimony submitted by others.

So, Mr. Chairman, thank you for providing this hearing again and this opportunity to hear from all of our local friends. And again, thank you for your continued leadership on this important issue.

STATEMENT OF WILLIAM RUCKELSHAUS, CHAIRMAN, STATE SALMON RECOVERY FUNDING BOARD

Senator GORTON. Thank you, Congressman Dicks. I must say, as a slight further introduction, that I think that the State has been very fortunate, and Governor Locke very wise, as picking Bill Ruckelshaus as the chairman of the State Salmon Recovery Board.

I know it was a hard sell. It was not something he volunteered before immediately, but the Governor picked the very best person available in the State of Washington, in my opinion, for that position. And we will now begin the hearing by hearing from him as to what he has to say.

Mr. RUCKELSHAUS. Mr. Chairman, thank you very much for those kind words, Senator Murray, Congressman Dicks.

When you held this hearing last year I was here in a somewhat different capacity. I was then appearing on behalf of a collaboration of business and environmental interests; there were business and

environmental leaders. I suggested that we create a coordinator for doing all this across at least our State.

That suggestion has not resulted in anybody. It certainly isn't me. That was not who I had in mind anyway when I made the suggestion, but the Governor did ask me to Chair this Salmon Recovery Funding Board, and I'll give you just a minute on that.

I have submitted a statement for the record.

Senator GORTON. It will be included in the record in full.

Mr. RUCKELSHAUS. I will not read the whole statement; we'd be here all afternoon if I did. Let me just take about 5 minutes to tell you that, essentially my message is optimistic.

I think a lot of good things have happened between now and this hearing a year ago. By no means are we home free, but a lot of things have happened.

Both Senator Gorton and Senator Murray mentioned the local groups and their dedication to restoring habitat. In my view, that's the single biggest asset this State has right now, is the energy and enthusiasm of the people living in these watersheds; their knowledge of what needs to be done to restore habitat friendly to salmon and the work that they've been doing, in some cases 15–20 years.

You can't travel—as I know you have, all three of you have—to these parts of the State and not be impressed with the tremendous enthusiasm, inspired really by the enthusiasm of these people in these watersheds.

I think we have the beginning of a collaborative leadership approach here in Puget Sound. Increasingly, science is informing our decisions, and I think, as all of you have mentioned in your opening remarks, there is increased funding at the Federal and State level for salmon recovery.

All of those things are important. As I mentioned, they're not in and of themselves enough, but they certainly are steps in the right direction and things that we can take some hope from.

There are also a number of other things happening that are terribly important that indicate leadership that is springing up throughout the State. There are regional recovery efforts going on in the Southwest Washington—along the Columbia River. The Lower Columbia Fish Recovery Board has been created by the legislature. It is now itself representing some four or five counties, preparing a recovery plan for that part of the Columbia River.

There are governments and tribes working in North Central Washington, in Southeastern Washington, doing really remarkable things against some pretty long odds. And again, when you're on the ground looking at the projects that have been sponsored and worked on by those people, it really is inspiring.

As you mentioned, the Salmon Recovery Board has been created. We've been in operation since August. All of our meetings have been held in the open. We have issued a scoping document that dictates what we understand to be our responsibility. It's essentially to try to restore and preserve habitat that is friendly to the fish, to do that in conjunction with the lead entities that were created by the legislature and the same statute that created the SRF Board.

These lead entities are local groups selected by governments and assisted by citizen committees that are appointed to the lead enti-

ties. It's through those lead entities that every request for projects come to the SRF Board.

We have had one round of funding. All of our work, by the way, has been done completely in the open so that people could see what we're doing and what we're thinking. We promised in this first round of funding—which was concluded last month—that we would fund somewhere between \$10 and \$15 million worth of projects. We did this.

We purposely kept this first round relatively low to learn—have the board learn—learn how we can help the lead entities in partnership present to us the projects that are scientifically based and most likely to see that that money is spent to ensure that it will assist salmon.

As would be true in any first round, it wasn't perfect. There are unhappy people who didn't get our their projects funded. We had 270 requests for some \$45 million. We funded 84 projects at \$13 million.

Tri-County is working. The Hood Canal Coordinating Council. There are hatchery reform efforts going on which you're going to hear about later. There are improved protection programs in a number of counties. The co-managers are setting interim goals, the co-managers being the tribes and the State, Department of Fish and Wildlife. These are all examples of progress.

One last, and I think very important effort that is going on, is one of the purposes of this first panel, and that is, to coordinate everything that is going on among levels of government, and within a particular level of government, the various agencies that are involved.

Dan Evans and I convened a meeting over in Port Ludlow last October, and invited some 200 people. And most of all of them attended from State, Federal, tribal citizen groups, and local watershed groups in Puget Sound to see if we couldn't develop a shared strategy.

We came out of that meeting that lasted 2½ days with a commitment to a shared strategy. People had been working very hard on it ever since, people who were there, Terry Williams, representing the Tualip Tribe; Bob Kelly from the Nooksack Tribe; Jeff Koenings, who is the director of the Washington State Fish and Wildlife; Will Stelle, the regional director of NMFS; Gerry Jackson, the regional director of the U.S. Fish and Wildlife Service; and Curt Smitch from the Governor's Salmon Recovery Office, all have been meeting for weeks now to try to develop a shared strategy so that we could be all singing from the same sheet of music and pulling in the same direction in Puget Sound. We're focused on Puget Sound.

A test of my testimony is some of the early results of what we've done. It's an effort to draw timelines and show how coordinating the science, the recovery goal and the development process. The technical review team for Puget Sound that's now been appointed by the National Marine Fisheries Service is undertaking coordinating planning, coordinating the harvest hatchery habitat efforts and measuring results, and then ensuring that adequate funding is there.

The other figure that I presented indicates where we are now and the kinds of things that will be address through early actions, through the use of things like the 4(d) and the goals that will be set by the technical recovery team and then adopted throughout the Puget Sound area, these things will result in the fish coming back. It's going to take a while. It won't happen overnight, and there will be a lag in which we see fish beginning to come back in significant numbers as these shared strategies begin to take place.

PREPARED STATEMENT

I think all of this is very hopeful, and it also is aimed at trying to support, what I mentioned, was I think the most important asset, and that is the energy and enthusiasm of these people at the local level. We've got to give them the kind of help that they need and get behind them. And if we do that, I think we have the chance of a successful outcome of this over time.

[The statement follows:]

PREPARED STATEMENT OF WILLIAM RUCKELSHAUS

In its consensus statement of March 15, 1999, the Washington Salmon Collaboration identified the need to "expand and intensify—efforts to ensure effective coordination and collaboration within and among all levels of government" as one of its overarching recommendations for actions needed to recover the threatened Puget Sound Chinook salmon. In this paper we expand upon the rationale for greater coordination, provide specific examples where it would be helpful, and suggest one mechanism for achieving this goal. This paper represents the views of the authors only, and is not a consensus document of the collaboration. We plan to discuss these issues at upcoming meetings and may develop consensus recommendations at that time.

The citizens of the Pacific Northwest face an unparalleled challenge in their efforts to design an effective strategy to restore the health of salmon populations throughout the region. Within Washington state alone, 16 species of salmon are listed as threatened or endangered, and the bulk of the state, including the heavily populated Puget Sound region, is now affected by listed species. A number of additional populations are listed as threatened and endangered in Oregon and California with still more proposed for listing in all three states.

The number, scope, and nature of these endangered species listings have created a situation never before experienced in the implementation of the Endangered Species Act. Other endangered species such as the grizzly bear or the bald eagle have spanned large geographic ranges and still others, like the California gnatcatcher, have been listed near heavily urbanized centers. But no other listing or series of listings share the set of attributes of the threatened and endangered salmon. Some of the features of the salmon listings that have direct implications for the design of recovery efforts are the following:

Regional scale.—The set of salmon listings will significantly affect four states (California, Oregon, Washington, and Idaho) and will have some effect on Alaska and Canada. Federal, state, local, and tribal governments and agencies, as well as relationships with Canada, must be effectively integrated across this region.

Multiple listings.—Because multiple species and Evolutionary Significant Units (ESUs) are being listed, the application of science to the design of recovery strategies and the nature of recovery activities themselves must be different for salmon than has been the case with other wide-ranging species. Since the ecology and demography of each salmon ESU is distinct, extensive data and analysis is needed to develop recovery strategies for each ESU and recovery actions must be taken across all ESUs. Setting aside a few large protected areas can sometimes be pivotal in maintaining populations of wide-ranging species. That strategy cannot work in the case of the multiple ESUs of salmon.

Freshwater life stages.—Freshwater ecosystems are the ultimate "integrator" of land use practices. Changes in land or water use or release of pollutants anywhere within a watershed can, and often does, affect the downstream freshwater ecosystem. Consequently, in principle human actions anywhere across the landscape could potentially harm salmon habitat and be considered a "take," which makes it difficult to establish practical but scientifically based take prohibitions. Conversely,

recovery strategies need to take into account the entire set of human actions within a region in order to protect and restore salmon habitat.

Multiple driving forces.—Salmon have declined as a result of habitat loss and degradation, water pollution, overharvesting, and negative impacts of hatchery programs. Effective recovery efforts require actions that address all of these driving forces, yet each has its own institutional and political dynamics and its own stakeholders. Whereas the spotted owl listing required that a solution was acceptable to one important industry (forest products) and its stakeholders (including forest dependent communities), the salmon listing multiplies this challenge many-fold.

Low "Signal to Noise" ratio.—Salmon populations are notoriously variable. Year to year stochastic variations in recruitment and survival, compounded by decadal variation in such variables as ocean productivity, make the detection of population trends and the analysis of the effectiveness of management interventions extremely difficult. Long-term studies are typically needed to isolate the "signal" from the environmental noise in any demographic study of salmon.

These attributes of the salmon listing pose obstacles to the design of effective recovery efforts in the Pacific Northwest and it is unlikely that experiences with previous endangered species listings can provide suitable models for this situation. Successful recovery efforts will require a level of coordination "horizontally" across states (and nations), and "vertically" from local governments to federal agencies, unprecedented in the history of resource management in the western United States. For this reason, the Washington Salmon Collaboration has identified the need for more effective coordination among and within all levels of government as one of the primary overarching needs for scientifically based, cost efficient, and effective recovery strategies. In particular, we believe that there is an opportunity within the Puget Sound region to attempt a "pilot" effort at this type of coordination, with a focus on the recovery of the Puget Sound Chinook and other listed species within this ESU.

The current efforts to establish the scientific basis for recovery strategies and the processes underway to develop recovery plans themselves illustrate both the need for more effective coordination and the costs associated with the lack of that coordination, and we discuss these two situations below.

ENSURING SCIENCE-BASED ACTION

Numerous initiatives are now being launched across the Northwest to help provide the scientific basis for salmon recovery planning. In the case of Puget Sound, the various science bodies that exist or are being proposed that would have input into the design of a recovery strategy include:

- The Independent Science Panel established by State legislation (HB2496) to provide peer review of recovery efforts;
- The Interagency Review Team established by State legislation to ensure (among other tasks) that project funding is based on the best science;
- Technical Advisory Groups (TAGs) established for each Water Resource Inventory Area (WRIA) to identify limiting factors for salmon in each watershed;
- A proposal by the Northwest Chapter of the Society for Ecological Restoration to establish an independent science panel for the Puget Sound Chinook ESU;
- A study being launched by the Trust for Public Lands to undertake a GIS-based assessment of highest priority habitats for salmon recovery in the Puget Sound region;
- A study funded by various local companies (Port Blakely Tree Farms, Simpson Timber, and others) of limiting factors for salmon in the Puget Sound ESU;
- The NMFS recovery planning effort.

This proliferation of assessment activities reflects the importance of "getting the science right" but also presents significant costs and risks. Multiple scientific assessments will result in duplication of effort. Moreover, rather than resolving areas of scientific uncertainty, the many different initiatives will inevitably reach somewhat different conclusions and identify somewhat different priorities, posing the risk that recovery efforts will be slowed while the reasons for differences are explored, debated, and resolved.

There would be significant cost and efficiency benefits to be gained by a coordinated effort to: (a) identify limiting factors within each ESU, and (b) prioritize potential recovery actions in terms of their biological effectiveness in recovery, and (c) ultimately determine the population size and characteristics necessary for de-listing and the recovery actions that will be required to achieve those goals. Either NMFS or the State could take the lead in coordinating such ESU-focused assessments, building on the WRIA activities underway and the other scientific efforts listed above.

DESIGNING AN EFFECTIVE RECOVERY STRATEGY

Both the State and many local governments in the Northwest are developing salmon recovery plans in anticipation of, or response to, the Endangered Species Act listings. Within Washington state, legislation passed in 1998 established a Salmon Recovery Office and launched a series of watershed-based recovery planning activities. In January 1999, the Governor released a draft recovery strategy "Extinction is not an Option" laying out a series of actions to be taken to ensure salmon recovery. The three most urbanized counties, King, Snohomish, and Pierce Counties have coordinated their activities through the "Tri-County Process" and have submitted a recovery strategy to the National Marine Fisheries Service. And individual cities, such as Bellevue and the City of Seattle are also developing and negotiating recovery plans and HCPs with the National Marine Fisheries Service.

Here too, the lack of effective coordination of these planning activities poses significant risks for the design of effective recovery efforts. Neither NMFS nor the Fish and Wildlife Service, the two federal agencies responsible for determining whether the recovery plans meet the requirements of the ESA, are centrally engaged in the planning effort. Instead, influenced by their regulatory role and their interpretation of their legal obligations, the federal agencies have provided advice in the development of plans but, with the exception of a process to negotiate new forest regulations, have not directly shared responsibility for the development of those plans. A more effective approach would be for all levels of government to "sit at the same table" and jointly craft a recovery plan meeting the legal requirements of the ESA. (In many cases, such plans may well exceed the legal requirements due to the general public and political support for salmon recovery in the Northwest.)

Two examples from the Pacific Northwest of this type of coordination and engagement of various government agencies with shared responsibility for the resource are the Timber Fish and Wildlife (TFW) agreement in Washington state and the Forest Ecosystem Management Assessment Team (FEMAT) established in response to the listing of the Spotted Owl.

In the case of the TFW, federal agencies are one of six "stakeholders" in the negotiating process for setting timber management regulations in Washington State. Other stakeholders include the tribes, local governments, state agencies, private business, and environmental organizations. Although the most recent TFW negotiations failed in August 1998, when environmental groups decided not to continue with the negotiations, aspects of this model provide a much more promising arrangement for ensuring that all levels of government successfully develop a "joint" plan.

FEMAT is another institutional arrangement established to meet the unique needs of responding to the listing of an endangered species that crossed multiple institutional boundaries. Following President Clinton's April 2, 1993 Forest Conference, the President established the Forest Ecosystem Management Assessment Team to develop options for the management of Federal forest ecosystems. Each option was to provide habitat that would support stable populations of species associated with late-successional forests, including the northern spotted owl. On July 1, 1993, the President identified the FEMAT report's Option 9 as the preferred alternative for amending the Federal agencies' land management plans with respect to late-successional and old-growth forest habitat. This option was ultimately challenged in court but on December 21, 1994, Federal District Court Judge William L. Dwyer rejected a number of plaintiffs' challenges and issued an order to uphold the Forest Plan. According to Judge Dwyer, the Forest Plan ". . . marked the first time in several years that the owl-habitat forests will be managed by the responsible agencies under a plan found lawful by the courts. It will also mark the first time that the Forest Service and BLM have worked together to preserve ecosystems common to their jurisdictions."

The salmon listings differ somewhat from both the TFW and FEMAT experiences. Unlike FEMAT, the need for coordination in the case of the salmon listings extends well beyond federal lands and must involve states, tribes, local governments, and private landowners. Unlike TFW, the salmon issues extend to non-forest ecosystems. But what these models share, and what can likely be applied to the salmon recovery challenge, is the need to empower one collaborative body with the requirement of crafting a joint solution. This does not yet exist in the case of salmon recovery efforts. Instead, the coordination that does exist tends to be restricted largely to information exchange. For example, the Tri-County Executive Committee developed a set of early action proposals in the hopes that they would be considered sufficient by NMFS, but not in direct collaboration with NMFS. Similarly, NMFS, state legislators, and local government officials participate in a coordinating council chaired by

the Governor's Special Advisor for Natural Resources. However, in neither of these venues are the various parties collectively responsible for crafting solutions.

As the Tri-County process has moved forward, by some accounts the interaction with NMFS has increasingly become one of joint negotiation and collaborative planning. However, even if the various levels of government become better coordinated in the case of these three counties, the problem still remains that the process of "rolling up" the various recovery proposals and actions in other counties around Puget Sound into an overall strategy for the recovery of the Puget Sound Chinook ESU is not one of partnership among all levels of government.

The costs of proceeding without a more effective means of coordinating the development of a response strategy are likely to be high. Without a collectively "owned" plan, the likelihood for legal challenges is heightened, and the likelihood of success of such challenges is also increased since different institutions will take different positions on recovery needs. A proliferation of separate planning activities and separate negotiations with NMFS will diminish the ability to use science as the basis for recovery planning, since individual negotiations will be driven by the unique political aspects of each local or regional government. Multiple planning activities will tend to overwhelm the already stretched federal agencies charged with implementation of the ESA and may overtax the limited number of scientists who have expertise on these systems. And, there is a significant risk that a more fragmented approach to developing recovery plans will become bogged down in inter-institutional rivalries and proceed at a glacial pace. Such delay in the development of an effective plan will inevitably increase the ultimate cost of recovery and the likelihood of judicial intervention and decrease the potential for successful recovery.

A NEW INSTITUTIONAL ARRANGEMENT FOR SALMON RECOVERY

In light of the unique features of the listing of salmon in the Northwest and the challenges that it currently poses for the institutions responsible for recovery, more effective means of coordination within and among the responsible governments seem essential. We believe that this situation may demand a novel institutional arrangement.

A priority should be the establishment of a single negotiating process that involves state, tribal, local, and federal agencies in the joint development of both statewide and ESU-specific recovery plans. More specifically, we believe that as a pilot activity, a new mechanism for coordination among all levels of government should be established for the development and implementation of recovery planning efforts within the Puget Sound ESU. Such a process could be created by the joint appointment by Governor Locke and President Clinton of a special representative with authority to oversee the coordination of the scientific assessments of: (a) limiting factors, (b) recovery priorities, and (c) recovery targets and with the authority and responsibility for overseeing the negotiation of the ESU-specific recovery plans for the Puget Sound basin. Following the example of other state/federal collaborative models, such as the CALFED Bay-Delta program and the South Florida Ecosystem Restoration Program, the coordination would also likely involve the establishment of a Memorandum of Understanding among the various agencies. The special representative or "coordinating council" of agencies would not take on project responsibilities and would not undertake their own assessments or planning activities but would instead ensure that the activities being undertaken by the member agencies are effectively and strategically coordinated. And, this council would provide the venue for negotiation of recovery plans or the development of alternative plans for the final review and approval by policy-makers.

A number of alternative arrangements could be considered with various strengths and weaknesses. For example, the special representative could be appointed by the President and the Governors of Oregon, Washington, and California (and possibly a Tribal representative) to ensure effective coordination at a regional level (e.g., Pacific Northwest) or for the State of Washington rather than just the Puget Sound Chinook ESU. Whatever mechanism is established, a key to its success is likely to be the presence of a clear mandate from the State and Federal level so that the individual and institution are seen to be acting under the direct authority of the governor and President.

CONCLUSIONS

The challenge of recovering endangered salmonids in the Puget Sound Region is significant, but the willingness of individuals and institutions to take on this challenge is perhaps unique in the history of the application of the ESA. Given the number of different agencies and levels of government that must be involved in successful recovery of the fish, however, there is a very high likelihood that recovery efforts

could be slowed dramatically without the creation of an effective means of coordination across all levels of government. Already, we see a risk that the lack of effective coordination is leading to inefficiencies and redundancies. We suggest that a pilot effort be undertaken to appoint a special representative for the Puget Sound region and formalize an agreement among the relevant governments, agencies, and tribes to ensure that the responsible institutions develop and implement a single cohesive recovery plan.

Attachment.

STATEMENT OF THE WASHINGTON SALMON COLLABORATION, MARCH 15, 1999

The Washington Salmon Collaboration is an unusual group of Washington's environmental and business leaders whose goal is to assist in designing and implementing policies and plans developed for the recovery of Puget Sound Chinook salmon and the ecosystems on which it depends, in the event that it is listed as threatened under the Endangered Species Act. Over the past four months, the group has invited representatives of the State Salmon Recovery Office, National Marine Fisheries Service (NMFS), the Tri-County process, the Northwest Indian Fisheries Commission, and the City of Seattle to participate in some of its meetings as well as scientists from the University of Washington and the private sector. Members of the collaboration have also discussed the objectives of this effort with leaders in the Washington State Legislature.

We are seeking consensus because we believe that salmon recovery will contribute to the quality of life for all citizens in the Northwest. We seek to ensure that the recovery strategy developed for the Puget Sound Chinook is scientifically based, cost-efficient, and effective. Healthy salmon populations are reflective of an overall level of environmental health that will undergird the northwestern economy and contribute to our quality of life and that of our grandchildren. We thus encourage forthright efforts to address the challenge represented by the likely listing of this species. We believe that the only alternative—a reactive approach—will slow action, encourage litigation, add uncertainty, increase the costs, and ultimately diminish the ability of the people and institutions of our region to influence the restoration of Puget Sound Chinook populations.

We offer specific proposals for actions in this statement that represent a consensus among the participants listed below and that will contribute to a balanced strategy for recovering Puget Sound Chinook salmon. Many of these policies and actions have been proposed in the January 1999 "Draft Statewide Strategy to Recover Salmon," in existing and proposed legislation including HB2496, and in the Tri-County salmon recovery process. Thus, the following recommendations are intended in part to lend support to actions already underway, those being considered by state and local governments, and in part as new proposals. These recommendations are by no means exhaustive, yet we recognize that salmon recovery depends on a comprehensive approach. Our collaboration continues to discuss wide-ranging proposals and we plan to meet with many of the stakeholders and make additional suggestions and recommendations in the coming months.

In the recommendations that follow, references to "listed salmon populations" refer only to Puget Sound Chinook salmon and to other species or populations in the salmon family found in the same watersheds as the Puget Sound Chinook that are threatened or endangered under the Endangered Species Act. We believe that actions taken should treat populations proposed for listing, such as the Bull Trout, in the same manner as listed species during the period in which a final determination is being reached. We believe that a multispecies recovery strategy within this region will prove to be most scientifically justified, cost-efficient, and effective. Plans and actions developed for listed salmon populations should also take into account species under review for listing in the event that they too are proposed for listing. We recognize that many of the following recommendations may be appropriate for other regions of the state but we have restricted our own focus and that of these recommendations to the region of the Puget Sound Chinook Evolutionarily Significant Unit (ESU).

BASIC PRINCIPLES

As context for our specific proposals, it is worth noting five overarching recommendations of our group:

—The goal of recovery efforts should be to recover listed salmon populations to sustainable and harvestable levels. By this we mean that:

1. We must reach the point where Puget Sound Chinook salmon are no longer threatened with extinction;

2. Wild production and compatible artificial production should provide harvest opportunities and fulfill treaty obligations;
 3. Any harvest allowed should not jeopardize recovery of the listed populations and, to the extent possible, consistent with treaty obligations, should contribute to recovery goals.
- All of the 4-H's (Habitat, Harvest, Hatcheries, and Hydro) contributed to the decline of salmon in the region, and all must be considered as part of the solution. An effective balance of actions across these areas must be established that takes into account such factors as the scientific-basis, cost-efficiency and effectiveness of actions in each sector as well as cultural issues and treaty rights related to the role of salmon in the region.
 - A salmon recovery plan for the Puget Sound Chinook agreed to by all levels of government must be developed to achieve the recovery goal. This plan must be based on sound science and identify measurable objectives and the actions that will be needed to achieve those objectives.
 - We encourage the Governor to continue to expand and intensify his efforts to ensure effective coordination and collaboration within and among all levels of government. More specifically:
 1. Improved collaboration among federal, tribal, state, and local governments is essential to ensure that the design of Washington's recovery strategy is a collaborative product of all the responsible governments. The design of the recovery strategy should also find ways to meaningfully involve all other stakeholders, including businesses, non-governmental organizations, and individuals.
 2. Improved coordination is needed among state agencies, as well as among Federal Agencies, responsible for administering programs influencing recovery of salmon populations to ensure that all such programs and activities will support and enhance the state's recovery strategy;
 3. Coordination should be continued with governors in other states in the Pacific Northwest to discuss and share information, goals, and strategies regarding recovery of listed species throughout the region.
 - The recovery of Puget Sound Chinook can best be achieved through a phased process of developing and implementing a recovery strategy:
 1. In the first phase, early actions are needed to identify, avoid, and reverse harm to listed populations of salmon and to develop a scientifically based, cost-efficient and effective recovery strategy. The early actions should be based on sound science and prioritized to ensure that financial resources are invested in ways that provide the greatest benefit to the recovery of the species.
 2. In the second phase, based on a recovery strategy developed during Phase I, a full set of actions capable of recovering populations would be developed and implemented over time. To ensure the success of Phase II, we believe that it is of the utmost importance to set quantifiable and measurable recovery objectives. A sustained commitment to significant action will be needed to achieve these objectives. Actions may need to be modified during Phase II in response to experience and new information, but we can only expect the necessary commitment to significant action if the objectives being pursued are clear. Such an approach will also provide an important element of predictability for business, local government, and citizens in the region.

EARLY ACTIONS

In our most recent discussions, the Washington Salmon Collaboration has sought to identify priorities for "early actions" that must be taken to give credibility to Phase I. A strong set of early actions, undertaken in the context of a phased recovery approach, is needed to meet the Endangered Species Act requirement to provide for the conservation of the species and to give time for the development of a scientifically based, cost-efficient, and effective recovery strategy closely tailored to the needs of the state and local communities. We recognize that related restoration activities have already begun throughout the state through legislation enacted during the last legislative session including HB2496 and through many ongoing community-based efforts including the Water Resource Inventory Area (WRIA) processes, and that these activities will contribute to Phase I. Early actions should also be linked to a statewide program of public education that helps people understand the need for these actions and provides scientifically based information to the public about the factors currently threatening salmon stocks and the importance of salmon recovery to the state's future.

As indicated in the draft Statewide Strategy to Recover Salmon, a comprehensive strategy for recovery will involve hundreds of actions, many of which must begin as soon as possible. Without diminishing the need for this comprehensive set of actions, our group urges the Governor and other policymakers to identify and put into effect as soon as practicable a short list of early actions that demonstrate a commitment to reversing the decline of the Puget Sound Chinook salmon and that set the stage for further development and implementation of an effective recovery strategy. Specifically, we urge the state to implement the following actions:

—Ensure that State Actions help to Conserve, Protect, and Enhance Salmon:

1. The Governor should quickly issue an executive order requiring all agencies of state government to evaluate how their programs, activities, and actions may be changed to avoid harm to listed salmon populations and to fulfill their principal missions in a way that contributes as much as possible to salmon recovery. Each agency should be required to report within six months how its programs will or should be changed to reflect the executive order's mandate.

Whether an agency's principal mission is to protect the environment or to promote economic development, it carries out specific programs that can more effectively protect and restore salmon and other programs whose seemingly unrelated goals can be achieved while helping, and certainly not harming, salmon recovery. In carrying out this mandate, and without seeking to change their principal mission, agencies should examine their full range of policies and practices including those related to enforcement, monitoring and evaluation, employee training, community awareness and public communications, employee rewards and incentives, and coordination with other state agencies, and should develop strategies to strengthen, change, or eliminate policies or practices as appropriate.

2. Take the necessary steps to fully and effectively enforce existing laws affecting listed salmon populations.

This will require that the state fully and effectively implement existing state permitting, licensing and enforcement activities related to factors influencing salmon recovery (e.g., hydraulic permits, shoreline permits, water rights, commercial and recreational licensing, catch limits, water quality, etc.) to prevent further detrimental impacts to salmon populations and to reduce the extensive backlog of permit applications that are costly and burdensome to the private sector. By all accounts, the state of Washington has many existing laws pertaining to water quality and quantity, catch limits, shoreline development, and critical habitat protection that are not being adequately enforced that could benefit salmon if enforcement were improved. We believe that it is essential that resources are provided to effectively enforce these existing regulations and that highest priority should be given to regions with listed salmon populations.

3. Carefully document and review the substantial salmon enhancement and habitat restoration work completed and underway throughout the region and use the knowledge gained to build the habitat restoration and enhancement component of the state's strategy.

—Habitat.—Secure the Base through Actions that Protect and Restore the Ecosystem on which Puget Sound Chinook salmon depend:

1. Support the preparation of an independent peer-reviewed science assessment, with appropriate involvement of governmental agencies, to map and prioritize areas of importance to the conservation of listed salmon populations within the Puget Sound region.

Even though the development of a full recovery strategy may take several years, it is important that funds available today for habitat protection be spent as efficiently as possible-obtaining the greatest impact per dollar spent. We are informed that within a matter of 3-6 months, leading scientists, with appropriate state endorsement, could assemble existing data and studies enabling a "rough-cut" determination of the locations where habitat protection or recovery would contribute most to stabilizing and ultimately recovering listed salmon populations in this region. Local watershed planning groups should contribute to the analysis and be part of the review process.

2. Ensure that funds for salmon habitat protection and restoration within the Puget Sound region are allocated based on the best available science and through a process involving both the public and private sector. We endorse the "Puget Sound Foundation" as originally proposed by Puget Sound Waterways as a mechanism to achieve this goal, and encourage the Governor and legislature to adopt this proposal.

State and Federal funds for habitat should be distributed to local communities and other institutions engaged in habitat conservation and restoration in a competitive manner that stimulates collaboration among public and private organizations as well as with the general public. In addition to assuring a high level of visibility on process and specific projects with the public, we believe it will be important to stimulate significant private sector contributions. Political expediency should not dictate the allocation of funds for salmon recovery. Whatever mechanism is used for allocation of such funds should meet the following criteria:

(a) Science-based. The majority of funds available for habitat protection and restoration should be allocated to areas that will contribute most to recovery as determined by the science.

(b) Open to public scrutiny. The public should have access to the information on which funding decisions are made and should be kept informed of the impact of funds allocated for habitat conservation.

(c) Adaptive. Projects should incorporate explicit mechanisms for monitoring results and be open to adaptation as needed to ensure results.

(d) Responsive to local demand. Insofar as possible, funds should be allocated for projects with clear local support, particularly as identified in the Water Resource Inventory Area (WRIA) planning processes.

The "Puget Sound Foundation" meets these criteria and could contribute to salmon recovery in the region, although it would be only one of many needed actions (including those identified in this document). In addition, such a foundation could serve as a vehicle through which private entities can provide funding for specific restoration activities through a project allocation process guided by science and cost-effectiveness. A well-designed and managed allocation process, with a strong foundation in science, will be more likely to attract funding from private sources, which will be critical to many important restoration projects in the Puget Sound region.

3. In watersheds containing listed salmon populations, the state should not authorize new water withdrawals that would reduce flows below levels set by instream flow rules, and, in rivers without instream flow rules, should not authorize new water withdrawals that reduce flows until instream flow rules are set.

Clearly, water is critical for the maintenance and restoration of Puget Sound Chinook populations. Instream flow rules are set based on the biological needs of the species and the hydrological characteristics of the stream to ensure suitable flows for fish habitat. An instream flow rule does not threaten pre-existing water rights, even if those pre-existing rights have the effect of reducing flows below the level set under the instream flow rule. Where flows should be enhanced to provide suitable habitat, we encourage policy makers to explore the use of water marketing arrangements to ensure that sufficient water remains in the river. Not all rivers in the Puget Sound region have instream flow rules, although even without these rules the state must review any applications for water use to ensure that it does not harm fish and wildlife populations. As is already occurring in a number of Puget Sound watersheds, we believe that these flow rules should be set, with highest priority given to watersheds containing listed species. New water withdrawals should be allowed only if instream flow rules are set or, in exceptional circumstances, if the state reviews the application to ensure that the withdrawal does not harm fish and wildlife populations. Finally, both to support the establishment of new rules and to ensure that existing rules can be revised and updated as needed, the state should ensure that adequate funding and staffing exists to support WRIA instream flow planning processes.

—Hydro.—Develop a Strategy for Dams:

1. Coordinate the development of a strategy to address the impacts of dams on listed salmon populations in the Puget Sound region.

Dams, constructed for flood control, municipal water supply, hydropower and other uses, exist on many rivers in the Puget Sound region. The state should:

- (a) Identify all existing and proposed dams in the Puget Sound basin;
- (b) For each dam, identify ownership, whether it is licensed by the Federal Energy Regulatory Commission, is a federally authorized facility, is operating only under the jurisdiction of state law, is decommissioned or otherwise not currently serving the purpose for which it was built; and,

(c) With the involvement of federal agencies and Native American Tribes and other key constituency groups, work with dam owners to identify potential changes at each existing or proposed dam which the best available science indicates will help conserve and restore salmon populations.

Using this information, develop a strategy for actions concerning dams that the state and other governments could take to help conserve and restore salmon populations in concert with other economic and public safety goals.

—Harvest.—Explore Opportunities for Harvest Restrictions to Contribute to Recovery:

1. Apply the same scientific and economic discipline to the exploration of the harvest issue as is being applied to other components of recovery, recognizing that harvest levels must take into account tribal treaty obligations as well as the central cultural and economic role of salmon in the Tribes.

Two significant steps in this direction would be:

(a) Set escapement levels for Puget Sound Chinook to ensure that targets are based on the best available science and geared toward recovery of a threatened species, not maximum sustainable yield.

(b) Make sure that stakeholders know how harvest is allocated. The process for making decisions on overall harvest levels and on allocations of that harvest should be clearly explained to various stakeholders and those decisions open to public view. Decisions should be based on timely input of scientific data.

2. Take a leadership role in encouraging the Federal Government to take specific actions to resolve the U.S.-Canada Salmon Treaty dispute, in concert with our congressional delegation and other West Coast states and tribes.

An essential element of the solution of the U.S.-Canada Salmon Treaty dispute must be that the state of Washington “get its own house in order” and demonstrate sound management, conservation, and actions to recover listed salmon. That said, the long-term effectiveness of salmon recovery actions in Washington State would be undermined without an international arrangement facilitating recovery of salmon populations. The current impasse over implementation of the U.S.-Canada Salmon Treaty is unlikely to be broken without high level intervention from the central governments of both countries. We appreciate the recent steps that the Governor has taken to encourage this type of attention to the issue. We believe it is essential that the parties demonstrate movement toward a solution in the very near future to bolster the early actions that we believe the state and local governments should take. The Washington Salmon Collaboration strongly encourages this high level intervention with the goal of establishing a West Coast management strategy that:

(a) Relies on an independent science body to establish catch limits needed to facilitate recovery of all west coast salmon stocks;

(b) Ensures that management systems are in place to enforce the catch limit or provide for adaptive change in catch limits in response to in-season experiences; and,

(c) Develops a fish allocation system among the various claimants to the fish that is consistent with the scientifically established catch limits and that works.

—Hatcheries.—Re-think the Role of Hatcheries:

1. Coordinate the development of a comprehensive strategy for hatcheries in the Puget Sound region that will ensure their contribution to the recovery of Puget Sound Chinook, based on the best available science and recognizing treaty obligations and the co-management responsibilities of the tribes.

We believe that a sound strategy for using hatcheries to support recovery of listed salmon populations is of utmost importance to meet environmental, economic, and legal requirements and we do not see the level of coordination and planning underway today that gives us confidence that this strategy is being developed. We are disappointed that the state has not completed the “Coho Assessment” with the Northwest Indian Fisheries Commission, which could provide a sound basis for a more strategic approach to the role of hatcheries.

—Foster Voluntary Actions:

1. Encourage, coordinate, and provide incentives for voluntary actions by business, citizen's groups, and individuals to help recovery of listed salmon populations.

Voluntary actions to protect and restore Puget Sound Chinook habitat could be a significant element of the "early action" response of the region. At the same time, incentives are needed for citizens and business to be involved in efforts that are more than just scattered volunteer activities and instead clearly will contribute to recovery. Those incentives must be designed to help ensure that net environmental gains are achieved through the voluntary action. Building on the effort to promote and coordinate volunteer activities already taking place under the WRIA planning activities:

(a) State and local governments and non-governmental organizations should guide individuals and businesses interested in undertaking voluntary action toward those actions that will best contribute to salmon recovery efforts and should seek to provide technical and financial support for those activities that clearly can be a strategic component of recovery;

(b) State and local governments should undertake outreach to communities, schools, business coalitions, and individual businesses explaining the types of actions that could help salmon recovery, focusing particular emphasis on areas of high priority habitats as identified above;

(c) The state should establish a registry of "beyond compliance" actions taken by businesses and voluntary actions taken by communities and schools and give public credit such as regional or state-wide awards for those actions.

As we have already stated, this list of recommendations is what we have agreed on to date, and is not intended to represent all that needs to be done. These recommendations can contribute to salmon recovery and are likely to be supported by many in the Puget Sound region. Our group plans to continue to explore the merits of other proposed recommendations over the coming weeks and months. Ideas that we will consider include proposals related to the central role of watershed councils, development in floodplains, the issuance of variances to the Shoreline Management Act and other laws, issues related to the metering of water withdrawals and instream flows, and the potential for further restrictions on sport or commercial harvest to contribute to recovery.

Finally, we urge the Governor to continue to expand his personal role in educating the public. His vision and leadership will prove pivotal in determining whether an appropriate state-wide response supported by our citizens can be implemented. The actions we take will touch every individual and community in this state. The Governor is in a unique position to help people understand that we must all play a constructive role in developing and implementing a successful recovery strategy.

PRINCIPALS

Mr. Paul Brainerd, Chairman, The Brainerd Foundation
 Mr. Glenn C. Butler, Refinery Manager, ARCO Products Company
 Ms. Barbara Cairns, Executive Director, Long Live the Kings
 Mr. Shawn Cantrell, Chairman of the Board, Save our Wild Salmon
 Mr. Aaron Ostrom, Executive Director, 1000 Friends of Washington
 Ms. Joan Crooks, Executive Director, Washington Environmental Council
 Ms. Kathy Fletcher, Executive Director, People for Puget Sound
 Mr. John Hayden, Vice President, Boeing Company
 Mr. Robert Helsell, Chairman and CEO, Wilder Construction Company
 Mr. Jim Kramer, Director, Puget Sound Waterways
 Mr. C. Scott McClellan, Vice President, U.S. West Communications Inc.
 Ms. Marie Mentor, Washington State Director, Trust for Public Lands
 Mr. Colin Moseley, Chairman, Simpson Investment Company
 Ms. Katherine Ransel, Northwest Regional Director, American Rivers
 Mr. Richard R. Sonstelie, Chairman of the Board, Puget Sound Energy, Inc.
 Mr. Douglas W. Walker, Chief Executive Officer, WRQ, Inc.

OTHER PARTICIPANTS AND REPRESENTATIVES OF THE SPONSORS

Mr. Emory Bundy, Director, The Bullitt Foundation
 Mr. Phil Bussey, President, Washington Roundtable
 Dr. John Ehrmann, President and Senior Partner, Meridian Institute
 Ms. Maureen S. Frisch, Vice President, Public Affairs, Simpson Investment Company

Mr. Denis Hayes, President, The Bullitt Foundation
 Mr. B. Gerald Johnson, Convenor/Facilitator, Puget Sound Waterways
 Mr. Terry Oxley, Director, Government & Community Relations Puget Sound Energy, Inc.
 Dr. Walter V. Reid, Coordinator, Washington Salmon Collaboration
 Mr. James Youngren, Chairman of the Board, Long Live the Kings

STATEMENT OF DOUG SUTHERLAND, COUNTY EXECUTIVE, PIERCE COUNTY, WA

Senator GORTON. Thank you. I should announce for people here, King County executive, Ron Sims, announced that he will not be here until about 1:00. He will be here, and he will certainly have an opportunity to testify.

But we will here now from the Pierce County executive Doug Sutherland.

Mr. SUTHERLAND. Senator Gorton, Senator Murray and my Congressman Dicks, I'm delighted to be here, and really I appreciate the opportunity to speak on this issue that has such incredible importance for our entire region.

When the survival of fish became part of the mainstream discussions, it quickly became clear that if we're really going to recover this species, we couldn't retreat behind the statutory obligations of the Endangered Species Act. Recovery of the species depends on each individual, each community organization, each business and each government agency doing a part of the larger effort.

In the area of Pierce, King, and Snohomish counties, my colleagues, County Executive Bob Drewel from Snohomish and Ron Sims from King and leaders of the local governments, tribes, businesses and the environmental community, we have formed a voluntary coalition that many refer to as the Tri-County.

We've been working very hard to coordinate the converging environmental initiatives, such as the Clean Water Act and Endangered Species Act.

We have been working to coordinate all of these efforts. New working relationships have been formed because we recognize that our success will take the combined efforts of many individuals, agencies and organizations.

Together, we are working to identify projects that are key to the salmon's recovery. Consolidating resources from multiple sources have proven to be the most effective method of getting these projects completed.

We are trying to look at our own operations and to figure out how we can coordinate the efforts between county agencies, between county, Federal, State, other jurisdictions, and other organizations.

For instance, the Pierce County Public Works Department has modified their scope of work for storm water and flooding planning so that it is now their responsibility to look at the watershed sub-basins from both a flooding and a fish perspective.

The county continues to provide funding for conservation districts so that they can work with the local farmers to make their operation more environmentally fish-recognized friendly.

But seed monies from the county, the conservation district, also plays a key role in the voluntary efforts, such as the Stream Team efforts and the fish habitat restoration projects.

Combined efforts of the County, the Puget Sound Water Quality Authority, Washington State University and private engineering firms has resulted in the education of dozens of people on low-impact development options.

During this, the first year of the listing of the bull trout and the chinook and joint efforts such as those and these, have been successful in getting salmon recovery on track in Pierce County.

While there's been a significant momentum created around the issue, some of the most challenging situations have come from what we perceive as the lack of vision from listing agencies. And I strongly believe that salmon have a much better chance of recovering to healthy populations if we all do more than just our Endangered Species Act mandated obligation of "no take."

But if the listing agencies don't support that philosophy by creating a working relationship and working out of their comfort zone, I'm afraid it will be very difficult for us to keep up and maintain our momentum.

Your support of salmon recovery is very much appreciated, and any help that you can provide by nudging the listing agencies to believe that they need to be more receptive to incremental solutions, that help would be more welcomed.

Senator, you recall that when we first created the Tri-County effort, and we came back and spoke to you and to Congressman Dicks and to Senator Murray and suggested that insertion of monies in the fiscal year 1999 budget would be most helpful. And through your skill and ability you, indeed, did just exactly that. Those funds arrived in the State in December of 1998 and became available to us at the local level some time about a year ago.

Those monies, of which Pierce County received \$1.6 million, were used in the acquisition of lands adjacent to various parts of the Tualip River. What we did is we sat down is we sat down with the Port of Tacoma and the Tualip Tribe, along with my colleagues in the county, and we said, OK, if we're going to take this money, one of the best things to do is to require riparian areas adjacent to the river, let the levies move them back away from the river, let the river run and create a much better habitat than currently is there.

So together we sat down and identified pieces of property along the river that we could acquire. And then we went out and spent time talking to the owners of those properties to see if there was any interest. Once we determined the interest, then we went through the appraisal process, the title search, and then began the negotiations for purchase.

Now we also did one other thing, and that is in some areas we were able to negotiate easements in which the cost was significantly less, but yet we could still be able to gain the benefits of those riparian areas adjacent the Tualip River.

I have here some flyover photos of the areas in which we were able to expend those funds. And I certainly appreciate it, and so will those fish who will be using this improved habitat as a result of the acquisition of these riparian areas.

PREPARED STATEMENT

And with that, Senators and Congressmen, thank you so much for the opportunity to come and be part of these continued edu-

cation of the people of Washington State on the importance of these listed fish.

Senator GORTON. Thank you, Doug.
[The statement follows:]

PREPARED STATEMENT OF DOUG SUTHERLAND

I appreciate this opportunity to speak on an issue that has risen in importance for the entire region. That is the issue of the survival of the Pacific Northwest salmon.

When the survival of the fish became part of mainstream discussions, it quickly became clear that if we are really going to recover the species, we couldn't retreat behind the statutory obligations of the Endangered Species Act (ESA). Recovery of the species depends on each individual, each community organization, each business, and each government agency doing a part of the larger effort.

In the area of Pierce, King, and Snohomish counties, my colleges County Executives Bob Drewel and Ron Sims, and leaders of local governments, Tribes, business, and the environmental community have formed a voluntary coalition known as Tri-County. We have been working very hard to coordinate converging environmental initiatives such as the Clean Water Act and the Endangered Species Act. We have been working to coordinate efforts. New working relationships have been formed because we recognize success will take the combined effort of many individuals, agencies, and organizations.

Together, we are working to identify projects that are key to the salmon's recovery. Consolidating resources from multiple sources has proven to be the most effective method of getting the projects completed. We are trying to look at our own operations and figure out how we can coordinate the efforts between County agencies, and between the County, Federal, State and other organizations.

For instance, in Pierce County the Public Works Department has modified their scope of work for stormwater/flooding planning so that it now is looking at the watershed sub-basins from both a flooding and fish perspective. The County continues to provide funding for the Conservation District so they can work with local farmers to make their operations more environmentally friendly. With seed monies from the County, the Conservation District also plays a key role in volunteer efforts such as the Stream Team efforts and fish habitat restoration projects. Combined efforts of the County, the Puget Sound Water Quality Authority, Washington State University, and private engineering firms has resulted in the education of dozens of people on low impact development options.

During this, the first year of the listing of the bulltrout and the chinook, joint efforts such as these have been successful in getting salmon recovery on track. While there has been a significant momentum created around this topic, some of the most challenging situations have come from what we perceive as a lack of vision from the listing agencies. I strongly believe the salmon have a much better chance of recovering to healthy populations if we all do more than our ESA mandated obligation of "no take." But if the listing agencies don't support that philosophy by being creative and working out of their comfort zone, I am afraid it will be difficult to keep up the momentum.

Your support of salmon recovery is very much appreciated. Any help you can provide by letting the listing agencies know you too believe they need to be more receptive to incremental solutions, is welcomed.

STATEMENT OF JERRY E. CLARK, DEPUTY DIRECTOR FOR REGIONAL PROGRAMS, NATIONAL FISH AND WILDLIFE FOUNDATION

Senator GORTON. We're pleased and honored to have Jerry Clark, the Director of Fisheries for the National Fish and Wildlife Foundation from Washington, DC, here to talk to us about his organization's participation.

Mr. CLARK. Mr. Chairman, Senator Murray, Congressman Dicks, my name is Jerry Clark. I'm representing the National Fish and Wildlife Foundation today. I appreciate the opportunity to be here and make some remarks. I've submitted some written testimony.

Senator GORTON. That will be included in the record.

Mr. CLARK. I won't read that; I'll just make a few points today.

I especially appreciate your effort, Senator Gorton and members of this board, to invite an organization like the National Fish and Wildlife Foundation to participate in the State of Washington's efforts. As you know, and maybe others don't, the National Fish and Wildlife Foundation is a private nonprofit organization, but it was created by Congress. It makes us somewhat unique.

Another aspect of our uniqueness I think is why we were created. Almost by definition from day one, the reason we were created was to build partnerships to work on natural resource conservation issues.

We were created in 1984 at a time where there weren't very many of those. In fact, at that point in time, this country was sort of in the midst of the Clean Water Act, the Clean Air Act and the Endangered Species Act, and there were people asking the question, does it make sense to try something else? And at that time I think we were an experiment. I think now people understand the importance of partnerships, and we are one of the traditions in that.

This year, I especially want to thank you, Senator Gorton, for asking us to the table. You asked us to manage about \$3.75 million for the State of Washington. To date we have committed about two-thirds of that throughout the State, both in the Puget Sound area, along the Columbia and in the Okanogan County.

We funded Planet CPR, a program that you just talked about earlier, for their Grate Mate program. We funded the Tri-State Steelheaders to work both in stream and riparian zone projects that they're working on. We funded both the Mid Puget Sound Enhancement Group and the Hood Canal Salmon Enhancement Group, primarily to do culvert replacements with both of those groups.

We funded the Northwest Chinook Recovery folks to reconnect an historic slough to a river. And I want to mention that particular because that project is being done all on private lands. And one of the things that we think about partnerships, especially, is that if we don't create the habitat for salmon to be restored, and we don't get private landowners involved in restoration, we probably don't have much of a chance.

And the best way to do that is to build the kinds of partnerships that we've been talking about here today. Because what we have found over the many years that we've been investing salmon—and to date our investment salmon is about \$35 million in the Pacific Northwest for projects of the type that we're talking about today—that once you move into a watershed, and you can get a few individuals, a few private landowners, involved in successful projects where something actually happens, nobody gets burned, there's no lobbying, there's no litigation, people then join that bandwagon, and you get more done for one small investment in a watershed than almost any other investment you can do, if you can create a successful partnership amongst local folks especially involving private lands.

We have about \$1.6 million remaining of the funds uncommitted. To date we've been asking people to send us in their applications as they see the need. We're asking now, however, that we want the

applications in by June 1. We want to try to get all the money spent this year, so we've made that change.

I'll make a little comment. You can find the application materials and everything you need to contact the foundation on our website, which is www.nfwf.org, and it includes the application. You can download the application, fill it out and send it into us.

We've enjoyed participating in this process over the last year very much. If you want us to do it again, we'd be very happy to do that. We've made some changes at the foundation, not the least of which is we're opening a regional office.

PREPARED STATEMENT

I'd like to take just 10 seconds, if I could, to introduce Christina Wolniakowski, who is the new regional director for the National Fish and Wildlife Foundation. It gives us a face in the region that the folks in this audience who are thinking about asking us for grants and want to talk to us can talk to here. You don't have to come back to Washington, DC to talk to the National Fish and Wildlife Foundation.

Senator GORTON. Thank you.
[The statement follows:]

PREPARED STATEMENT OF JERRY E. CLARK

Mr. Chairman and Members of the Subcommittee: I appreciate the opportunity to submit my testimony for the record regarding the subcommittee's investment in Pacific Salmon Recovery. I especially want to thank the members of Congress who are with us today, as they have played the critical role in providing the funds that are now directed to the most important efforts for salmon restoration, those that pay for actual restoration. It is a complex task to restore Pacific salmon, but in the final analysis, none of the expenditures make any difference if the habitat in our streams will not support the various life stages of salmon, and if the owners of that habitat are not committed to the survival of salmon. In our experience, that commitment by Washington's landowners is there, and the funds provided by this Committee are critical to build the partnerships, reduce the conflict and restore salmon runs. Congress understands this need. They have provided the funds we all need to build those partnerships at the local level that are necessary if we are going to restore salmon.

I work for the National Fish and Wildlife Foundation, a private, non-profit, 501(c)(3) tax-exempt organization, established by Congress in 1984 to benefit the conservation of fish, wildlife, and plants, and the habitat on which they depend. Its goals are conservation education, habitat protection and restoration, and natural resource management. The Foundation meets these goals by helping to create and fund partnerships between the public and private sectors and by strategically investing in conservation projects. The Foundation does not support lobbying, political advocacy, or litigation, nor allow any of our Federal or the private matching funds used in our grants to be used for those purposes.

The Foundation awards challenge grants to on-the-ground conservation projects. The term "challenge grant" indicates that the funds appropriated to the Foundation are required by our Federal charter to be matched with additional non-Federal funding. Our grants multiply the Federal investments in conservation and enable grantees to use the Foundation's funds to involve other partners of their projects. Last year alone, the Foundation supported 585 projects, committing almost \$19 million in Federal funds. Those Federal funds were matched with \$50 million in non-Federal funds, for a total investment of almost \$70 million for on-the-ground projects. A return to the Federal Government of almost 3.5 to 1.

This year, this subcommittee has asked us to participate in the restoration of Pacific salmon in the State of Washington. This was a logical choice because the Foundation has already invested almost \$11 million in Federal funds for more than 200 projects for the restoration of salmon throughout its range in the West. This year, the subcommittee has asked us to manage \$3,842,300. To date, we have committed over \$2 million of those funds for several projects from the Puget Sound area through the Columbia Basin to central Washington. These projects demonstrate sev-

eral important elements. First, they are all cooperative efforts that do not include any litigation, there is no lobbying, there are lots of volunteers and they get to the root problems facing salmon. Most important of all however, in the long run these projects are locally driven and locally owned.

These projects are getting done because people at the local level see a need and are organizing within their communities to solve a problem. We are proud to be trusted by the people of Washington to help facilitate these efforts. In the Methow watershed (Okanagen County Water Resources Department), the community has assembled a set of projects based on a watershed analysis that get the to the critical need of salmon, the quantity and quality of water. In the Walla Walla area, we have funded the Tri-State Steelheaders to enhance both instream and riparian habitats on the Walla Walla River and Mill Creek. In the Puget Sound, we are supporting the Mid Puget Sound Enhancement Group and the Hood Canal Salmon Enhancement Group to open historic salmon habitats by replacing culverts that currently block fish passage. Also in the Puget Sound area we have funded Planet CPR to improve water quality throughout the Basin. We are also funding Northwest Chinook Recovery to reconnect the Groeneveld Slough with the Skykomish River to open up several miles of critical habitat. This project is typical of the willingness of private landowners to work in partnership with others to restore salmon. These kinds of projects have a long history of success, not only for the project in question, but as soon as one landowner becomes involved in a successful project, the story spreads, and soon landowners throughout the watershed are participating in similar projects. This is just one of the reasons that funding local, on-the-ground restoration projects is so critical.

We will continue to fund projects that are scientifically sound and community driven throughout the salmon's range in Washington, and we are looking forward to reviewing additional applications for the remaining \$1.6 million. We have had an open request for proposals, but we are now asking everyone to get us their applications for the remaining funds before June 1. Our work to restore Pacific salmon in the State of Washington will not end there, however. We will continue to fund salmon restoration in the years ahead. If it is possible for us to continue to receive funds specifically for Washington, we would relish that opportunity. We are committed to quickly dispersing and managing those funds for on-the-ground local partnerships.

Thank you for the opportunity to speak with you today.

STATEMENT OF RON SIMS, COUNTY EXECUTIVE, KING COUNTY, WA

Senator GORTON. We are joined now by the King County executive Ron Sims, and we welcome your comments, Ron.

Mr. SIMS. Thank you, Senator Gorton. It's good seeing you, Senator Murray, Congressman Dicks.

Mr. Chairman, I am the King County executive of King County, WA. Thank you for this opportunity to testify on our recent progress in bringing the salmon back to Puget Sound.

It's hard to believe that just about a year ago, on April 7, 1999, that your committee held a hearing here in Seattle to address salmon recovery. And at that time, less than a month after the National Marine Fisheries Service had formally listed chinook salmon under the Endangered Species Act, our collective response to the ESA listing was just getting started.

Local governments, tribes, and environmental and business interests were interested in working together through the Tri-County effort and other partnerships, but we were uncertain about what to do first.

The same uncertainty reigned in Olympia, as the challenge of establishing a clear State and Federal direction led to suggestions that a "salmon czar" was needed to preside over the salmon plan. Money was scarce for plans and projects, and there was already concern about money being waste on inefficient and ineffective projects.

I'm pleased to report that we've made great progress on these issues in the last year. Our strategy for salmon recovery among

Tri-County governments and interest groups has evolved into specific recovery proposals that we are actively negotiating with the National Marine Fisheries Service and U.S. Fish and Wildlife Service.

The Tri-County proposal will be an ambitious program of higher standards and new development activities, funding of habitat restoration work and new maintenance practices, and is being looked at as a model for locally-based salmon recovery throughout the Puget Sound region.

Thanks to the support of Snohomish Executive Bob Drewel and Pierce County Executive Doug Sutherland, our many Tri-County partners, Will Stelle and his staff at National Marine Fisheries Service, and Gerry Jackson and staff at U.S. Fish and Wildlife, we are moving ahead.

We've also seen great progress at the State level. And thanks to the leadership of Governor Locke and Bill Ruckelshaus, an historic agreement to protect salmon habitat on forest lands has been completed, another to address habitat on farmlands is being developed, and the State has a new scientifically driven process for awarding funds to habitat projects and programs.

The new State funding for allocation salmon funding through the Salmon Recovery Funding Board has been fueled over the last year by major funding commitments by the State Legislature and the U.S. Congress. And thanks to the Governor, and to you, Senator Gorton and Senator Murray and Congressman Dicks, and the entire delegation of Washington State, more than \$30 million is available this year for the most effective habitat projects in salmon-bearing watersheds throughout Washington State.

I am pleased to report that Federal funding has been put to excellent use in King County. Funding has allowed us to maintain a strong commitment to continuing the Tri-County alliance, supporting locally-based salmon strategies in our watersheds and keeping the public involved in salmon recovery.

Federal funding is also contributing to critical protection and restoration work on our salmon-bearing rivers, including the purchase of more than 270 acres of high quality salmon habitat along the Cedar and the Snoqualmi Rivers.

Senator Gorton, our Tri-County partners in salmon recovery and I do need your help to continue this progress. Our ability to negotiate a workable agreement with the Federal services depends on their ability to follow through on commitments to scientific research, development of reasonable recovery goals and participation in the development of our salmon recovery strategy.

I urge you and other members of our delegation to provide sufficient funding to National Marine Fisheries Service and U.S. Fish and Wildlife to meet these commitments.

We also hope to have your continued support for Federal funding for habitat projects. Habitat protection and restoration is a vital part of salmon recovery, and King County, our Tri-County partners and the State have demonstrated a strong commitment to funding habitat work. Your efforts to secure more than \$40 million in Federal funding in fiscal year 1999 and fiscal year 2000 for salmon habitat improvements in Washington State have been a tremen-

dous boost, and we hope we can continue to count on your support for that habitat funding.

In looking ahead in fiscal year 2001, we appreciate your sponsorship of Senate bill 2228 to create a new Corps of Engineers habitat restoration program for Puget Sound. We are very excited about this new partnership and are ready to step up as local sponsors of this program.

We also hope you will support \$25 million in additional funding in the year 2001 for to the Salmon Recovery Funding Board through the Commerce budget. The board is doing an excellent job at ensuring that Federal and State funds are spent wisely.

PREPARED STATEMENT

And I want to thank you personally for your efforts and the many people in this room. Salmon recovery has been an enormous and daunting task. I can hope that you'll make this an annual visit so that we can continue to report to you on the efforts to recover salmon in this region. Thank you very much.

[The statement follows:]

PREPARED STATEMENT OF RON SIMS

Mr. Chairman and Members of the Subcommittee: My name is Ron Sims. I am the County Executive for King County, Washington. Thank you for the opportunity to testify on recent progress towards recovering Puget Sound salmon populations.

It's hard to believe that it was just a year ago on April 7, 1999 that your committee held a hearing here in Seattle to address salmon recovery. At that time, less than a month after the National Marine Fisheries Service formally listed chinook salmon under the Endangered Species Act, our collective response to the ESA listing was just getting started. Local government, tribes, and environmental and business interests were interested in working together through the Tri-County effort and other partnerships, but we were uncertain about what to do first. The same uncertainty reigned in Olympia, as the challenge of establishing a clear State and Federal direction led to suggestions that a "salmon czar" was needed to preside over the salmon plan. Money was scarce for plans and projects, and there was already concern about money being wasted on inefficient or ineffective projects.

I am pleased to report that we've made great progress on these issues in the last year. Our strategy for salmon recovery among Tri-County governments and interest groups has evolved into a specific recovery proposal that we are actively negotiating with the National Marine Fisheries Service and U.S. Fish and Wildlife Service. The Tri-County Proposal will be an ambitious program of higher standards on new development activities, funding of habitat restoration work, and new maintenance practices, and is being looked at as a model for locally-based salmon recovery throughout the Puget Sound region. Thanks to the support of Snohomish County Executive Bob Drewel and Pierce County Executive Doug Sutherland, our many Tri-County partners, Will Stelle and his staff at NMFS, and Gerry Jackson and staff at USFWS, we are moving ahead.

I have also seen great progress at the State level. Thanks to the leadership of Governor Locke and Bill Ruckelshaus, an historic agreement to protect salmon habitat on forest lands has been completed, another to address habitat on farmlands is being developed, and the State has a new, scientifically driven process for awarding funds to habitat projects and programs.

The new State process for allocating salmon funding through the Salmon Recovery Funding Board has been fueled over the last year by major funding commitments by the State Legislature and the U.S. Congress. Thanks to the Governor and to Senator Gorton, Representative Dicks, and the entire delegation in Congress, more than \$30 million is available this year for the most effective habitat projects in salmon-bearing watersheds throughout Washington State.

Senator Gorton, my Tri-County partners in salmon recovery and I need your help to continue this progress. Our ability to negotiate a workable agreement with the Federal services depends on their ability to follow through on commitments to scientific research, development of reasonable recovery goals, and participation in de-

velopment of our salmon recovery strategy. I urge you to provide sufficient funding to NMFS and USFWS to meet these commitments.

We also hope to have your continued support for Federal funding for habitat projects. Habitat protection and restoration is a vital part of salmon recovery and King County, our Tri-County partners, and the State have demonstrated a strong commitment to funding for habitat work. Your efforts to secure more than \$40 million in Federal funding in fiscal year 1999 and fiscal year 2000 for salmon habitat improvements have greatly increased the scope and scale of our habitat work, and we deeply appreciate your assistance.

Looking ahead to fiscal year 2001, we appreciate your sponsorship of Senate bill 2228 to create a new Corps of Engineers habitat restoration program for Puget Sound. We are very excited about this new partnership and are ready to step up as local sponsors for this program. We also hope you will support \$25 million in additional funding in fiscal year 2001 for the Salmon Recovery Funding Board through the Commerce budget. The Board is doing an excellent job at ensuring that Federal and State salmon funds are spent wisely.

Thanks to the efforts of you, Senator Gorton, and to many other people in this room, this has been a big year for salmon recovery. I hope you will make this an annual visit and that we can report as much progress in the coming year. Thank you.

Senator GORTON. Ron and Doug, how do your efforts, the Tri-County efforts and the plans you're coming up with relate to the imminent chinook 4(d) rules of the National Marine Fisheries Service? Do you need some delay or some postponement in those rules for you to be able to come up with appropriate plans?

Mr. SUTHERLAND. Senator, we've been working with the National Marine Fisheries and Representatives from this State, and we've been meeting with ourselves. And as we look at the 4(d) rule that we've been negotiating, it is far more complex than many of us had initially anticipated.

It's difficult to say that we're not there yet because when we started, we felt that we could get there. However, in all honesty, I don't think we are there yet. And because of National Marine Fisheries needs for other reasons to move ahead with the publishing of the 4(d) rule, it's caused us to suggest that maybe we should try to work this out a little bit differently because, quite frankly, we're not in a position to be able to respond to what we've not completed in the negotiations.

So to answer your question, I think there needs to be some additional time. I would much rather do it right than just a little bit. Even during my testimony, I'm saying let's deal with this on an incremental manner; that may be the way to do it. Because starting off with this, trying to drink out of the fire hose at full bore is difficult for many jurisdictions to deal with.

The three counties in the Central Puget Sound—King, Snohomish, and Pierce—have by far the most resources to us, both financial and human resources, but even at that, that's limited. I basically have myself and one other person working on these negotiations, plus individuals designated from various staff to help fill in the gaps. And as I look at Snohomish County, they're almost the same.

Ron's got a whole division because he's got all the money in the world.

But even as we look at the rest of the Central Puget Sound and other counties around the Sound, their resources are even less than ours. And as I look at what it takes for us to be able to respond to this, and compare that, even though we're working with those

other counties as much as we can, our ability to be able to deal with it is going to be limited.

Do we need some more time? I think so, yes.

Senator GORTON. Except for the unlimited amount of money, Ron, do you agree with Doug's views?

Mr. SIMS. Well, I don't know. I think—

Mr. DICKS. What about a few loaned executives from Pierce County? Can we do that?

Mr. SIMS. The 4(d) rule that we're presently negotiating with National Marine Fisheries Service and concurrently with U.S. Fish and Wildlife is not as much a rule as it is a habitat conservation plan, a process to arrive at performance levels that provide us levels of sustainable harvest for Chinook, and also recognize the need to recover the char or the bull trout.

So we're not being asked immediately. For instance, in some very complex issues, like how do we recover through a water resource inventory area, a WRIA, that is a process that's been very difficult to articulate, but it brings in all the cities and all the property owners in a WRIA and ask them over an 18-month to 2-year period to come in with the standards that we need for habitat restoration, for surface water controls, all designed, again, to recover.

So I look at the rule that National Marine Fisheries is negotiating and U.S. Fish and Wildlife, and say, can we agree to a rule in April or May or June? And the answer is no. Are we close to being able to have a rule completed so that we can have one before the end of the year? And the answer is yes, because we're being asked in the process not to meet a standard on day one. We're being asked to arrive at a standard over several years that enables the fish to be sustained in this region.

So I am comfortable right now that what we're discussing can be achieved. It will not be achieved by an announcement of a rule or imposing a rule upon us in May or June. But if there was a rule that came out somewhat later this year, I think we would have our—we'd be able to meet that standard.

Senator GORTON. Bill, I think Ron referred very positively to the relationship between the Salmon Recovery Board and the Tri-County effort.

Would you give me your views of the efforts that Tri-County is going through and how the State Salmon Recovery Board relates to those efforts?

Mr. RUCKELSHAUS. The Tri-County and the leadership of the three executives—two of whom are here—has really been a terrific leader in this area in trying to work through this complex problem; and they deserve a lot of credit for having done that.

Ron Sims mentioned the WRIAs, the water resource inventory areas. The lead entities that are created by the statute are really formed around WRIA areas. Most of them are multiple WRIAs and some of them are just one WRIA.

There are 23 lead entities in the State. There are, in fact, two in King County, in separate lead entities representing one WRIA. And the request for funds from our board come through those lead entities, and they're based on a watershed assessment of what the needs are for the salmon in that watershed, what the habitat needs

are, and then they develop a strategy for achieving those needs. And then the project request to us are based on those strategies.

That's not true in every lead entity in the State. We're too new in this process for every lead entity to be up to that level of sophistication.

In the Tri-County area they have quite sophisticated efforts going on. So those projects that came to our board for this first round of funding from the Tri-County area were really first rate. They were done consistent with an assessment that had been made, a strategy that had been developed and were consistent with what was in the best interest of the fish.

This is what we need to do all over the State. This isn't the only place this is happening, but it's a very good example. And there are two areas of the State, the northeastern part of the State and Yakima River Valley where there are no lead entities. They haven't been able to reach an agreement yet in designating a lead entity, and we're working with them to try to get one.

Senator GORTON. Now, one other question for you and for Jerry.

How do you two entities work together, a State one, a private one? Are there any organizations that apply to each of you for money? Do you relate at all to one another in your grant processes?

Mr. RUCKELSHAUS. We don't, and we need to do it better. What we need is a common assessment process, so that when we get an assessment of the needs of a watershed, it is very similar across the State in terms of the analytical basis that it is founded on.

The strategies then necessary to achieve the habitat needs of the salmon coming back to that watershed can be based on that common assessment; and then projects, whether they come to us or the National Fish and Wildlife Foundation, can all be based on those common assessments and strategies that have been developed.

We're trying to get those assessments and strategies in place, so no matter where the source of the money would come from, they'd all be based on those sort of common approaches.

I don't have a doubt in the world that people that I refer to are working so hard in these watersheds, they know where the sources of money are. And they have made applications to everybody they can think of where they'll get money.

I have visited projects over in the eastern part of the State which have been funded from as many as six different Federal and State agencies. They're very good in figuring out where this money can be had and putting it all together to form a project. And it's impressive what they can do.

Senator GORTON. Jerry.

Mr. CLARK. There's been some coordination. We've made sure that all the applications that we've got have been transferred to the SRF Board for review.

I don't necessarily see them as competitive at all. In fact, I think having alternatives makes good sense. I mean, we think of ourselves somewhat as a mass unit. We're mobile, and we try to get there quickly. We're accessible. We're efficient.

For instance, of the federally appropriated funds that we get, we don't take any overhead for that at all. Every dollar that was appropriated to us goes back to the ground for the projects. We raise

money in the private sector to pay our bills. It's part of the deal we made with Congress when we were created.

So you can never disagree with the people coordinating because that makes good sense. You can never disagree with having good science on the table at all times. All of that makes good sense. I think it's good to have, like I said, not competition, but different people taking different looks at the same situation.

Mr. DICKS. On this point—if you'd yield—you said that all of your grant applications have been sent to the State so that they—

Mr. CLARK. Yes.

Mr. DICKS [continuing]. Have gone through and the staff at least has looked at them?

Mr. CLARK. Yes.

Mr. DICKS. Thank you.

Senator GORTON. Senator Murray.

Senator MURRAY. Thank you, Mr. Chairman. Thank you to all of you for really a tremendous amount of work in the past year, and I really appreciate all you're doing, and we want to be supportive in any way we can.

And Mr. Ruckelshaus, particularly to you for taking on this task and moving it forward, and you've brought a positive image to all of this that we all appreciate.

I do have a question. Mr. Sutherland mentioned his county being poorer than King County and others being poorer than that.

Do you have a matching requirement for counties or for projects that—

Mr. RUCKELSHAUS. Yes, we do. It's a 15-percent match.

Senator MURRAY. And is that more difficult for some of the more smaller counties to come up with this? Has that been a problem or challenge for you?

Mr. RUCKELSHAUS. Yes, it was. When we adopted the 15-percent match, we put it out for public comment, and several of the counties commented they didn't think that they were going to be able to meet the 15-percent match. And it was a problem.

Our sense of it was, that if the counties—the lead entities or whoever the applicants were—had some money in the game, they were going to be a lot more careful about how they spent it. And everybody who made application to us was able to come up with the 15 percent. We allowed some of them to show an in-kind contribution as meeting the 15-percent requirement, and so far we've had no projects, to my knowledge at least, that have not been submitted because they weren't able to raise the matching funds.

Senator MURRAY. OK, good.

I have a question for Mr. Sims and Mr. Sutherland.

I hear everywhere complaints about delays in permitting process, from everything from road construction to bulkheads to piling. There's a lot of real concern about that. I'm sure you're hearing as much as I am.

I did talk in my opening statement about Congress needing to provide NMFS with more funding, and the administration has requested additional staffing, and funding for staffing as well. I think they're going to provide 41 new staff if their request goes through.

Can you tell me what your county's experiences have been with delays, and if you support that request or if you have concerns that we should be aware of regarding staffing?

Mr. SIMS. We support the request. We have, from the county release, four of our staff to work with NMFS. I think the State of Washington is release seven. We have what we call section 7 consultations, and for a whole series—whether it's our roads project in particular—we would like to process those.

We had \$86 million last year allocated for roads projects. We were only able to get \$53 million worth of projects through. So you miss a building season, and your costs go up.

I think National Marine Fisheries Service and the U.S. Fish and Wildlife need an infrastructure in which to respond to what I think is going to be an extraordinary amount of, we call, biological assessments that are going to go through.

We also need them to be able to respond quickly as we're negotiating because we are moving forward saying that science should dictate. And you need to have the capacity of both agencies to be able to respond scientists to scientists so that we can get quicker turnarounds.

Part of the issues of negotiation were that we didn't have—they were stretched very thin, so we couldn't get back, in the time frames that we wanted, a lot of our proposals on storm water management, the impacts of buffers, road building and maintenance practices. So we think it would be critical for them to have the infrastructure in which to respond to us.

There's another issue, in this county particularly. Because of the extraordinary growth that we're having here, both in the population and the fact that we're a growth management county and restricted land-use, housing prices have gone up.

So what we're finding now is that for federally funded affordable or low-income housing projects that are going through the for-profit or nonprofit sector, they're all being delayed for two reasons. One, because we have to do the biological assessments, and two, because neither agency has the staff to respond once we submit that biological assessment to them. So things are getting held up, and it would be important for them to have the infrastructure to respond.

Senator MURRAY. Mr. Sutherland.

Mr. SUTHERLAND. In Pierce County last year, altogether we did over 40,000 different kinds of permits, just to put this in some perspective. Snohomish County probably is pretty close to the same, and I'm not sure just how much Ron has done in King County. And this is just in my jurisdiction; it's not county-wide; that's just the unincorporated part of the county.

When it began with the listing that was required to do this additional processing, not only did we have to teach our own staff what to do and help the jurisdictions of the other cities and towns within the county, but also we had to help the other Federal agencies and State agencies as well because we are so integrated and inter-related with the way we fund the projects, each of us had to be able to address the permitting process. And a lot of us didn't have a clue—OK, now who does what and when do they do it?

So there's a significant learning process amongst all of the agencies and jurisdictions involved. So the amount of paperwork has

just been stunning in it's volume. It's not necessarily terribly complex, although some projects are, but even the simplest projects, it takes time for someone to look at it, make a determination, and then move it to the next agency or responsible party.

So just volume alone was enough to give you a pretty good case of constipation.

Senator MURRAY. Is there any direction you can give us on what, if anything, focus we should have new NMFS staff work on, any direction that we should give to those new employees if we get the funding for them?

Mr. SUTHERLAND. Well, first of all, I certainly support the additional staff for NMFS and U.S. Fish. I think both of them are going to be significantly impacted by the amount of work that they're going to have to do. And I think that there needs to be some kind of way that we can cross-train from agency to agency, so that as we build our networking capability, there's ways to be able to shave the corners, if you will, not in the regulation process, but just in moving the various applications. And you do that by knowing better who your other partners are in the process.

So if there's a way for us at the local level to work with and learn who they are at National Marine Fisheries, so that counties can come together, cities can come together and look at ways to be able to standardize, ways to be able to, if you will, decrease the volume but increase the input.

There's ways to be able to do this, and we need to be able to do that in such a way that is, in addition, to the normal processing and moving of the various applications.

Senator MURRAY. Ron, would you have any direction or focus for what those employees should be working on?

Mr. SIMS. Senator, the groups of people we would look at would be biologists, engineers because those are critical for the reviews, whether the biological assessments are responding to our initiative.

I don't know how each agency is organized internally for review, but they have a series of responsibilities; evaluation of biological assessments, a response from scientist to scientist. They would be much more able to articulate that internal need than I. Other than that fact, I can say that we simply released four of our biologists to work with them, not to approve our biological assessments but to look at others.

But you also need road engineers as well. They need to be configured. They need to have their technical infrastructure in place, and that is an issue of the number of FTEs. And they need more; there's no question. And the lack of that is really beginning to have a discernible effect because who it hits is us because we get held up. And it means that the local costs go up for everything that we do.

Unless they have that, they will do their job as best that they're able, and we will be unable to do ours because they will not be resourced to do their work.

Senator MURRAY. OK. Thank you very much. Thank you, Mr. Chairman.

Senator GORTON. Congressman Dicks.

Mr. DICKS. Well, first of all, I want to thank all of you for your statement and recognize the major challenge that you're facing.

I worry a little bit. And I address this to Bill. I've been out to my counties; Mason County, Grays Harbor, Jefferson, Clallam, Kitsap's. A lot of these counties are in the same situation; they have very limited personnel to do this work.

Can any of the grants go to the counties to hire staff to start developing a plan in order to comply with the National Marine Fisheries Service's requirements or are we just doing habitat work?

Mr. RUCKELSHAUS. We convened of, in fact, all of the lead entities after our last grant cycle and spent a day and a half with them going over what the needs were of these lead entities—which really represent, in your case, sometimes more than one county—asking them what kind of capacity-building needs they had.

The State Fish and Wildlife Department oversees the administration of the lead entities, and they have grants that they give to them, about \$50,000 per lead entity is what the State legislature has appropriated.

We have a meeting of our SRF Board tomorrow, and one of the questions is, should we have in this next grant cycle some capacity building kinds of grants for them? By capacity building, we mean the capability of doing the assessment of what the real needs in that watershed are, and then developing a strategy against that assessment; and then the projects come forward consistent with that strategy.

There's no question that some of these counties, these lead entity areas, need that kind of capacity building. And what I think we will end up doing—I don't know yet because we haven't really thought about it as a board—is the next grant cycle, which will end the end of November, will also have in it the capability of these lead entities making applications for capacity building as opposed to doing projects just because they're opportunistic or they happen to cross them.

Mr. DICKS. I strongly recommend that. In going out to these rural counties, I've seen that they just do not have the capability that King County has. King County and Ron Sims have been fantastic in terms of leadership on this issue, as the whole Tri-County effort has been. But for a lot of these other counties, we don't have the money.

And so I would hope that we would do that. I think that's necessary. I think for Eastern Washington for the Senator's responsibility you're going to need some help too to help bring this along.

I didn't mention in my opening statement, but another program that we worked with—I see Curt Smitch is here and Jim Jesernig—is a Conservation Reserve Enhancement Program. It's another tool—and you talked about the conservation districts; that the conservation districts have to get heavily involved in salmon recovery.

We've got this 15-year program that the State and the Department of Agriculture have already agreed to. And I see that—in terms of those ag lands, pasture lands in the riparian zone—as a way to be able to compensate people for the land that they're giving up.

So I urge you all to, in your various capacities, to take a look at that program. It's coming along. It's taking a little while to get it

started, and there's a lot of suspicion by some people about the effectiveness of it.

Another thing that needs to be considered in the context of that is whether the State wants to look at some permanent easements that could go beyond just the 15 years, if it's really crucial habitat. That may be something else that we should look at.

Mr. RUCKELSHAUS. We have been funding it. We funded in this realm preservation of habitat in addition to restoration. And, in fact, in our criteria that we set out, we said we were tilting toward preservation because in some cases that's the most crucial thing you can do to preserve salmon.

Under the statute there's no condemnation requirements. A willing landowner has to be there, and obviously, it has to be a fair price. So that if we can't get the cooperation of the landowner, then there's no sale.

But there's still some resistance. There's questions about the State's ability to manage that land, it takes it off the tax rolls. What is perceived is interference with property rights, so that is not something that isn't without controversy.

On the other hand, the scientists make it very clear that preserving the good habitat is the most important single thing we can do to preserve the fish today. So that if preserving it entails acquiring land, that seems to us to be a wise thing to do if it's available.

Mr. DICKS. Right. Jerry.

Mr. CLARK. We get funds from a variety of accounts in the Federal Government. One of the funds that we got money from this year was the NRCS, National Resource Conservation Service. We got \$3 million of that. One of the things that we made a priority in the expenditure of those funds are Pacific salmon restoration.

So we continue to fund projects for restoration, using all the tools that we have at our availability, not just the funds that were provided this year.

PANELIST. We're doing those sorts of things as well.

Mr. DICKS. But as we get into this ag, fish and wildlife negotiation—and I know that's going to be a major one in the State—as we did with forests and fish, here's another tool—this Conservation Reserve Enhancement Program that we worked on with the State and the Federal Government that I hope will be fully utilized.

Ron.

Mr. SIMS. Congressman, I want to go back to an earlier comment made by Mr. Ruckelshaus.

It's been a lot of discussion about having money for projects. The technical assistance is critical because it means that you can determine whether the project's going to work.

So what we worry about on our county side—even though we don't have a lot of money—people think we do—

Mr. DICKS. Oh, be honest.

Mr. SIMS. We're just a poor county needing a lot of Federal assistance.

But the work you can do up front with your biologist can have substantial returns when the project's in place because you can determine whether that project is going to work. What we worry about is projects being put in place that have no scientific basis for it.

Mr. DICKS. So you've got to do the assessment first of the watershed—

Mr. SIMS. That's correct.

Mr. DICKS [continuing]. Top to bottom, before you start in.

Mr. SIMS. And many counties are not resourced to be able to do that, and they need to be resourced to do that.

Mr. DICKS. Thank you, Mr. Chairman.

Senator GORTON. Well, thank you, each and every one of you, for your help, Jerry, and for two county executives with a heck of a challenge in front of them, and Bill, for you wonderful public service. We really appreciate your service and appreciate your report.

STATEMENT OF JIM KING, CONSULTANT, PRIVATE AND MUNICIPAL PLANNING SERVICES

Senator GORTON. Panel 2 will consists of representatives of Puget Sound and Local Habitat Restoration Efforts.

Panelists on number 2 will please come forward.

Welcome to this very important group, and we will start with Jim King, who is a consultant from Okanogan.

Mr. KING. Thank you and good afternoon. I hope that you take my criticisms in a positive tone. The 5-minutes allotted isn't enough to relate the whole events that have occurred in the Methow Valley since the listing of the upper Columbia steelhead and chinook salmon as endangered and the bull trout as threatened. I'll suffice to say, it's been a very hard period for our community.

The merits of ESA and its application is in need of thoughtful reconsideration. Today I hope to share some insights of certain difficulties encountered by those subject to the ESA when they must interact with, as in our case, three Federal agencies and a host of State agencies charged or otherwise connected with administration of the act.

I believe these difficulties arise chiefly from the lack of early commitment by the agencies in establishing a meaningful, institutional, financial and regulatory relationships with the local community that are needed to make ESA requirements workable and understood. Failure to provide this coordination has caused harm to the citizens, increased resentment towards government and yielded little benefit to the listed species. Further, the lack of coordinated interaction between the agencies has, more often than not, stifled expeditious implementation of good solution. Here are some instances to illustrate the point.

The sanctions of ESA were imposed almost immediately on our valley with little or no warning. And in 1999, irrigation water was shut off that was used to grow crops, water homeowners' yards and gardens and operate businesses.

Threat of curtailment continues for this season for many of these same users. A lack of time to respond has resulted in substantial personal hardships and loss of income.

Many of the agencies mandated remedies require immediate funding for capital improvements, permits, habitat, conservation plans, studies and the like. What local funds that were available were far from adequate.

The unanticipated costs often depleted what little funds local ranchers had. For example, Wolf Creek Reclamation District, the district I represent, annual operating budget is approximately \$12,000 to \$13,000. The district had over the years accumulated a fund of \$40,000 for capital replacement.

In 1999, Wolf Creek raised its assessments by 20 percent to meet extraordinary costs attributable to ESA. Did not provide enough revenues, so a loan was taken. The district has now expended all of their funds and is nearly \$60,000 in debt. Even now, funding programs are not coordinated with needed planning, permitting or capital budgets.

In 1999, Okanogan County submitted on behalf of the Fish Enhancement Project and Irrigators an application for State salmon recovery funds. This application was comprehensive and coordinated. It had received the required two levels of technical and policy review at the local level before being passed to the State.

These same projects had previously been approved and allotted by the National Fish and Wildlife Foundation, another source of funding; yet, at the last instance, the SRF Board ignored its own process and cut from the application two of the top four ranking projects.

This not only worked a hardship on those projects, but eliminated approximately \$450,000 worth of funds planned as a 50 percent match for money previously secured from the National Fish and Wildlife Foundation. Thus, approximately \$900,000 worth of improvements are in jeopardy.

When trying to identify appropriate remedial actions, the community looked at the recovery plans required by ESA to guide their efforts for the different species. Yet, no recovery plans for these fish had been developed by the services for our community. Lacking these, water users were left, in the case of Section 7 water users, with alleged reasonable and prudent alternatives as determined solely by the Federal agencies and as identified in the respected biological opinions.

These in most cases focused on restoration stream flows by setting up target flow levels that effectively eliminated water use for most of 1999 growing season and likely will in the near-term future.

In nearly all cases, these flow levels were best guesses made without the benefit of good hydrology or fish data. Most water users, based on history, believe these flows to be unattainable, even without the effects of irrigation.

Recovery strategies often require a complex and lengthy permitting review. Timelines for these processes can preclude early implementation of projects that could provide benefit to fish.

Case on point, Wolf Creek Reclamation District Multi-Year Fish Enhancement Program contained a project that would provide immediate benefit to all species within the stream. It calls for the reconstruction of the district's diversion structure to allow fish passage even though low flows.

Because this work is within the boundaries of the National Forest, the project cannot be undertaken until NEPA compliance is achieved. When asked about this requirement, U.S. Forest Service

officials explained that they are unable to commit enough manpower to complete the work.

They then proposed a collection agreement, whereby Wolf Creek would pay \$50,000 to complete the work. This requirement puts the project off at least 2 years, and where will Wolf Creek get the \$50,000? Currently, and important part, there is no funding source available for planning or permitting work of this nature.

In my 30 years of dealing with agencies while both in the public and private sectors, I've never seen such muddled governance. From the beginning and continuing today, we have found little constructive coordination or consistency between the three Federal agencies, State agencies and local communities. Instead there has been a web of contradiction of policy and process.

PREPARED STATEMENT

There has been finger-pointing and bickering that continues until today. This behavior has worked against those in the community. If communities are to continue to be involved in recovery efforts and mistakes made are avoided, then ESA must be scrutinized with an eye towards finding ways to ensure an early and adequate commitment of agency resources to provide a meaningful local participation, adequate funding and interagency coordination. Thank you.

Senator GORTON. Thank you very much, Jim.

[The statement follows:]

PREPARED STATEMENT OF JAMES D. KING

Good afternoon. Thank you for the opportunity to testify before this committee and to participate in the discussion of a subject of such importance to my community.

It is not possible in the allotted five-minutes to relate the whole of events that have occurred in the Methow Valley since the listing of the Upper Columbia Steelhead, Spring Chinook, and the Bull Trout. It is not useful in this forum to vent the extreme frustration and anger that has become evident in our community since those listings. And, it is not my intention to debate the merits of the BSA or how it has been applied in our community. Though I hold what I believe to be a well-founded opinion that the Act should be re-examined by Congress whose eye should be directed toward developing standards for its application that more closely reflect science and the community of man.

Instead, I hope to encourage a discussion of certain functional difficulties encountered by those subject to the Endangered Species Act when they must interact with, as is our case, three federal agencies charged or otherwise connected with administration of the Act.¹ I believe these difficulties arise chiefly from the lack of early efforts by the agencies and local community in establishing the institutional, financial, and regulatory relationships needed to make ESA requirements workable and understood. There is no doubt failure to provide this coordination from the onset has caused harm to the citizens, increased resentment toward the government, and yielded little benefit to the listed species. Further, the lack of coordinated interaction between the agencies has often than not, stifled the expedient implementation of good solutions. This, even though, Methow citizens have consistently state: "Just tell us what to do and if it is reasonable we will do it."

So what went wrong? How did a good law go bad?

Here are the conditions most locals would agree have created the greatest contention in the community:

1. There has no reasonable time of funds to comply with ESA requirements. The sanctions of ESA were imposed almost immediately resulting in curtailment of water use by certain farmers, homeowners, and businesses having diversions from

¹ There are more than 50 section 9 (those not having a federal nexus) and 14 section 7 (those having a federal nexus) irrigation diversions on water courses in the Methow watershed.

sites' subject to federal regulation (section 7) in 1999. Threat of curtailment continues for this season for several water users. If agencies impose ESA mandates on rural communities, particularly those which are poor, such as those of north central Washington. And these mandates require expenditures for capital improvements, studies, habitat conservation plans and the like, a focused funding program to implement remedial actions ought to be established early in the process. In addition, water users should be given a reasonable time to comply.

2. Remedial and recovery solutions are not clearly stated or supportable. Most believe "best available science" was not used in support of ESA remedial sanctions. With respect to identification appropriate remedial actions, the community looked to ESA's required recovery plans for the different species to guide efforts. Yet no recovery plans for these fish have yet been adopted at least for our community. Lacking these we are left, in the case of section 7 water users, with the Reasonable and Prudent Alternatives as identified in the Biological Opinions developed by the case of the two agencies. In the case of the Steelhead and Chinook, the National Marine Fisheries Service. In the case of bull trout, the U.S. Fish and Wildlife Service. The BO's were developed independently without meaningful participation by section 7 irrigator or in coordination with sister agencies. What input that was allowed was done after drafts already had been prepared. This gave little time and no resources to respond to or question the findings. As a result, the R&P's in each of the two BO's issued established as the primary remedial action, target flows set at levels that effectively eliminated water use during most of the 1999 crop growing season.² In nearly all cases these flow levels were "best guesses" made by the agencies. Not necessarily "best available science." Most water users thought them to be set quite arbitrary and largely unattainable even in nature. Target flow required assured curtailment of diversion in all but the wettest years.

3. Inordinately high costs of compliance. While outside funding, while recently generous, was not available to from the onset to fix immediate problems. These unanticipated costs depleted what little funds were locally available. Wolf Creek Reclamation District annual operating budget is approximately \$12-\$13,000. The District had over the years accumulated a \$40,000 fund for capital improvements. In 1999, Wolf Creek raised its assessment by 20 percent to meet extraordinary costs attributable to ESA. Even this did not provide enough revenue so a loan was arranged and the District now has expended all funds available and is nearly \$60,000 in short term debt. Even now, funding is not necessarily coordinated with permitting, regulatory review requirement, and the funding strategies needed to achieve maximum efficiency. The 1999 Salmon Recovery RF Board funding request submitted by Okanogan County on behalf of several irrigation companies and water users was modified by the SRF Board at the last instant. This in spite of the fact that the application reflects the local attempt at providing a coordinated approach to salmon recovery. An approach judged competent by two local review committees established for that purpose. As a consequence, a number of projects that rank extremely high by local review committee were not funded. This not only work a hardship on these projects but eliminated approximately \$400,000 of funds planned to match money from the National Wildlife Foundation. Thus \$800,000 of improvements will not occur.

4. Little, if any, meaningful local input into structuring a comprehensive and workable recovery strategy. A planning group currently sits with the goal of providing local input into developing recovery efforts for the watershed. Their efforts to develop workable approaches with the agencies have not yet borne fruit.

5. Conflicting permitting requirements, agency policy, and lengthy approval processes.³ Meeting ESA mandates often require complex permitting review. Timelines for these processes often preclude timely implementation of projects that could provide immediate benefit to fish. As a case in point, Wolf Creek Reclamation District has structured a multi-year program of enhancement to their system that will benefit fish. One element of that plan would provide immediate benefits to all species within the stream. It called for the reconstruction of the District's diversion structure in such a way as to allow fish passage during low flow periods. Because the work was within the boundaries of the National Forest the project could not be undertaken until NEPA compliance was achieved. When queried about this require-

²Most section 7 ditches had water curtailed last year because of screen or flow conditions. This resulted in economic loss for the community with no documented benefit to the fishery.

³Permitting review for water related projects associated with Wolf Creek Reclamation District has involved the following agencies. Okanogan County Planning Department, Washington State Department of Fish and Wildlife, Washington State Department of Ecology (up to 3 permits), U.S. Army Corps of Engineers, United States Forest Service, National Marine Fisheries Service, and the U.S. Fish and Wildlife Service.

ment, USFS official explained they were unable to commit enough man power to complete the work and proposed a collection agreement whereby WCRD would pay \$50,000 to them to complete the work. The schedule put the project off at least 2 years.

6. Little coordination between agencies at all levels. From the beginning and continuing until today we have found little constructive coordination between the three federal agencies, state agencies, and the local community. In fact there has been open hostility and bickering between them that continues today. This behavior has worked against those in the community faced with complying with ESA requirements.⁴

Here are some suggestions that may have helped in the Methow:

1. Establish early communication between the agencies and affected area that assure local representation.
2. Coordinate and prioritize agency resources to focus the necessary manpower, technical expertise, and funds to the affected community throughout the process.
3. Implement a systematic effort to gather or generate best available science to determine the most appropriate recovery measures.
4. Establishing reasonable time-frames for the remedies be implemented that take into account determining the best approach, securing needed funding, and completing permitting time-frames.
5. Provide adequate funds for developing science and implementing clearly defined remedial measures.

STATEMENT OF PAULA MACKROW, EXECUTIVE DIRECTOR, NORTH OLYMPIC SALMON COALITION

Senator GORTON. Next, Paula Mackrow, the executive director of the North Olympic Salmon Restoration Lead Entity Group.

Ms. MACKROW. Thank you.

Hello. I'm Paula Mackrow of the North Olympic Salmon Coalition. We participate in two different lead entities; the Hood Canal Council and the North Olympic Peninsula Lead entity group.

I think the mistake points out just one of the layers of confusion that the multitude of processes puts into the program, and that you need a score card to keep track.

North Olympic Salmon Coalition is one of 12 regional fishery enhancement groups in Washington State that are created by State legislation and have been funded primarily by a portion of commercial and recreational fishing licenses in the past few years, by the generous dedication of Federal funds. And I'd like to thank the Senators and Congressman Dicks for that Federal dedicated funding.

NOSC, as we're called, has been partnering in project development and implementation since 1992 in a variety of large and small watersheds across the North Olympic Peninsula in Jefferson, Clallam and Kitsap Counties. Often the easiest fix for salmon is to restore coho habitat by replacing culverts and removing other barriers to passage and repairing buffers and wetlands. And we've been involved in these activities all across the peninsula. A more subtle positive impact of these activities is the benefits to habitat of summer chum in the near shore and downstream habitats.

Since you can't see the summer chum wiggling out in the spring and in the fall like you can with the silvers so easily, it's remark-

⁴From the beginning and continuing until today, there has been little constructive coordination between the three federal agencies involved. Indeed, in some instances there has been manifest hostility between them. For example, The Okamogan National Forest, serving as implementers of the ESA mandates by virtue of section 7, sought from but did not receive timely response from the agencies during consultation process. The result was a public spectacle between these agencies lasting months and lack of early warning of ESA consequences to irrigators.

able to our volunteer workforce to see their visible success in restoring summer chum to Chimacum creek in the fall of 1999.

This marks the first return of summer chum spawners from a 7-year collaboration with Department of Fish and Wildlife and Wild Olympic Salmon in a volunteer broodstock program across two watersheds.

In the light of the ESA listings, I would consider this our greatest measurable achievement not from the numbers of fish to count, because that is still very small, but rather from the impact to the community to make this recovery happen watershed by watershed in our own backyards, on our own time and with our own hands.

So thank you for this opportunity to discuss our local community-based and volunteer efforts to restore salmon habitat. Your support of these efforts through Federal funding directly to the regional fishery enhancement groups have provided a large measure of success in our efforts and ability to identify problems, develop and implement habitat restoration projects.

With your help we can continue our role as leaders in the community-based recovery strategy. And thanks to Senator Murray and Congressman Metcalf for their efforts on behalf of the Northwest straits.

My first specific point, again, is to mention how important dedicated funding is. It produces community-based salmon restoration, education, landowner outreach and cooperative ventures locally and efficiently.

Those who know the watersheds have a record of finding problems, identifying the solutions, developing the projects and creating the design and implementation partnerships necessary to recover salmon habitat watershed by watershed.

Our early opportunistic work has encouraged new partnerships, and over the years our experience has led us into strategic approach in many of these watersheds.

Second, summer chum, I'd like to note, has been described as an "edge species." They come in early when the stream flows are low, so upstream impairments have a significant impact, the temperature and other water quality factors and the water necessary just for passage and spawning.

The Olympic Peninsula summer runs are historically small but provide a component of genetic diversity that hold some secrets to the incredible ability of salmonids to respond to changes in the environment over time. Unfortunately, over the past 150 years these changes have come too fast and from too many directions.

Chinook and summer chum are indicators of the health of the Puget Sound ecosystem, and that reflects those incredible changes in the Puget Sound area.

So third, nearshore restoration opportunities are not as obvious and are limited by the incredible extent of shoreline hardening in the summer chum ESU at this time. Both simple and expensive fixes are identified in Hood Canal along the Olympic Coast and in the extensive nearshore habitat of Island County which they call the bed and breakfast of Puget Sound for chinook and summer chum. Both species depend on estuary and nearshore for feeding and shelter much longer than was previously understood.

And fourth, I'd like to once again comment that the proposed 4(d) limitations don't include adequate provisions for us to continue our plan and funded projects without funding the NMFS consultation backlog on restoration work itself.

The consultation requirements should be geared towards those activities that harm, rather than foster, ESA recovery. We need to be able to continue to work from our priority list without unnecessarily duplicative scrutiny. These lists from my experience have been well documented and have received several levels of technical review.

I guess in closing I'd like to note that the concept of watershed conservation action plans is very welcome and NOSC hopes to be proactive and participate with our numerous project partners and lead entities to initiate development of these watershed plans for State and NMFS approval within the 2-year time frame.

As been noted, community-based restoration planning is often the last thing that funds are available for, and they do tend to be highly competitive among agencies; and the nonprofits would like to take a leading role in that planning effort.

Dedicated funding helps us build these knowledge basis and provide the information to the eager and sometimes bewildered communities we work with. People want to do the right thing, especially if a pack is carefully laid out.

Please make it easy for us in the home streams to do the right thing. Dedicated funding helps us be in the right place at the right time to meet the spiraling challenge of multi-species recovery in our diverse ecosystem.

Thank you for your time and consideration and our communities are ready to serve in the recovery effort. We hope you will continue to work with organizations like ours throughout Washington and Oregon.

Senator GORTON. Thank you. And I will say to you, and to each of you, your full written statement—your more detailed statement—will be included in the record.

But before we go on to Peter Heidi, what is nearshore hardening?

PREPARED STATEMENT

Ms. MACKROW. Nearshore hardening is the bulkheading and rip-rapping that some of the county agencies are in a hurry to expedite, they're permitting for. It is one of the most destructive things for chinook and summer chum habitat. Nearshore beaches with specific sand sizes are required for spawning for sand lands and surf smelt, and it is the area where eel grass beds are most likely to be impacted by increased wave refraction.

Senator GORTON. Thank you very much.

[The statement follows:]

PREPARED STATEMENT OF PAULA MACKROW

Hello, I'm Paula Mackrow, executive director of the North Olympic Salmon Coalition, one of twelve regional fisheries enhancement groups in Washington State. NOSC, as we are called, has been partnering in project development and implementation since 1992 in a variety of large and small watersheds across the North Olympic Peninsula in Jefferson, Clallam and Kitsap Counties. In this area the easiest fix for salmon is to restore coho (silver) salmon habitat by replacing culverts, remov-

ing other barriers to passage and restoring riparian buffers and wetlands that we have been involved in across the area.

More subtle is the positive impact these activities have on the downstream and nearshore habitat of summer chum. What is more remarkable than to the volunteer workforce is our visible success in restoring summer chum to Chimacum creek in the fall of 1999. This marks the first return of spawners from a 7-year collaboration with WDFW and Wild Olympic Salmon in a volunteer broodstock program in two watersheds.

In light of the ESA listings, I would consider this our greatest measurable achievement. Not from the numbers of fish to count for that is still very small, but rather from the impact to the community to make this recovery happen watershed by watershed, in our own backyards, on our own time, with our own hands.

Thank you for this opportunity to discuss our local community based and volunteer efforts to restore salmon habitat. Thank you to Senator Gorton and Congressman Dicks. Your support of these efforts through Federal funding directly to the Regional Fisheries Enhancement Groups has provided a large measure of success in our efforts and ability to identify problems and develop and implement habitat restoration projects. With your help we can continue our role as leaders in the community-based recovery strategy. And thanks to Senator Murray and Congressman Metcalf for efforts on behalf of the Northwest Straits.

1. Dedicated funding produces community based salmon restoration, education, landowner outreach cooperative ventures locally and efficiently. Those who know the watersheds have a record of finding problem areas, identifying solutions, developing projects and creating the design and implementation partnerships necessary to recover salmon habitat watershed by watershed.

2. Summer chum has been described as an "edge species". They come in early when stream flows are low so upstream impairments have a significant impact. The Olympic Peninsula summer runs are historically small but provide a component of genetic diversity that holds some secrets to the incredible ability of salmonids to respond to changes in the environment overtime. However over the past 150 years, the changes have come too fast and from too many directions.

3. Nearshore restoration opportunities are not as obvious and are limited by the incredible extent of shoreline hardening in the Summer Chum ESU being at this time. Both simple and expensive fixes are identified in Hood Canal along the Olympic Coast and the extensive nearshore habitat of Island County, "the bed and breakfast of Puget Sound" for chinook and summer chum.

4. Proposed 4(d) limitations don't include adequate provisions for us to continue our planned and funded projects without facing the NMFS consultation backlog. The consultation requirements should be geared toward those activities that harm rather than foster ESA recovery. We need to be able to continue to work from our priority lists without unnecessarily duplicative scrutiny.

Salmon need cool, clean water. We are ready to move on to change our collective and pervasive behaviors to ensure cool clean water.

1. Dedicated funding, produces community based salmon restoration, education, landowner outreach cooperative ventures locally and efficiently. The Federal dedication to RFEGs has allowed us to provide a consistent source of funds to a variety of partners with conservation districts, tribes, WDFW and non profits such as land trusts and restoration teams.

—Those who know the watersheds have a record of finding problem areas, identifying solutions, developing projects and creating the design and implementation partnerships necessary to recover salmon habitat watershed by watershed.

—We are building local project lists and need help in defining the critical pathway on each watershed, across basins and within the regional context. These are time consuming collaborations that are best served when an adequate knowledge base is available.

—Monitoring and planning are key to the adaptive management approach to recovery. Volunteers are most effective when the requirements are clear and the tasks well defined so strategic planning is essential.

—Expediency is hampered as program funding changes from year to year and match and project criteria fluctuate wildly.

—For the folks on the Olympic peninsula, administrative overhead entailed in grant competition and match documentation is a burden on small entities with limited budgets. With minimal overhead and efficient use of staff and volunteers, only 10 percent of our total funding is used for administration and office overhead.

—For future program consideration I'd like to comment on the match restrictions. Restrictions on building funding matches between intra-government programs tend to limit interagency cooperation in the new funding landscape.

- On both the State and Federal level, intra-agency matches help incorporate the habitat recovery ethic into the collective workplan and fosters communication efforts between all agencies: from, transportation and agriculture, to education, juvenile justice programs and out to our partners in the armed forces. Local participation includes the Navy resource managers and of course the Army through the Corps of Engineers.
- Example: If Federal \$\$ to the SRFB cannot be matched with other SRFB program \$\$ we have lost a chance to build a partnership.
- 2. Summer chum has been described as an “edge species”. They come in early when stream flows are low so upstream impairments have a significant impact.
 - The Olympic Peninsula summer runs are historically small especially compared to Alaskan dog runs but they provide a component of genetic diversity that holds some secret to the incredible ability of salmonids to respond to changes in the environment overtime. However over the past 150 years, the changes have come too fast and from too many directions.
 - Our focus for restoration is often in the summer chum streams of East Jefferson and Clallam Counties on the Olympic Peninsula, and includes portions of Kitsap and Island Counties. We are interested in using construction money to continue our low gradient pasture reclamation projects as well as address the multitude of barriers to passage in coho and cutthroat watersheds.
 - Our projects are largely channel reconfiguration projects in low gradient areas of floodplain farmland that has been ditched and channelized for decades. The weed choked areas of wetland often result in low dissolved oxygen readings and other impacts to salmonids.
 - Local Landowners are currently stepping up to allow restoration of these stream channels and providing their crop and pasture land for riparian buffer creation. Unless there is a formal easement granted (more hoops to jump through) the land is not counted as match even with a ten to year landowner agreement.
 - The benefits of these projects to water quality, floodplain function restoration, and riparian vegetation replacement are extensive. Post-construction water quality monitoring and fish use surveys need continued and expanded financial support to document beneficial outcomes to you and to our communities.
- 3. The nearshore and estuarine environments are new focus for our communities’ restoration efforts. Salmon need more than rivers can provide.
 - Loss of estuarine function is of particular importance as factors for decline of summer chum and chinook in Puget Sound. These species spend considerable amount of their juvenile life stage at the interface between freshwater and marine waters where food and protective cover are prevalent.
 - The nearshore coastline is also critical for food and shelter for these juvenile salmonids. It is the highway for the migration of both species between the estuaries and before and during the out migration to the sea. These areas provide the spawning grounds for the sandlance and surf smelt, vital as food sources in the complicated food chain of Puget Sound. Hence the reference to Island County as the “Bed and Breakfast” for salmon.
 - Nearshore restoration opportunities are not as obvious and are limited by the incredible extent of shoreline hardening in the Summer Chum ESU being at this time. Both simple and expensive fixes are identified in Hood Canal along the Olympic Coast and the extensive nearshore habitat of Island County, “the bed and breakfast of Puget Sound” for chinook and summer chum.
- 4. “50 CFR Part 223 Endangered and Threatened Species; Proposed Rule Governing Take of Seven Threatened Evolutionarily Significant Units (ESUs); Proposed Rule.” Proposed 4(d) rule “50 CFR Part 223 Endangered and Threatened Species; Proposed Rule Governing Take of Seven Threatened Evolutionarily Significant Units (ESUs); Proposed Rule” has significant impact on our low gradient farmland channel reconfiguration activities.
 - Projects reviewed through the Salmon Recovery Funding Board, and the RFEG Citizens advisory board Regional fisheries, includes multiparty, multi-agency and tribal review.
 - Projects are subject to State permitting agencies and a local streamlined review process that addresses the concerns of all regulatory parties.
 - Duplication of these efforts with a NMFS consultation is unnecessary. It puts stress on the ability of NMFS to provide adequate and timely consultation on larger private and municipal projects. Those consultation requirements are geared toward those activities that harm rather than foster ESA recovery. We need to continue our work from our priority lists without unnecessary additional and duplicative scrutiny.
 - The conditions of habitat restoration construction projects and channel alterations requiring project by project review is onerous in that techniques used in

those activities are also used in culvert replacement operations. These culvert activities are included in the limitations to take provisions in the proposed 4(d) while our channel alterations are not.

—We see this as an unintended consequence of the rule making process. While supporting the concepts contained in the 4(d) rule, it seems unnecessary to cause a pause in our forward looking, community based, technically sound project planning and implementation. The rules are meant to address the excesses of other elements of the economy and the 150 years of impacts to the viability of salmonid productivity in our watersheds.

The concept of watershed conservation/action plans is very welcome and NOSC hopes to be proactive and participate with our numerous project partners to initiate development of these watershed plans for State and NMFS approval within the 2 year time frame.

Unfortunately, community based restoration planning is the last thing funds are available for. Where available, they are the most competitive. Dedicated funding helps us build these knowledge bases and provide the information to the eager and sometimes bewildered communities. People want to do the right thing especially if the path is carefully laid out.

Please make it easy for us in the home streams to do the right thing. Dedicated funding helps us be in the right place at the right time to meet the spiraling challenge of multispecies recovery in our diverse ecosystems.

Thank you for your time and consideration. Our communities are ready to serve in the recovery effort. We hope you will continue to encourage work like ours throughout Washington and Oregon with dedicated Federal resources.

**STATEMENT OF PETER HEIDE, DIRECTOR, FOREST MANAGEMENT,
WASHINGTON FOREST PROTECTION ASSOCIATION**

Senator GORTON. Peter Heide of the Washington Forest Protection Association. Welcome.

Mr. HEIDE. Thank you, Senator for inviting me here today.

Washington Forest Protection Association represents private landowners of over 4 million acres of forest land in the State. Our members have been actively pursuing solutions to challenges of forest management and public resource protection since the 1987 Timber Fish Wildlife agreement.

Building on that foundation, in 1997, we engaged with State and Federal agencies, tribes and others to address ESA concerns over salmon, steelhead bull trout and water quality issues.

The results of this positive step was a Forest and Fish agreement. It's a comprehensive system of regulation, voluntary actions, funding and adaptive management to address fish habitat and water quality issues on the managed forest lands in the State of Washington. This is the first agreement of its kind that is seeking both ESA and Clean Water Act compliance.

I'm here to report to you today that the Forest and Fish agreement is up and running. The Washington State legislature and Governor Locke have both endorsed the agreement, and it's been placed in the draft—or recognized in the draft 4(d) rule issued by National Marine Fisheries Service.

The first tangible results of this 3 years of work, including 18 months of hard negotiations, is a set of interim forest practices rules, passed by the State's Forest Practices Board and put into effect by March 20.

The rules are the first step in a regulatory system of putting the Forest and Fish agreement to work for greater protection of fish habitat and water quality on over 8 million acres of forest lands and the State.

The Forest and Fish agreement is more than just recommendations for a new set of rules. The authors of the agreement recog-

nized that current scientific knowledge falls short of providing the definitive answers to all of the questions that surround forest practices and fish habitat.

Our industry, along with other participants, has a renewed commitment to use scientific methods and a structured policy approach to resolve these uncertainties and adapt forest management and regulation to new knowledge as it becomes available.

Adaptive management is learning by doing. It's essentially a combination of feedback on how well the current rules are doing and new information that may come from any source. The challenges we face with forest and fish is to put together a structure of adaptive management that can efficiently monitor field implementation of the rules and conduct scientific research and process this information for changes where they're necessary.

This system must operate in a collaborative atmosphere that includes not only the participants of the Forest and Fish agreement but other stakeholders if they choose to join in. To further complicate the mission, scientists and policymakers are forced to work under the same roof, respecting each other's responsibilities but ultimately accepting the realities and limitations of both disciplines.

To overcome this, the scientists must take a disciplined approach that follows scientific method and statistical protocols. Policymakers must have confidence in and respect the values of the technical information.

In the ideal adaptive management world, the monitoring of results and the best available science would lead to a consensus recommendation to the rulemakers and to the managers that are responsible for putting the science to work on the ground.

To give you an idea of the scope of the challenges that face the Forest and fish agreement, it contains more than 50 questions that should be answered by scientific investigation to ensure the Federal and State regulators that substantial progress is being made toward the goals of the agreement.

The questions fall into three categories. Monitoring, to find out if the rules will get us the fish habitat we think the fish need; validation of our scientific assumptions about what we think the fish need; and building on the basic science of how streams, fish and forests work in an ecosystem.

In a very brief summary, here's how the Forest and Fish adaptive management program will be implemented.

The public agency that writes the forest practices rules, the State Forest Practices Board, they're in charge. A work team made up of stakeholder scientists will follow the research priority set by the board and gets the monitoring and scientific study work done.

There's a stakeholders group that's responsible for reviewing the results of the monitoring and scientific study and making recommendations to the board. There's an independent scientific review panel to peer review the work of the stakeholder scientists. And there are management functions to keep everything running and to ensure that the board receives timely and accurate communications about the progress of the studies.

Because it has to work in a collaborative atmosphere, the Forest and Fish agreement addresses this challenge with an organization that demands participation and requires a great deal of personnel

time from Federal and State agencies, landowners, tribes and others who wish to participate.

Each prioritization, each study plan, each research result and each decision must be communicated, discussed and decided on among the parties. That means that people from each stakeholder group have to be available to work with the scientific and policy teams. A commitment of personnel and agency support specific to these tasks and needs, and, of course, the funding of these agencies and the tribes to meet their commitment is required.

We'd like to thank you, Senator Gorton and Senator Murray and Representative Norm Dicks, for the substantial funding appropriation to our State and the tribes, and we hope this level of funding can continue in the future.

PREPARED STATEMENT

Forest and Fish is working, and with adaptive management we'll continue to work. The alternative is to demand less information and to make decisions without adequate knowledge. And, of course, if we do that, ultimately the questions will remain and the conflicts will not be settled. Thank you.

[The statement follows:]

PREPARED STATEMENT OF PETER HEIDE

Thank you for this opportunity to speak to you today. My name is Peter Heide. I am the Director of Forest Management for the Washington Forest Protection Association. We represent the private owners of over 4 million acres of forestland in Washington. Our members have been actively pursuing solutions to the challenges of forest management and public resource protection since the 1987 Timber Fish Wildlife agreement. Building on that foundation, in 1997 we engaged with State and Federal agencies, Tribes and others to address ESA concerns over salmon, steelhead, bull trout, and water quality. The result of this positive step was the Forests and Fish agreement—a comprehensive system of regulations, voluntary actions, funding and adaptive management to address fish habitat and water quality issues in the managed forests in the State of Washington. This is the first agreement of its kind in the Nation to seek both ESA and Clean Water Act compliance.

I am here to report to you that the Forests and Fish agreement is up and running. The Washington State Legislature and Governor have endorsed the agreement. It has been recognized in Draft 4(d) rules issued by the National Marine Fisheries Service.

The first tangible result of 3 years of work including eighteen months of hard negotiations is a set of interim forest practices rules passed by the state's Forest Practices Board and put into effect on March 20. The rules are the first regulatory step in putting Forests and Fish to work for greater protection of fish habitat and water quality on over 8 million acres of private and state managed forestland in our state. A draft environmental impact statement for changes to permanent state forest practices rules is currently undergoing public review.

The Forests and Fish agreement is more than just recommendations on a set of new regulations. The authors of the agreement recognized that current scientific knowledge falls short of providing definitive answers to all of the questions around forest practices and fish habitat. Our industry, along with the other participants, have a renewed commitment to use scientific methods and a structured policy approach to resolve these uncertainties and adapt forest management and forest practices regulation to new knowledge as it becomes available.

Adaptive management of learning by doing is fundamental to the agreement. It is essentially a combination of feedback on how well practices are doing in real-life application and new information from all sources to improve practices. The challenge we face in Forests and Fish is to structure an adaptive management system that can efficiently monitor field implementation of the rules, conduct scientific research and process this information for changes where necessary.

This system must operate in a collaborative atmosphere that includes not only the participants in the Forests and Fish agreement, but other stakeholders if they choose to join in. To further complicate the mission, scientists and policy makers are

forced to work under the same “roof”, respecting each other’s responsibilities, but ultimately accepting the realities and limitations of both disciplines. To overcome this, scientists must be encouraged to direct their efforts to the specific questions that are needed to make decisions and to focus on generating useful information. Policy makers must have confidence in and respect the value of technical information. To maintain credibility, scientists must take a disciplined approach that follows scientific methods and statistical protocols.

In the ideal adaptive management world, monitoring results and best available science would result in consensus recommendations to the rule makers and the managers responsible for putting the rules and the science to work on the ground.

To give you an idea of the scope of this challenge, the Forests and Fish agreement contains more than 50 questions that should be addressed by scientific investigation to assure Federal and State regulators that substantial progress will be made toward the goals of the agreement. These questions fall into three categories:

- Monitoring to find out if the rules will get us the habitat we think the fish need.
- Validating our scientific assumptions about what we think fish really need.
- Building on the basic science of how streams, fish and forests work as an ecosystem.

In a very brief summary, here is how the Forests and Fish adaptive management program will be implemented. The public agency that writes forest practices rules, the Forest Practices Board, is in charge. A work team made up of stakeholder scientists follows research priorities set by the Board and gets the monitoring and scientific study work done. A stakeholder policy group is responsible for reviewing the results of monitoring and scientific study and making recommendation to the Board. There is an independent scientific review panel to peer review the work of the stakeholder scientists. And, there are management functions to keep everything running and to ensure that the Board is receiving timely and accurate communication about the progress of studies.

Because it has to work in a collaborative atmosphere, the Forests and Fish agreement addresses this challenge with an organization that demands participation and requires a great deal of personnel time from Federal and State agencies, landowners, Tribes and others who wish to participate. Each prioritization, each study plan, each research result and each decision must be communicated, discussed and decided upon among all parties. That means that people from each stakeholder group have to be available to work on the scientific and policy teams. A commitment of personnel and agency support specific to these tasks is needed, and of course, this means funding the agencies and tribes to meet the commitment. We would like to thank Senator Gorton and Congress for the substantial funding appropriation to our State and to the Tribes, and we hope that this level of funding can be maintained in the future.

Forests and Fish is working and with adaptive management, will continue to work. The alternative is to demand less information and to force decisions without adequate knowledge, but ultimately the questions would remain and the conflict would not be settled.

STATEMENT OF JACK KAEDING, EXECUTIVE DIRECTOR, FISH FIRST

Senator GORTON. Next, Mr. Jack Kaeding of Fish First from Woodland, WA.

Mr. KAEDING. Thank you Senator Gorton, Senator Murray and Congressman Dicks.

My name is Jack Kaeding. I’m an executive director of Fish First. Our organization is a 501(c)(3) corporation founded by Gary Loomis in 1995. Our mission statement is “More and Better Wish in the Lewis River.” We are 100 percent volunteers. We pay no one who works for Fish First.

From 1997 through 1999, we have completed 12 major projects that totaled over \$640,000 with a true market value of over \$1 million. The difference is, of course, the volunteer effort.

From 1996 to 2000 we released through our net pens over 900,000 steelhead and spring chinook smolts. We have three major projects for the Year 2000 that are funded by the Lower Columbia Fish Recovery Board along with our dollar-matching requirements.

Now we find ourselves stopped in our tracks because the National Marine Fisheries Services', or NMFS, interpretation of the Endangered Species Act, which requires us to do a biological assessment on each project. We're told that this is an 18-month to 2-year process.

Two areas under that. First, the Endangered Species legislation itself, while well intended, has flaws in it that are subject to wide interpretation by NMFS. It is designed as a defensive legislation, i.e., do no harm. NMFS is interpreting it in that manner, and their interpretation means that we cannot do good either or at least we'll have substantial delays.

Second. In 1999, we avoided this problem by working under the umbrella of the U.S. Fish and Wildlife Service. They developed a programmatic which met all the criteria of the BA, and as long as they funded helped design and engineer the projects, we were exempt. So we got a lot of work done.

Does more money equate to better results for fish? Well, it certainly should, but it doesn't always turn out that way.

The 15-member Lower Columbia Fish Recovery Board was created for five counties in southwest Washington. There are five county commissioners that sit on the board, along with their individually appointed "citizens' representative." This two-thirds structure may be weighted to the county sentiments because they represent two-thirds of the members of the board.

The board received 24 requests, submitted 24 prioritized, and the Salmon Funding Recovery Board approved 9. Eight of the nine projects require a BA that could be an 18- to 24-month delay. Volunteer groups like Fish First are cut off from doing good that directly benefits fish. We're the most cost effective, and we do the best work because we care, and we urgently need your help.

The five counties involved have the paid staff to do the BAs for their projects. If they get the money, it will go for culvert removal, which is really the responsibility of the Department of Transportation—should be funding culvert removal. Roads cause the culvert blockages to begin with, and anyone who drives a vehicle should pay to fix it. We should not be using fish recovery funds to remove or modify culverts in our opinion.

What causes these problems? There are too many agencies involved in bringing back the salmon. There's a lack of interagency cooperation and communication, and that is because no single agency is in charge. This is proven by the fact that we have funded projects but no BAs. This should have been foreseen by a lead agency that coordinates and directs all the salmon recovery programs.

There are other monumental problems.

1. Lack of interest and response and enforcement on behalf of the agencies that are suppose to protect fish that are covered in existing laws, specifically the EPA, the DOE and NMFS.

2. Gravel mining and processing laws enacted in 1872 are obsolete. Mining and processing in valley floors of streams or tributaries containing anadromous fish should be illegal. We're not opposed to mining, and there are optional inventories of gravel in other locations that can be mined and processed without negative impact to fish by using new technology.

3. Regulations or legislation is needed to prohibit grandfathering of existing uses that degrade fish habitat.

4. NMFS and the Federal Emergency Management Act have secret meetings with gravel mining proponents that are closed to the public and documents withheld that should be public record under the Freedom of Information Act.

5. Current fish biologists and fish management practices need new direction and focus on best science for fish rather than current focus on harvest.

NMFS must be directed immediately to a broader common-sense interpretation of the ESA. For example, a 5-percent negative to fish during a short window of construction time can result in a 95 percent or better gain to the fish habitat over the long haul or the term of the project. The construction window is not a 12-month calendar. It runs from approximately June 1 through September 15. We're out of the water when the first return to spawn.

Fish First has a clear focus to help return salmon and steelhead to near historical levels in quality and quantity. We know there are better proven methods than our hatcheries employ, and they can be accomplished with far less revenue.

That concludes my written comments. But I would like to say that the interagencies for outdoor recreation who have constructed the landowner agreements that go along with these funds and the contract that a nonprofit must sign, was obviously written by an attorney who had the sole interest of protecting the agency and no interest in protecting the people who are doing the work.

PREPARED STATEMENT

I don't know how firm that contract is or how it will be interpreted, but we are required to by industrial insurance that we can't afford, and we think the contract is far too restrictive. It may apply at the county level, but it cannot apply, in our opinion, at a nonprofit level because we simply don't have the funds. And if we did, we would rather spend it on fish than spend it on insurance. Thank you.

Senator GORTON. Thank you.

[The statement follows:]

PREPARED STATEMENT OF JACK KAEDING

FISH FIRST is a 501(c)3 non-profit organization founded in June 1995 by Gary Loomis, founder of G. Loomis Inc. Our mission statement is "More and Better Fish in the Lewis River With No Politics" (referring to harvest issues).

From 1997 through 1999, we have completed 12 major projects that total over \$640,000 with a true market value of over \$1,000,000. From 1996 through 2000 we've released through our net pens 906,450 steelhead and spring chinook smolts. We have three major projects for year 2000 that are funded by the Lower Columbia Fish Recovery Board (LCFRB), along with our dollar matching requirements. Now we find ourselves stopped in our tracks because of National Marine Fisheries Services' (NMFS) interpretation of the Endangered Species Act (ESA) which requires us to do a Biological Assessment (BA) on each project. This we are told takes from eighteen months to 2 years to complete.

1. The ESA legislation itself, while well intended, has parts in it that are flawed and subject to wide interpretation by NMFS. It is designed as a defensive legislation; i.e. "do no harm". NMFS is interpreting it in that manner and their interpretation means we cannot do good either.

2. In 1999 we avoided this problem by working under the umbrella of USFW. They developed a "programmatic BA" at considerable expense to the taxpayers that

covered the BA requirements with NMFS so the projects they funded and designed met the BA specifications.

Does more money equate to better results for fish? It should, but not the way it is structured now.

The fifteen-member LCFRB was created for five counties in southwest Washington. There are five county commissioners that sit on the board along with their individually appointed "citizen representative". This 2/3 structure may weight the board to be more oriented to county sentiments.

The board received 24 requests, submitted 24 prioritized, the Salmon Funding Recovery Board (SFRB) approved nine, and eight of the projects require a BA, which delays the projects from eighteen to 24 months.

Volunteer groups like FISH FIRST are cut off from doing good that directly benefit fish. We are the most cost effective and we do the best work because we care, but we urgently need your help.

The five counties involved have the paid staff to do the BA's for their projects. If they get the money, it will go for culvert removal, which is really what the Department of Transportation (DOT) should be funding any way. Roads caused the culvert blockages and anyone who drives a vehicle should pay to fix it. We should not be using fish restoration money to remove or modify culverts.

What causes these problems? There are too many agencies involved in bringing back the salmon. There is a lack of inter-agency cooperation and communication and that is because no single agency is in charge. This is proven by the fact that we have funded projects but no BA's. This should have been foreseen by a lead agency that coordinates and directs all of the salmon recovery programs.

There are other monumental problems.

1. Lack of interest, response and enforcement on behalf of the agencies that are supposed to protect fish that are covered in existing laws. Specifically EPA, DOE and NMFS.

2. Gravel mining and processing laws enacted in 1872 are obsolete. Mining and processing in valley floors of streams or tributaries containing anadromous fish should be illegal. We are not opposed to mining and there are optional inventories of quality gravel in other locations that can be mined and processed without negative impacts to fish by using new technology.

3. Regulations or legislation is needed to prohibit grandfathering of existing uses that degrade fish habitat.

4. NMFS and Federal Emergency Management Act (FEMA) secret meetings with gravel mining proponents that are closed to the public, and documents withheld that should be public record under the current Freedom of Information Act (FOIA).

5. Current fish biologists and fish management practices need new direction and focus on best science for fish rather than current focus on harvest.

NMFS must be directed immediately to a broader common sense interpretation of the ESA. For example, a 5 percent negative to fish during a short window of construction time can result in a 95 percent or better gain to fish habitat over the long term of a positive project. The construction window is not a twelve-month calendar. It runs from approximately June 1 through September 15. We are out of the water when the fish return to spawn.

FISH FIRST has a clear focus to help return salmon and steelhead to near historical levels in quality and quantity. We know there are better proven methods than our hatcheries employ and they could be accomplished with far less revenue.

STATEMENT OF JOAN BURLINGAME, COORDINATOR, FRIENDS OF ROCK CREEK VALLEY

Senator GORTON. Joan Burlingame, from the Friends of Rock Creek Valley and Ravensdale.

Ms. BURLINGAME. My name is Joan Burlingame, and I'm representing the friends of Rock Creek Valley. The Friends of Rock Creek Valley is a newly formed community group whose purpose is to keep Rock Creek Valley a healthy place where people fish and other species to live.

The Rock Creek Valley is located in southeastern King County. Directly east of the city is Maple Valley and Black Diamond. The valley is approximately 24 square miles in size and contains two salmon-bearing creeks, Rock Creek, which drains into the Cedar River and Ravensdale Creek which drains into the Green River.

The Rock Creek Valley also is five lakes, has forests covered greater than 65 percent, and in my estimation has approximately 500 homes. Currently, there are only 300 acres preserved as watershed in the entire valley. The Rock Creek Valley provides an average of 10 million gallons a day of drinking water for the cities of Kent, Maple Valley and Covington. It also provides spawning and rearing habitat for species of fish and freshwater mussels.

The Friends of Rock Creek Valley that one of the primary challenges the residents of Washington State face is not just the threat to chinook and other species, but the challenge of helping each resident realize that change is needed for our health as well as the health of fish.

We see three primary challenges in addressing threatened species within King County; people's resistance to change, government systems that have major disconnects when it comes to protecting habitat and the need for funding.

First and foremost, people resist change; change is uncomfortable. So as we work toward bringing back Chinook, the friends of Rock Creek Valley have tried to stick to simple, clear messages on how change may actually enhance people's lives.

An example is a strong likelihood that our private wells would be metered. Too much water is being drawn from our aquifer and streams. Not only are chinook having trouble getting back upstream because the water is too low, but many of us are experiencing days that our wells are dry. Why most of us abhor the idea of monitoring, it will help ensure that each of us is taking only our fair share, thus providing us with more certainty of water in the future.

We listen as our neighbors threaten to bring out their rifles if anyone tries to monitor their well. And I personally think they're very serious. After we listen to them express their concerns over these changes and loss of what they perceived as a right, we then ask them how they would help solve the problem of too much water being drawn down. Not everybody comes down when they are presented with a request to be part of the solution, but slowly one by one people begin to work with us instead of against us.

We also don't pussy foot around the fact that these changes will cost us money. We are up front and truthful about the cost. Building long-term trust is critical to the long-term solutions.

Allowing people to realize that they need to start adjusting their family budgets, and giving them time to do so, helps decrease reactivity and opposition. We believe that this will help increase the likelihood that we can bring chinook back.

Second, our State, county, and other local governments seem to have significant communication problems. An example is that, while King County's Department of Water and Land Resources identifies Rock Creek as being the best salmon tributary in King County when they did that in 1994, in 1997, the Department of Development and Environmental Services, which is King County's building department, was not even aware of where Rock Creek was and accepted a building permit for a 57-home subdivision placed right on top of the creek.

Another example is that King County has one set of stewards for waterways and another for lakes. These staff do not seem to com-

municate very often, even though the rivers are obviously connected to the lakes.

The Friends of Rock Creek Valley believe that by encouraging communication and team work, we have a greater likelihood of bringing back chinook. An example is a trail ride we coordinated last January. To increase shared knowledge about the challenges we are facing to preserve King County's critical habitat, we've brought together diverse groups.

We took almost a third of the King County Council, department heads and other key people on a 6-mile horse ride through Rock Creek Valley. It rained an inch, by the way, during that time.

The Back Country Horsemen provided 30 horses that were basically bond-proof horses for the nonriders. Environmentalists provided information about the habitat. A logging company provided the meeting place, and developers paid for the catered breakfast and lunch. The Friends of Rock Creek Valley are continually reaching out to bring diverse groups together so we can problem solve together.

The last challenge we have is funding. The acquisition of land and water rights do not come easily, especially in an economy driven by high-tech dollars. The Friends of Rock Creek Valley are working for a long term solution to habitat preservation by developing business opportunities and maintenance and operation funding sources to ensure long-term viability. We've proposed, and King County has accepted, the development of the trail system rivaling the Appalachian Trail.

In addition to supporting the development of eco-tourism, we are working with King County to develop a foundation within the county to accept money for land acquisition and maintenance. But we are still in need of about \$5 million right now to keep key habitats from becoming subdivisions. And that's not necessarily for outright purchase. We leverage that money with transfer development rights.

The runoff from one acre of forest during a 1-inch rain storm would fill an 8x10 to a depth of about 2 feet, pave or create other impervious surfaces over the acre, and runoff would fill six offices floor to ceiling. The fast runoff of water during our winter rains leaves too little water for chinook later in the fall when they come up to spawn.

The Friends of Rock Creek Valley have had some success locally in acquisition of habitat that needs little or no restoration, but quite frankly, we have not had as good progress in this area as we've had in others.

PREPARED STATEMENT

We feel like we've already come a long way in the protection of chinook in our valley and look forward to the challenges to complete our tasks. Thank you for letting me present today.

Senator GORTON. Thank you.

[The statement follows:]

PREPARED STATEMENT OF JOAN BURLINGAME

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purpose is to help keep the Rock Creek Valley a healthy place for people, fish and other species to live.

The Rock Creek Valley is located in southeastern King County directly east of the cities of Maple Valley and Black Diamond. The valley is approximately 24 square miles in size and contains two salmon bearing creeks: Rock Creek which drains into the Cedar River and Ravensdale Creek which drains into the Green River. The Rock Creek Valley also has five lakes, has forest cover greater than 65 percent and, in my estimation, has approximately 500 homes. Currently there are only 300 acres preserved as watershed in the entire valley. Rock Creek Valley provides an average of 10 million gallons a day of drinking water for the cities of Kent, Maple Valley and Covington. It also provides spawning and rearing habitat for many species of fish and fresh water mussels.

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We see three primary challenges in addressing threatened species within King County:

- People's resistance to change,
- Governmental systems that have major disconnects when it comes to preserving habitat, and
- The need for funding.

First and foremost, people resist change. Change is uncomfortable. So as we work toward bringing back chinook, the Friends of Rock Creek have tried to stick to simple, clear messages on how change may actually enhance people's lives. An example is the strong likelihood that our personal wells will be metered. Too much water is being drawn from our aquifer and streams. Not only are chinook having trouble getting back up stream because the water level is too low, but many of us are experiencing days that our wells go dry. While most of us abhor the idea of monitoring, it will help ensure that each of us is taking only our fair share, thus providing us with more certainty of water in the future. We listen as our neighbors threaten to bring out their rifles if anyone one tries to monitor their well. After we listen to them express their concerns over these changes and loss of what they perceived as a right, we then ask how they would solve the problem of too much water being drawn. Not everyone calms down when they are presented with the request to be part of the solution, but slowly, one by one, people begin to work with us instead of against us.

We also don't try to pussy foot around the fact that these changes will cost them money. We are up-front and truthful about the costs. Building long term trust is critical to long term solutions. Allowing people to realize that they need to start adjusting their family budgets, and giving them time to do so, helps decrease reactivity and opposition. We believe that this will help increase the likelihood that we can bring chinook back.

Second, our State, County and other local governments seem to have significant communication problems. An example is that while King County's Department of Water and Land Resources identified Rock Creek as being the best salmonid tributary habitat in King County in 1994, in 1997 the Department of Development and Environmental Services (King County's building department) was not even aware of were Rock Creek was and accepted a building permit for a 57 house subdivision that was placed right on top of the creek. Another example is that King County has one set of stewards for waterways and another set for lakes. These staff do not seem to communicate very often, even though the rivers are obviously connected to the lakes. The Friends of Rock Creek Valley believe that by encouraging communication and teamwork, we will have a greater likelihood of bringing back chinook. An example is a trail ride we coordinated this last January. To increase shared knowledge about the challenges we were facing to preserve King County's critical habitat we brought diverse groups together. We took almost a third of the King County. Council, department heads and other key people on a six mile horse ride through part of the Rock Creek Valley. The Back Country Horsemen provided thirty horses, environmentalists provided information about the habitat, a logging company provided the meeting space, and developers paid for the catered breakfast and lunch. The Friends of Rock Creek Valley are continually reaching out to bring diverse groups together so that we can solve the problems together.

The last challenge we have, is funding. The acquisition of land and water rights does not come cheaply, especially in an economy driven by high tech dollars. The Friends of Rock Creek Valley are working toward a long term solution to habitat preservation by developing business opportunities and maintenance and operations funding sources to ensure long term viability. We have proposed, and King County

has accepted, the development of a trail system rivaling the Appalachian Trail. In addition to supporting the development of eco-tourism, we are working with King County to develop a foundation within the County to accept money for land acquisition and maintenance. But we need about five million dollars right now to keep key habitat from becoming subdivisions. The runoff from a one acre forest during a 1 inch rainstorm would fill an 8x10 office to a depth of about two feet. Pave or create other impervious surfaces over that acre and the runoff would fill six offices, floor to ceiling. The fast run off during our winter rains leaves too little water for chinook later in the fall when they come to spawn. The Friends of Rock Creek Valley have had some success locally in acquisition of habitat that needs little to no restoration. But quite frankly, we have not made as good of progress in this area as we have in the others.

We feel like we have already come a long way in the protection of chinook in our valley and look forward to the challenges to complete our task. Thank you for letting me present to you today.

Senator GORTON. Senator Murray has another engagement, so we'll let her go first.

Senator MURRAY. Well, thank you very much, Mr. Chairman. And let me just think of our panelists today for excellent presentations and for all the work and the insight that you've given us today.

Ms. Mackrow, I just wanted to thank you for mentioning the Northwest Straits Initiative, which Jack Metcalf have put together, and I personally want to thank—I think there's a number of people here today who have been involved in a volunteer basis moving that forward. I think it's an excellent example of how we can work in partnership to reach goals that are mutual. Even though it seems at the beginning like everybody's on different sides, when we get people together we can all work towards good common goals. And I want to thank you and everybody here who's been involved in that.

I did have just one question actually, and it goes to Ms. Mackrow too because in your testimony that you submitted to us you talked about some of the problems with the matching funds.

If you could elaborate on that for us, what some of the challenges you see and maybe some solutions for some of those counties and smaller projects and the matching funds that are required.

Ms. MACKROW. I think one of the most important things that the regional groups and the other nonprofits that I work with pride themselves on is the low overhead. I don't want to sound like I'm whining. We are good at developing matches, but we've finally figured out that the time it takes to write a \$3,000 request for funds and the time it takes to write a request for \$150,000 is the same.

So there's a lot of small funds out there that I don't have the time to pursue those funds. My board has actually suggested that we don't go for anything less than \$10,000 because it's not worth the overhead time.

And then when we have matches that are—almost all of our grants are reimbursement grants, basically I have to document all of our volunteer time to three different agencies if I have three different grants. So just right off the top, it's three times the paperwork. And that's one of the most simplest problems that we have.

And I think I also tried to explain that not being able to match Federal with Federal dollars, we lose opportunities among the agencies. If there is transportation money that is geared towards salmon restoration, and there's an opportunity to work with juveniles in the juvenile justice system, those aren't necessarily match-

able funds because they're both Federal sources. And that's the extreme. More closely we have, if the Corps and the EPA are both providing activities on a place, we might not be able to count that as match.

So those are some of the things that I think make this really hard to keep score. And locally I have taken it on to help the other people I work with try to keep score. And I have to call WDFW and say, please don't write the check for that property from this fund. And they say, well, we don't have the contract from the Federal fund yet, so we have to use it from the State fund. So now I can't match the other half of the property acquisition that the county's going to do from the same State fund.

You've heard it over and over again that this is an enormous effort, and when you have this many people involved from this many directions in this effort, we tend to step on our coat tails a little bit.

Senator MURRAY. Anybody else want to quickly comment on that issue?

Mr. KAEDING. I would certainly agree with it. I know in our situation with a nonprofit, money is spent by holding workshops on how to fill out the forms that we have to do, and that's where most of the time is spent.

I asked Lynn Polinsky with the Interagency for Outdoor Recreation how solid the contract was. I told her I didn't think that we should put our own directors' private funds in jeopardy because the way it's written, it could. And she said, well, then don't sign the contract. And I don't think that's a real good answer.

It isn't that complicated. We have hydrologists, we have managers, we have good biologists. We have been historically getting wonderful help from U.S. Fish and Wildlife and State Fish and Wildlife.

I called Rich Carlson, who we've been working with for years now, and he's helped us go out in the creek, design the project engineer the project. If we needed engineer the project. If we needed engineering, Michele Horne would work for us. We have none of that support now; we're suppose to do it all ourselves.

Mr. DICKS. Why is that?

Mr. KAEDING. Pardon me?

Mr. DICKS. Why is that? What happened with the relationship?

Mr. KAEDING. It's a good question. Thank you for asking that. Because Rich told me their funds had been cut to zero. And not only that, that his personal responsibility, which historically has been Southwestern Washington is now all of Western Washington. So evidently the funds that we're getting through the new system are funds that have been taken away from State Fish and Wildlife and U.S. Fish and Wildlife.

We had tremendous help from Washington State Fish and Wildlife with Lonnie Crumbly. He and Rich Carlson together, we were getting State funds and Federal funds. They came out and helped us with a project. If we needed design on the bridge, Michele Horne with State Fish and Wildlife would do it.

We get none of those services now, and getting the funds are a lot more complicated.

The landowner agreement that was designed by, I guess, Inter-agency for Outdoor Recreation, if a landowner signed it, he would be leaving himself wide open to liability because it said that—I can't paraphrase it exactly—that the SRF Board and the sponsoring agent, which would be, in this case, Fish First, would have the right at any time to come onto the property for inspection and to monitor the progress. I have no problem with that. But then it said, the property would also be open to any interested parties for whatever and for education purposes.

Now, if I were a landowner and had 50 kids coming out in the school bus, knowing very well one could break their leg and their parents would sue me, I wouldn't let them on my property. And no landowner in his right mind would sign that contract. It has been modified to a certain extent. But all of the legal aspects of the applications that we're getting now and we're going to class to learn how to use them and understand them, has totally an overkill from what we were accustomed to with State Fish and Wildlife and U.S. Fish and Wildlife.

Mr. DICKS. Is this through the State board—

Mr. KAEDING. Well—

Mr. DICKS [continuing]. That you're applying to?

Mr. KAEDING. We applied to the Lower Columbia Fish Recovery Board. We submitted three projects. Three projects were approved by the Salmon Funding Board, up here. So we have the money, but we don't have the biological agreements.

Along with that package then went the contract that I must sign as an executive director and also a landowner agreement. I don't plan on signing it, and I don't think the landlords will sign it. And if we lose our relationship with the landowners, who—we've lost our relationship in doing projects; it's that simple.

But the bureaucratic paperwork that's going with the money is really out of hand. I mean, it's nothing like we were working with before. In other words, we have created a bigger problem than we had before, and we were getting more work done before because the agencies that we had the money from also had people.

The volunteer services, like Lonnie Crumbly who worked for Washington Fish and Wildlife, when he retired last June, they did not replace him, and the reason is they have no funds.

Senator MURRAY. Thank you very much for your testimony.

Again, Mr. Chairman, I apologize for having to leave. I do have another hearing. And thank you for including me in this today.

Senator GORTON. Great.

Mr. King, what are the prospects for successful negotiations up there for the operation of irrigation districts this season?

Mr. KING. Well, I think they're better than maybe my testimony indicated. We're working pretty closely with the services right now, at least for Wolf Creek. We're looking at something that may—we're developing a habitat conservation plan, and in that process—which I think is a good one—it gives us a time to identify the scientists and the management strategies that seem to do the best for the fish and does some other things too.

So having embarked upon that process, we bought ourselves a little time, frankly; and, unfortunately, there's no money attached to that, and we do need some consideration for those types of plans.

They're being proposed by NMFS in particular for almost all of the Section 7 ditches up there right now, the ones that have the Federal nexus. And that's well and good, and it probably makes sense, but the truth of the matter is, there's no local capacity to do that; it takes money, an awful lot of money.

So getting back to your original question, we're hopeful to turn on. We've undertaken—even in spite of the fact that we didn't get the money we are looking for—some early improvements that should buy us some time to operate a little longer this year. We still have the potential of having target flows. Last year was a good year from a water standpoint; this year is not. It's at best an average year.

Senator GORTON. You were I thought at least partly critical of the way in which applications are dealt with by the Salmon Recovery Board. For a relatively small county or place like yours, could there be improvements, either in the Salmon Recovery Board funding process or, for that matter, the National Fish and Wildlife Foundation?

Mr. KING. Yeah. I'm a little critical in two respects. One is that the process that they had set out was not really followed. While there might have been some problems locally with the presentation of that, I'm not sure; I wasn't at the meeting when it was actually done. Nevertheless, there should have been some consideration of the bigger picture.

I don't know whether those folks realized or not when they made that decision that there was match money tied to it from the National Fish and Wildlife Foundation. Had they, they might have done something else. Because I think the way we're organized is we do have a lead entity, that being Okanogan County, who is in charge of putting together the application packages and managing the grant matching portions. And when we lost those funds, obviously other funding parts fell apart also.

So I don't know. I don't think there was any—I think next time it could be better done if there's a better understanding of how these grants are matched together because there's going to be a lot of money coming in.

And also, someone raised earlier the possibility of matching Federal. Well, there's also the possibility of getting an awful lot of help from some of the other agencies that are kind of on the fringe; NRCS, the Corps of Engineers perhaps, USGS for monitoring and those types of things.

If someone could look at the big picture when it comes to funding for—I know it's going to be done regionally. I'm not so sure it shouldn't continue to be done locally why these immediate cost needs are here. If somebody could look at that big picture and be able to articulate that in some sort of a funding strategy, I think we'd all be better off. I'm not sure I know how to do that, but I'm sure there are people who could figure it out.

Senator GORTON. Ms. Mackrow, how many people are involved in your group or groups?

Ms. MACKROW. Let's see. The best number I could come up with out of the air, I think we have 150 registered volunteers that work with us across the Olympic Peninsula, and that doesn't include the

other groups and the lead entities and the counties that also work in restoration that we partner with.

Senator GORTON. Would you give me a little bit on how the National Marine Fisheries Service permitting process has affected your group and its projects?

Ms. MACKROW. I think that they've alluded to that concept—to be really blunt, the 4(d) rule exempts culvert related activities, or it includes them in the listed limitations of recovery activities along with planting riparian zones and using large woody debris that's not anchored or cabled.

All of our projects, even though they're low land, low gradient projects—we have in the past used cable woody debris, and we do need to operate our heavy equipment in the stream. And when we're doing challenge reconfiguration we are reestablishing stream meanders, where over the years the farmers were encouraged by the Federal Government to ditch and drain their properties, we are trying to reestablish the natural stream hydrology.

Those things, while they were funded by the Salmon Recovery Funding Board, instead of culverts primarily, are not included in the limitations, so they do require biological assessments.

We have two projects that we're planning that essentially instead of getting them done this year the way we would have last year, we will probably just delay them through at least a year of permitting.

Mr. DICKS. Who's requiring the biological assessment? Is it Fish and Wildlife Service or NMFS?

Mr. KING. NMFS.

Ms. MACKROW. NMFS. And we're anticipating those BAs. We haven't actually gone in and tried to permit any of those. We're hoping that the process will smooth itself out over the summer.

Senator GORTON. It cost you a year—how much money?

Ms. MACKROW. For us the funding is—it won't cost us money at this point just this time.

Mr. KING. If I might add just for a moment—you mentioned who requires them. It turns out in our instance the Corps of Engineers actually had to do a biological assessment on a project that could have affected—so I think any place is that Federal nexus, you've got a BA that you're looking at. So you get a lot of maybe repetition.

Mr. DICKS. I want to make sure I have this clear. The State board requires a 15-percent match? Is that accurate? And the National Wildlife Foundation requires a one-to-one match?

How do the local groups—how do you come up with a one-to-one match? That must be very difficult.

Ms. MACKROW. Match it with the SRF Board money.

Mr. DICKS. You can match it with the money you get from—so how you have to do is really come up with 15 percent?

Ms. MACKROW. Right. That's if—

Mr. DICKS. And you can do in-kind?

Ms. MACKROW. We haven't applied yet for our National Fish and Wildlife money, so we've dedicated regional enhancement funds, which are dedicated Federal funds, to the regional enhancement groups as our 15-percent match for our SRF Board grants.

They have the problem where they had the National Fish and Wildlife Funds secured, but they didn't secure which would be a 50-percent State match. So they have to come up with 50 percent of their funds.

Mr. KING. And we aren't going to make it.

Ms. MACKROW. And they don't have a regional enhancement group to work with.

Mr. DICKS. And the legislature created the regional enhancement groups; is that correct?

Ms. MACKROW. Yes.

Mr. DICKS. And you're one of—

Ms. MACKROW. One of 12.

Mr. DICKS. So if we could get this straightened out a little bit, coordinated, because you have the legislature doing one thing, Congress doing another thing. It sounds like Ruckelshaus was right about needing a coordinator—

Mr. KING. I agree.

Mr. DICKS [continuing]. To pull all this together. We've got so many different programs.

Yes?

Ms. BURLINGAME. If I may say, it has been a challenge to try to raise the 50 percent. And I do want to say that the city of Seattle—

Mr. DICKS. Now who requires 50 percent?

Ms. BURLINGAME. Well, it's in the grants, the National Marine Fisheries. We just filled out an application.

One of the things that King County and the city of Seattle has assisted us in, is that they have set up what's called transfer development rights. And so the city of Seattle has identified some parts within the city, and also the city of Kent, to allow extra density.

So in other words, if you're building an apartment, and you were to buy the building rights for a building in the rural area and pay the property owner \$20,000, then you could add up to three stories onto your apartment building. And so that has helped us secure some funding to do some of the matches.

Mr. DICKS. Jim.

Mr. KING. One more point. You know, most of these projects are multi-year and grant cycles are typically 1 year, and that make it more difficult to match also.

If you could look at a work program that was designed maybe for a particular—maybe restoration of stream flow, for example, on a multi-year basis, that will give the locals an opportunity to leverage as much money as they possibly could and maybe make the expenditures more efficient.

Mr. DICKS. OK. Well, I saw what you were doing at Chimacum Creek, and the work there is very good. And I just urge you all to hang in there, and we'll try to see what we can do to straighten out some of these regulatory problems.

And I regret what's happened, Jack, to you all, not having the Fish and Wildlife Service coordination. I'm definitely going to check into that and see if we can't do something about that.

Mr. KAEDING. Appreciate it. Thank you.

Senator GORTON. Thank you very much for your very real contributions to us. We appreciate them.

STATEMENT OF JAMES WALDO, LEAD FACILITATOR, HATCHERY SCIENTIFIC REVIEW GROUP

Senator GORTON. Panel 3 is on hatcheries, and if the group in that panel will move forward, we appreciate it.

We will start the hatchery group with the facilitator of the reform effort, Jim Waldo.

Mr. WALDO. Mr. Chairman, Congressman Inslee. I have prepared some written testimony.

Senator GORTON. The written testimony that each of you have submitted will be included in the record. So summarize it, and please get close enough to those microphones so people in the back of the room can hear you.

Mr. WALDO. Mr. Chairman, I would first like to echo and reinforce the comments that Bill Ruckelshaus made about both the progress that has been made and the need to pull a lot of these promising individual efforts into kind of a shared strategy as the next step here in Puget Sound. And I have some comments about that in my testimony, but I'm not going to cover them. You've heard them today, and I think he articulated the need very well.

I want to move to the specific issue then of all the areas that are going to be affected and have to change. One of them is in the area of hatchery reform.

There are approximately 100 hatchery facilities in Puget Sound and the Washington coast that have somewhere between 300 and 350 different programs that operate out of those facilities. Many of them were built in a different era with a different concept as to what we were to manage and how we were to manage the resource. They were built at a time when the general belief was, that if you built them larger and released more fish, you would automatically receive more benefits.

They were operated in a time early in their history when it was believed you could move stocks from one basin to another; that the quality of the receiving waters was not particularly relevant to the success of a hatchery facility.

Since that time, we've learned a lot. And we've learned that quantity in and of itself is not a key to success. We've learned that the quality of the receiving habitat and the biological factors that the hatchery fish are going to be introduced to will make a substantial difference.

Perhaps the biggest change, as a result of the Endangered Species Act, is that we have now decided we're going to manage for different outcomes. Whereas at one, let's say 20 years ago, people basically said, we've got little or nothing left to this run. We'll put a hatchery in, and if the run goes extinct, that's an acceptable trade off as far as society's concerned for increased fishing opportunity. It wasn't that people didn't know what they were doing; they made a different set of trade offs.

Society today has said we're no longer going to make those trade offs; that we are going to manage to rebuild a lot of these wild runs, and so we have a new context in which we're operating.

Fortunately, Congress last year, through the leadership of a number of you up in the podium, decided to be a catalyst on this issue. So I have really three messages today.

The first one is that the direction that you provided last year and the resources that you provided are already having a significant impact. The State and the tribes in Puget Sound and the coast will have plans for all 100 facilities, including all programs that bear on chinook as to how they're to be in ESA compliance.

Those plans will include, in essence, a conceptual framework that NMFS has developed in collaboration with the State and the tribes. The initial drafts of those plans will be completed in June of this year and ultimately will be incorporated in a biological opinion.

I can assure you that without the resources you provided last year for the State and tribal scientific teams, this would not have occurred; it would not have been possible. And this is a substantial step forward in Puget Sound's efforts to come into compliance with the Endangered Species Act.

Second, probably by the end of this year or early next year, the State and tribes will have cooperatively developed a new database that will have information on every hatchery facility and all the programs in those hatchery facilities regardless of who manages them, and anyone will be able to access that information system.

This has not existed in the past in Puget Sound or in the Pacific Northwest, and it would not have occurred but for the funds that you all provided last year to enable this kind of an intricate data system to be developed. And it will give us the information base for being able to evaluate and make decisions about these facilities and the performance of these facilities in the future.

The third thing you did, and I think perhaps the most important in the long-term, was to create an independent scientific review group, made up of nine scientists, who have been charged to come with an approach for how we will bring science to bear on making these decisions in the long-term.

It's been my honor as part of a facilitation team through Long Live the Kings to work with this group of scientists, and I have been absolutely impressed with the quality of their background and their judgment and their focus on having an impact on these issues and having an impact in a very short period of time.

It's their goal to have a framework put together on how to organize all of the scientific knowledge we have regarding hatchery fish, regarding how hatchery techniques can be used to help conserve and rebuild wildstocks, and about what are the risks of employing these tools; and to have that framework together by the fall of this year so that the information being gathered by the managers can be applied against that framework, and we can be in a position to start making long-term judgments.

The final thing that I wanted to report on, and I'm sure my colleagues here will speak to in more detail, is the scientists have met with the managers—tribal, State, and Federal—and NMFS as the ESA agency, and basically they have begun to develop an implementation program for how we will get through the first phase of ESA compliance and then move on to the more challenging task of saying, how do we reposition Puget Sound with the use of hatcheries, either to assist in recovery in conservation of genetic stocks or in providing sustainable fisheries that do not harm ESA listed stocks, and to be able to provide a context for us to be able through the next 10 to 30 or 40 years not just with the legacy of what we

had from the past, but what would we want to do in the future knowing what we know today and given what we want to manage for.

I think you should take great pride in what you've accomplished by virtue of your legislation last year. There's no doubt in my mind this would not have happened without the impetus of the legislation, without the funding of the legislation and without the direction to create this effort.

The response of the managers has been a wholehearted embrace of this approach, and from what I have seen so far you could not ask for a better response, both individually and in their commitment to cooperate at the State, Federal, and tribal level.

PREPARED STATEMENT

I believe that within the next year or two, if this effort is sustained, that it will achieve the promise that you hoped for when you passed this legislation, and you will be able to take some real satisfaction in which you have helped cause to occur. Thank you very much.

[The statement follows:]

PREPARED STATEMENT OF JAMES WALDO

Mr. Chairman, I wish to thank the Committee for your continuing interest in our salmon resources of the West Coast, and the support you are providing to improve those resources. My name is Jim Waldo. I am a partner at Gordon Thomas Honeywell, and serve as the lead facilitator of the Hatchery Scientific Review Group (HSRG). This group is charged with reviewing hatchery operations and practices in the Puget Sound and coastal waters of Washington State. Based on the best available science, this group will make recommendations to the hatchery managers on how hatcheries can be repositioned in the future to provide for a sustainable fishery and help to restore naturally spawning salmon runs. In addition to the HSRG, I am working with Long Live the Kings to facilitate discussions among the co-managers and develop an outreach and communications plan to build support for hatchery reform.

As a young boy, I remember climbing into the family station wagon with my parents, brother and one of my grandfathers to head for different fishing towns on the Coast, the Straits, and Puget Sound. Early the next morning, in pre-dawn light, we headed out bundled up in parkas and rain gear. As the sun came up our lines stretched in the gray water. Suddenly, the tip of a rod would bounce and then take a deep bend towards the water. Salmon on. What a thrill!

At the end of a day or two of fishing we would return home with a full fish box. Family cook-outs, community picnics, and gifts of salmon to neighbors who couldn't fish would highlight the next week. Several weeks later, the cycle would occur again, throughout the summer and early fall.

Just as I fished with my grandfather and my parents, my children have gone fishing with their grandparents and their parents. They have had the thrill of matching skills with the powerful adult salmon. They have also had the fun and pride of bringing salmon home, which served to bring together and feed family and friends.

This is a way of life that has existed for hundreds, if not thousands of years. It remains central to the Native American communities around Puget Sound and the Coast. It has been an important thread for many other families who have arrived and stayed over the last hundred years.

The salmon are a source of food, income, enjoyment and provide a sense of community. It is one of our great challenges to secure the future of the salmon at the same time as we secure the future of this prosperous and vibrant region of the United States for current and future generations. Accomplishing either would be a serious undertaking. Accomplishing both simultaneously presents one of the major challenges of our times. In Washington State and the West Coast, we are engaged in a mighty effort to reconstitute how we conduct our affairs to achieve these goals. Because the salmon's range is so vast, there is almost no aspect of our geography, waters or society which will not be affected in some manner.

I am going to speak today about one of the areas that will see major changes: salmon hatcheries.

There are 100 hatchery programs in the Puget Sound and on the Washington Coast. Many of these hatcheries have been in existence for decades. They were built and placed into operation in a different era, with different values that led to a different fisheries management system. Hatcheries were seen as a way to offset losses in the number of wild salmon. The general beliefs were that the larger the hatcheries the better; the larger the number of fish released the better; and the impacts on those particular wild or native runs were an acceptable price to pay for the benefits of a larger fishery. It was believed that stocks could easily be moved between basins and that the hatchery operations could compensate or more than off-set limitations in the receiving habitat.

Our society has recently determined that those "remnant runs" of wild stocks should be protected (ESA listings). We have also learned that simply releasing large numbers of juvenile salmon does not guarantee large returns. We have learned that the genetics of salmon, their adaption to particular watersheds, and the quality of the receiving habitat are very important to their long-term fitness and survival.

Fortunately, this Committee and the Congress became a catalyst last year for accelerating action on this issue. As a result, a number of very important actions are underway.

By this summer the state of Washington, the Tribes of Puget Sound and the Washington Coast, and the U.S. Fish and Wildlife Service will have developed proposals for how each of the hatchery programs in this area will be in compliance with the ESA. These proposals will be reviewed by the National Marine Fisheries Service and incorporated in a Biological Opinion.

The consensus among fish management agencies and Tribes is that changes resulting from these plans will significantly improve hatchery operations for listed salmon stocks. This will be a major step forward. The state of Washington and the Northwest Indian Fisheries Commission are also using some of the funds provided by you to develop and implement a joint software data-base system for all of the hatcheries in this area. This is another major step forward.

The next major step forward has been the creation of an independent science team, the HSRG, to ensure that the best available scientific information is utilized in making these decisions. The independent scientists were nominated by the American Fisheries Society. They have been selected and the scientific effort is underway.

The nine scientists serving on the HSRG have a broad range of experience. Their scientific disciplines range from biology, genetics, ecology, fisheries, hydrology, river geomorphology and other disciplines. Members include:

- Dr. Trevor Evelyn, formerly with the University of British Columbia, and an expert on fish health;
- Dr. Lars Moberg, of Moberg Biometrics, and an expert in ecosystem planning and natural resource management;
- Robert Piper, formerly with the U.S. Fish and Wildlife Service in Bozeman, Montana, and an expert in hatchery biology and management;
- Lisa Seeb, with the Alaska Department of Fish and Game, and an expert on fish genetics;
- Dr. William Smoker, with the University of Alaska, and a biologist with expertise in conservation and artificial culture;
- Lee Blankenship, a Senior Research Scientist at the Washington Dept. of Fish and Wildlife, and an expert in fish identification and harvest management applications;
- Dr. Donald Campton, with the U.S. Fish & Wildlife Service, and an expert in fisheries and genetics;
- Dr. Conrad Mahnken, Director, Manchester Research Station, National Marine Fisheries Service, and an expert in biology and oceanography;
- John Barr, Nisqually Indian Tribe, with expertise in salmon culture, artificial production programming, and hatchery operations.

The HSRG has now begun work. In their first two months, they have decided on their initial research priorities and awarded the initial research grants.

They have established an approach to gathering, organizing and using existing scientific knowledge and information. They have held meetings with representatives of the Washington Department of Fish and Wildlife, the Northwest Indian Fisheries Commission, and the National Marine Fisheries Service to establish appropriate roles and working relationships.

Finally, they are completing development of a proposed course of action for implementing the assignments that Congress has given them.

I have had the honor of working with these nine scientists in a very intensive setting. These are intelligent, honorable people with good judgment, valuable experience, and a commitment to having science contribute to good informed decisions.

The HSRG is hard at work preparing its initial report to Congress this June and a work plan for the next year which will be critical to the success of this effort.

You have created and funded this group. I have every reason to believe that you will be proud of the results. The representatives of the fisheries interests present today, I'm sure, will speak to their views of the importance of this effort.

Finally, as I mentioned earlier, the Congressional legislation which originated in this Committee has been a catalyst for bringing scientists, managers and Endangered Species Act regulators together around hatchery reform in a way that would not otherwise have happened.

The result will be to reposition hatcheries to become an active agent in helping to conserve and recover wild stocks and to contribute to sustainable fisheries. The results will be significant and long-lasting.

As someone who plans on going salmon fishing with my grandchildren, I wish to say thank you for all that you have done and will continue to do.

**STATEMENT OF PETER BERGMAN, DIRECTOR, BIOLOGICAL SERVICES,
NORTHWEST MARINE TECHNOLOGY**

Senator GORTON. Thank you, Pete Bergman.

Dr. BERGMAN. Mr. Chairman, committee members, I thought I should briefly explain who I am.

I work for a private company, Northwest Marine Technology, but for 7 years I was chief of salmon management for the State and I was a member of the Snake River Salmon Recovery Team, which was the first endangered species listing by NMFS.

Anyway, more directly relevant to this hearing, I was chair of a group of scientists appointed by Senator Gorton to advise him on hatchery reform. There were seven of them, and they represented—or more precisely, they were members from all of the fish agencies in the Puget Sound and coastal region, the region we're addressing here; that is, the State, the tribes, the National Marine Fisheries Service and U.S. Fish and Wildlife Service.

Anyway, the problem that we were confronted with was the fact that hatcheries are listed as one of the 4H's that have undermined the wildstocks. You could just look at this and say, well, we know that the natural stocks are in real trouble, and there will not be fisheries on them for the foreseeable future. So if we're going to have fisheries, they're going to have to come from hatcheries.

So the question that you essentially posed to our group was, is it possible to take hatcheries and to make them support the recovery of natural stocks or at least not undermine it, and at the same time provide fisheries?

So we spent the large part of a year studying that, and we came up with a consensus statement. We agreed that that could be done, but only under certain circumstances. And those circumstances meant that you'd have to change the way that you did things in the past.

I'm not going to go into a lot of detail about that. But included in these kind of changes—Jim mentioned some things relating to that—you have to have new genetic policies. You just can't do things the way they did. And there's going to have to be less interaction, less physical direct interaction between hatchery stocks and natural stocks. And probably the fisheries themselves will have to be modified.

Anyway, we recommended a budget of \$3.6 million to begin this reform, and Senator Gorton concurred. And with the great support

of Congressman Dicks and others, the Congress provided the money.

I mentioned that the goals have to change, and I want to emphasize something that Jim brought up. And I want to say, very poignantly, the real problem with hatchery management in the past has been that the decisions were not based on science. I mean, some were, but by and large, they were not objective. And I think for those who have familiarity with hatcheries in the past, they realize that the public supported hatcheries just emotionally, and to the point where if you wanted to close a hatchery somewhere, you had some real problems.

So essentially what I'm saying—and it's not just what I'm saying; it's what our group said, and I think there were four other scientific problem that looked at the problem and said, you know, these hatcheries just have not been evaluated. They're simply running fundamentally on emotion, and that's got to change.

Now recently, we've had a kind of different slant on this whole thing. We've had what we call hatchery bashing. We've had lots of people coming out, some fairly important people, and writing big articles and saying hatcheries are no good, and that they're really big bad things. And, of course, they emphasized this undermining of the natural stock thing.

The perspective of our group is that this hatchery bashing, by and large, is equivalent to what was happening in the past; it's based on emotion and not good scientific foundation.

So at any rate, the core of our recommendation to you was that hatchery management needed to be changed to a scientific basis. And at the beginning of this year—Jim was talking about this in some depth—a nine-man scientific panel was appointed, and I think it's worthwhile taking a minute and talking about what the make-up is so you understand.

In my opinion, this is a true, blue ribbon scientific panel. There are nine members. Five of those members are independent; they do not work for the local agencies. And they were provided by a list provided by the past presidents of the American Fisheries Society. So they went through and decided who met the criteria and who were the top ranked folks, so five people were selected from that group.

Senator GORTON. From here or from around the country?

Dr. BERGMAN. From all around the country, and one from Canada and two from Alaska.

The other part of that problem was though, of course, you may get the world's greatest scientist, but if the agencies who run the hatcheries don't buy in, you've got a problem.

So our judgment was that the agencies needed to have a part of this science. So in addition to the five really independent scientists, there are four scientists, one from each of the agencies, and I'm talking about the tribes as an agency in this particular case. But the requirements for these agency scientists was, No. 1, they need to be highly qualified; and No. 2, they don't represent the policies of the agency. Their purpose in being on this panel is to make sure that there's communication and that the people really understand what's going on in the agencies. I had the impression that this was a really good mix.

Anyway, these folks are hard at work. Once again, I'm repeating a little bit of what Jim says, but I'll say it. They've been defining the problems, what are the problems, they've been generating workplans, and they've been determining what science is needed, what science should we jump on and learn about.

PREPARED STATEMENT

Anyway, I guess my whole view of this whole thing is that these guys are really working hard, and I think they're extremely effective. And frankly, one of the things that's different that I've not been involved with before in these kinds of things is that they're getting support. They're not just a bunch of scientists out on their own trying to figure out how to make things work; they've got the support of Jim Waldo and of Long Live the Kings, which has been truly superb. And you're going to hear, I'm sure, from our fellow panelists more about this.

In any rate, this group will report its progress to the Congress in June. Thank you.

[The statement follows:]

PREPARED STATEMENT OF PETER BERGMAN

Mr. Chairman, members of the Committee. My name is Peter Bergman. I am Director of Biological Services for a private company, Northwest marine Technology. I was chief of salmon harvest management, research, and hatcheries for seven years prior to my retirement from the Washington Department of Fisheries. I was a member of the Snake River Salmon Recovery Team, appointed by the National Marine Fisheries Service when the first Northwest salmon were listed under the Endangered Species Act.

Directly relevant to this hearing, I was chair of a group of scientists appointed in 1998 by Senator Gorton to advise him on salmon hatchery reform in Puget Sound and Coastal Washington. The seven-person team had members from all of the fish agencies of the Region—the State, Tribes, National Marine Fisheries service, and the U.S. Fish and Wildlife Service.

The problem we examined was criticism of hatcheries as one of the four H's responsible for depletion of natural salmon stocks. A question was could these hatcheries be managed to support and not undermine wild stock recovery? Also, it was evident that natural stocks would not support fisheries in the foreseeable future. Could hatchery stocks be fished without significant injury to wild stocks?

Our consensus decision was both goals could be achieved if we manage hatcheries differently. This will involve changes in genetic policies and reducing physical interactions between hatchery and wild fish, and probably some modification of fisheries.

We recommended a budget of \$3.6 million to begin the reform. Senator Gorton concurred, and with the support of Congressman Dicks the money was provided. At this time, the proposed mechanisms for reform are well underway.

Fundamentally, hatcheries in the past were managed for different goals than now required, and management decisions were too frequently based on unmeasured assumptions. Hatcheries have enjoyed public support irrespective of their effectiveness, but recently there has been considerable criticism. Our view is this "hatchery bashing" is typically based on emotion rather than facts. However, the purpose of this effort is not to debate the problems of the past but to make hatcheries work as well as they can for their newly-defined purposes. Our conclusion is a basic problem has been failure to base decisions on scientific information, and independent scientific review is essential to achieving these goals.

We have established a blue-ribbon "Hatchery Scientific Review Group" (HSRG) for this purpose. It is composed of five independent scientists, who do not work for the fish management agencies, and four qualified scientists from the agencies involved. The independent scientists were selected from a list supplied by the Past President's Council of the American Fisheries Society. We felt it was important to also have agency scientists on this panel because buy-in by those actually running the hatcheries is critical.

The HSRG was established early this year and has made significant progress in defining what will be done, generating a work plan, and determining critical scientific information needed. It will report on its progress to Congress in June.

STATEMENT OF BILLY FRANK, CHAIRMAN, NORTHWEST INDIAN FISHERIES COMMISSION

Senator GORTON. Thank you, Billy Frank.

Mr. FRANK. Thank you, Senator, Mr. Chairman and Congressman Dicks and Congressman Inslee.

As you know, Mr. Chairman, I've been here a long time.

Senator GORTON. You're not going anywhere, are you?

Mr. FRANK. No, I'm not going anywhere.

I want to mention for a second our leader that we lost last Sunday, Joe De La Cruz, the past president that brought people together. That was a big loss for all of us in our northwest.

But anyhow, I want to thank you, Senator Gorton, for the hatchery reform. I've been sitting out here all of these years watching the hatcheries, and nobody wanted to touch them. And it's a very big part of salmon recovery in our State and throughout the northwest and along the Pacific Coast.

We put a team together, and it's a team of experts, credible people that can look at all of the watersheds and how do we fit in a watershed, how do the hatcheries fit in a watershed. And I look at the Nisqually watershed where I was born and raised and managed Nisqually watershed. And in that watershed we have steelhead wild, chum salmon and wild winter fishery, and we have pink salmon wild. We have coho that's artificial and chinook that's artificial. Well, or hatchery on the Nisqually has chinook and coho as hatchery stock. And we protect the wildstock.

Now, watersheds are very complex, and it's hard to understand what you're talking about when you talk about hatchery. "Oh, them people off the Nisqually River are fishing again. What are they fishing on?" Well, we're fishing on hatchery stock.

If you took away all the hatcheries today, there would not be any more fish. There would not be any more fish for maybe 50 or 100 years because the wildstock are in such disarray that we have a lot of work, a lot of healing to do, a lot of bringing people together on the watersheds and working together. And the hatchery reform is a forum that's going to do exactly that.

It's not going to solve everything. Everything has to be connected in this. The puzzle is big, and hatchery reform is part of that puzzle. And certainly, it will bring a lot of credibility to what we're doing and telling the story about hatcheries and wildstock, how they have to work together to bring the salmon back to the northwest. And that's going to take 50 to 100 years to do that.

So we have a long time to be together, all of us. And everyone that you heard in this room, a very positive hearing. And it's talking about us. It isn't talking about them or anybody; it's talking about all of us.

And one of the things that we always sit and wait for is a breath of fresh air. And we always wait for the sun to shine and the opportunities with the stars to line up, so we can go for whatever we're doing out here in salmon recovery. And I think that the stars are lining up, and we've got to work together to make it happen. Everyone has to be part of this. We can't leave anybody out.

They've all got to be part of this recovery initiative that we're making; the President, the Congress, our local governments, our State, our tribes, our Federal Government. We have to work together.

We don't all agree on everything, but we're in a debate and we're in a forum that we can get to the next step, and that's very important that we all do that. And I commend you for bringing us together today and making it happen. I commend Patty Murray for being here, our Senator and Congressman Dicks and Representative Inslee, to take part and take time out in your life and listen. And listening is very important because we have to have a lot of patience when we listen, and listen and try to get to the next step that we want to take together.

As we finish the watersheds, we have to move out into the estuary. And it's no big thing to talk about what salmon needs. The salmon needs clean water. You don't have to be a rocket scientist to figure this out. And they need an estuary. As they come down the watershed and into the salt water, they have to make that transition. Well, they need that estuary out there to protect them along the shoreline.

We need flounders for the food chain. When I was a little kid off the mouth of the Nisqually River, we fished flounders out there, waited for them, and picked them up and threw the little ones away, and then we cooked them on the beach. They're gone. There's no more there. And Nisqually is one of the estuaries that we're proud of. We're all working together to put it back.

And sand dollars. You've seen sand dollars, all of us. There's no more. Thousands of them along the beaches, millions of them—they're gone. They're part of that food chain that we talk about.

PREPARED STATEMENT

So when we leave the watersheds, and we straighten all these up—and we will do that, working together—we've got to move out into the estuaries and then move out into the ocean, and we have to heal the ocean and heal our bays and heal our shoreline. And so this forum, this hearing today, has taken us that direction. So thank you.

Senator GORTON. Thank you.

[The statement follows:]

PREPARED STATEMENT OF BILLY FRANK

This is a time of great change in the management of the salmon resource in the State of Washington. Listings of several local salmon stocks under the Endangered Species Act have required us to re-examine many of our approaches to the way we manage salmon.

Our use of hatcheries is one example. Today, the tribes, as well as State and Federal agencies, are looking at salmon hatcheries in new ways.

Once viewed by many simply as "factories" for producing salmon, now we are reforming hatchery practices to help recover and conserve wild salmon populations while providing sustainable fisheries for Indian and non-Indian fishermen. It's just one of the many efforts by the treaty Indian tribes in western Washington in the battle for wild salmon recovery.

While the tribes have made efforts over the past decade to reduce impacts of hatcheries on wild salmon stocks—such as carefully timing releases of young hatchery salmon into rivers to avoid competition for food and habitat with young wild salmon—a lack of funding has prevented the tribes from applying a comprehensive, systematic approach to hatchery reform.

Now, thanks to the efforts of Washington's congressional delegation—most notably Senator Gorton and Representative Dicks—the treaty tribes, Washington Department of Wildlife, U.S. Fish and Wildlife Service and National Marine Fisheries Service will share \$3.6 million this year to conduct much-needed research, monitoring and evaluation of hatchery practices at the approximately 150 tribal, State and Federal hatchery facilities in western Washington. Continued funding for this effort will be critical to its overall success.

Federal legislation has created an independent Hatchery Scientific Review Group to provide scientific oversight for tribal, State and Federal hatchery practices reform and to provide recommendations for implementation of scientific goals and strategies. A top priority of the tribal and State co-managers under the hatchery reform initiative will be to complete Hatchery Genetic Management Plans for each species at each hatchery on Puget Sound. The plans, due in late June, will provide a picture of how stocks and hatcheries should be managed, and will serve as a tool for implementing hatchery reform. The plans are especially important in light of efforts to respond to ESA listings of Puget Sound chinook and other salmon species in western Washington. In fact, the National Marine Fisheries Service is expected to rely on these plans for its decisions on whether hatchery practices could constitute a "take" of salmonids listed under the ESA.

Already, some salmon enhancement facilities have been switched from producing hatchery fish to restoring wild fish through broodstocking and supplementation. Through these programs, wild salmon are captured and spawned at a hatchery. Their offspring are then reared in the facility and later released in various locations within the watershed to increase their chances for survival. Such efforts help preserve and rebuild wild salmon runs that might otherwise disappear.

Hatchery reform is part of an integrated strategy for salmon recovery.

The tribal and State co-managers are responding to declining wild salmon populations through improved planning processes like Comprehensive Coho and Comprehensive Puget Sound Chinook, which seek to protect and restore adequate freshwater habitat and to ensure that enough adult salmon reach the spawning grounds to recover the stocks. The goal is to restore the productivity and diversity of wild salmon stocks from Puget Sound and the Washington coast to levels that can support treaty and non-treaty fisheries. As part of the effort, recovery goals and comprehensive recovery plans are being developed for all salmon species in western Washington. Specific recovery plans are being developed for each watershed to guide how harvest, habitat and hatcheries will be managed.

The treaty Indian tribes in western Washington already have made significant harvest reductions to protect weak wild stocks. In fact, over the past 25 years, treaty tribal salmon harvests have been reduced by more than 80 percent. This has come at a great cost to the spiritual, cultural and economic well-being of the tribes.

For 2000, the tribes are planning conservative fisheries that are more restrictive than last year in order to protect weak wild salmon stocks, especially coho. While recognizing there are some strong hatchery chinook returns expected, tribal fisheries will be designed to contribute to the rebuilding of Puget Sound chinook, which have been listed as threatened under the Endangered Species Act.

All of these steps will have little effect, however, if there are no similar efforts to protect salmon habitat. Lost and damaged salmon habitat has been, and continues to be, the main reason for the decline of wild salmon.

We are confident, however, that by working together—all of us—we can achieve our goal of returning wild salmon stocks to abundance. Reforming hatchery practices is another step on the road to wild salmon recovery.

STATEMENT OF JEFF KOENINGS, DIRECTOR, WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

Senator GORTON. Jeff Koenings.

Mr. KOENINGS. Thank you, Mr. Chairman and members of the committee. I do appreciate the opportunity to testify here today on a very important topic of hatchery reform in the State of Washington.

It is my opinion that Washington's hatcheries, its system, designed and operated to provide for the recovery of wildstocks and for sustainable harvest by citizens, needs to remain viable. Why? Well, one example is that, 80 percent chinook and coho harvested this year in Puget Sound will be of hatchery origin.

I think most of us here would agree that our hatcheries originally were designed and operated as fish production facilities, both for recreational and commercial fisheries. In recent years, however, as we have increasingly focused on ways to conserve wildfish, we have altered our view of how we conduct both our fisheries and our hatchery operations. Not only have the co-managers on one side and our stakeholders on the other adopted new fishery regulations to protect wild runs, we've come to use hatcheries to help restore wild runs.

Despite this shift, our approach to repositioning hatcheries has not been consistent. Hatchery operators—State, tribal, and Federal—have lacked a cohesive strategy largely because we have lacked the resources to implement any strategy.

As I said before, many hatcheries were built to mitigate for lost habitat. Their mission was to produce as many adult salmon as possible. Now, however, the fisheries they supported have had to be substantially reduced because the ESA has constrained harvest practices. And with the downscaled fishing effort, our hatcheries and habitat cannot support the large numbers of fish returning to some hatcheries.

Senator GORTON. Say that again.

Mr. KOENINGS. Pardon?

Senator GORTON. You can't do what?

Mr. KOENINGS. With the downscaled fishing effort, our hatcheries and habitat cannot support the large numbers of fish returning to some hatcheries. We've had to re-tool our fisheries—we're in the process of doing that—because we've had to scale them down from what they used to be to what they are now. Our hatcheries have continued to produce fish, and our fisheries can't catch all the fish in some cases that are coming back. So that gets into realigning our hatchery practices and fisheries, which we're in the process of doing.

In order to use these fish for egg-takes, food banks and other uses, these fish have been killed. Realigning the production of fish at hatcheries to reflect a present day effort is one way of reducing the need to sacrifice fish weirs, professionally known as clubbing.

A few decades ago, my department had one hatchery involved in the wildstock recovery efforts. Today, approximately a third of the 90 hatcheries the department operates are used in wildfish recoveries. Despite these ongoing changes, many of our hatcheries are operated in a way inconsistent with the recovery of wildfish. Some of our hatcheries have built-in deficiencies that pose obstacles to spawning salmon, some impede upstream migration, others are in the dire need of physical improvements, and still others require different broodstocks.

As co-managers of the State's fisheries resources, my department and the tribes are committed to working together as partners, and we are committed to a single vision for our hatcheries, to help recover and conserve wildfish population and to provide sustainable fisheries.

Just as we are committed to this joint vision, the department is committed to the historic effort now underway to achieve the comprehensive repositioning of hatchery operations in Puget Sound and Western Washington. This collaborative effort is the primary

effort by which Washington State can address ESA compliance issues for its hatcheries, and it's absolutely critical if we are to avoid the unsatisfactory patchwork approaches of the past and achieve true hatchery reform.

The funds attained by Senator Gorton and Congressman Dicks and others are the primary means by which Washington State is addressing the repositioning of hatcheries to address ESA requirements and still provide for tribal and nontribal fishing opportunities. The foundation of this reform will come from the recently formed Hatchery Scientific Review Group that was mentioned earlier.

This independent group, charged with reviewing current processes and policies and identifying the scientific needs of hatchery reform is essential, and it is critical that the findings of the Hatchery Scientific Review Group are adopted not only by the co-managers, but also by the appropriate Federal agencies.

Bottom line. No matter how good our intentions, no matter how good our science and ability to implement it, the end result will be determined by our resources. Aside the Federal appropriation earmarked this year for hatchery reform, State leaders also recently appropriated funds for hatchery reform. As one example of the interest of such a leader, we have Representative Regula in the audience here today. Activities carried out using these funds have been folded into and coordinated with those now being carried out with Federal monies.

Finally, we have also presented the concept of the Hatchery Science Review Group's task to the combined leadership of the State House and Senate. Just as salmon recovery efforts now underway in Washington State must be science-driven and carried out in a collaborative way, so must hatchery reform.

PREPARED STATEMENT

In my opinion, the reform process put in place under the direction of Senator Gorton and Congressman Dicks and others accomplishes both these goals. The Department of Fish and Wildlife, along with our tribal co-managers, look forward to participating in this effort and making it become a reality. Thank you very much.
[The statement follows:]

PREPARED STATEMENT OF JEFF KOENINGS

Thank you Mr. Chairman and members of the committee. I appreciate the opportunity to testify today on this very important topic.

It is my opinion that Washington State's hatcheries, designed and operated to provide for the recovery of wild stocks and for sustainable harvest by citizens, should remain viable.

I think most of us here would agree that our hatcheries originally were designed and operated as fish production facilities for recreational and commercial fisheries.

In recent years, however, as we have increasingly focused on ways to conserve wild fish, we have altered our view of how we conduct our fisheries and hatchery operations. Not only have we adopted new fisheries regulations to protect wild runs, we've come to use hatcheries to help restore wild runs.

Despite this shift, our approach to repositioning hatcheries has not been consistent. Hatchery operators—State, tribal, and Federal—have lacked a cohesive strategy, largely because we have lacked the resources. In many instances, changes in hatchery operations have failed to keep pace with changes in fisheries and the environment. Consider this example:

Many hatcheries were built to mitigate for lost habitat. Their mission was to produce as many adult salmon as possible. Now, however, the fisheries they supported are gone because the ESA has constrained harvest practices. And with a downscaled fishing effort, our hatcheries and habitat cannot support the large numbers of fish returning to some hatcheries. In order to use these fish for egg-takes, food banks and other uses, these fish have been killed. Realigning the production of fish at hatcheries to reflect the present-day effort is one way of reducing the need to sacrifice fish at hatchery weirs.

The scientific framework for hatchery operations began in the 1980s when the Washington Department of Fish and Wildlife put in place comprehensive guidelines designed to prevent the spread of pathogens from hatchery to wild fish, minimize adverse genetic impacts and decrease competition between hatchery and wild fish for habitat.

These changes occurred about the same time as the role of hatcheries themselves began to evolve. Two decades ago, my department had one hatchery involved in wild stock recovery efforts. Today, approximately a third of the 90 hatcheries the department operates are used in wild fish recovery.

Despite these changes, many of hatcheries are operated in a way inconsistent with the recovery of wild fish. Some of our hatcheries have built-in deficiencies that pose obstacles to spawning salmon. Some impede upstream migration; others are in dire need of physical improvements; still others require different broodstocks.

In addition to the challenges, our science has outpaced our ability to respond. Complex genetic and other issues have not been adequately addressed. Endangered Species Act listings have taken these scientific challenges to new levels of complexity and urgency. The funds obtained by Senator Gorton and Congressman Dicks are the primary means by which Washington State is addressing the repositioning of hatcheries to address ESA requirements.

As co-managers of the State's fisheries resources, my department and the tribes are committed to working together as partners. And we are committed to a single vision for our hatcheries: to help recover and conserve wild fish populations, and to provide sustainable fisheries.

Just as we are committed to this vision, the department is committed to the historic effort now underway to achieve the comprehensive repositioning of hatchery operations in Puget Sound and western Washington. This collaborative effort is the primary effort by which Washington State can address ESA compliance issues, and is absolutely critical if we are to avoid the unsatisfactory, patchwork approaches of the past and achieve true hatchery reform.

The foundation for this reform should come from the recently-formed Hatchery Scientific Review Group. This independent group, charged with reviewing current processes and policies and identifying the scientific needs of hatchery reform is essential. And it is critical that the findings of the hatchery scientific review group are adopted by the co-managers and appropriate Federal agencies.

With resources already appropriated under this effort, my department and the Scientific Review Group are discussing how to put in place performance objectives and make critical improvements at our hatcheries. The department is also continuing its work on its Hatchery Genetic Management Plans required under the ESA by NMFS so they can be used by the Scientific Review Group to establish a baseline for hatchery reform.

No matter how good our intentions, no matter how good our science and ability to implement it, the end result will be determined by our resources. Besides the Federal appropriation earmarked this year for hatchery reform, State leaders also recently appropriated some funds for hatchery reform. Activities carried out using these funds have been folded into those now being carried out with Federal monies.

My department continues to seek support from State leaders. Even in advance of the Hatchery Scientific Review Group's reform framework, we are seeking substantial funds for repairs, reconfigurations, closures and other changes to hatcheries. We have also presented the concept of the HSRG's tasks to the combined leadership of the State House and Senate.

Just as salmon recovery efforts now underway in Washington State must be science-driven and carried out in a collaborative way, so must hatchery reform. The reform process put in place under the direction of Senator Gorton and Congressman Dicks accomplishes both these goals. It also demands full accountability from all those involved.

The Department of Fish and Wildlife looks forward to participating in this effort and making it become a reality.

**STATEMENT OF FRANK URABECK, MEMBER, NORTHWEST MARINE
TRADE ASSOCIATION**

Senator GORTON. Frank Urabeck.

Mr. URABECK. Chairman Gorton, Congressman Dicks, Congressman Inslee, I am speaking for the Northwest Marine Trade Association. That includes about 800 companies and other entities from Washington, Oregon and British Columbia that comprise much of the recreational boating industry in northwest.

We very much care about the protection and the recovery of the wildstocks and are indeed directly involved in salmon recovery efforts. I serve on three King county watershed committees. I also volunteer my time in support of salmon and steelhead projects undertaken by Trout Unlimited, the national sport fishing and conservation organization.

While we work to save wild salmon, our association also promotes sport fishing opportunities consistent with the conservation objectives and in compliance with the Endangered Species Act. Obviously, there's a self-interest in here because most fishing is done by boats.

As Jeff said, this year approximately four out of five salmon harvested in Puget Sound region will be fish that originated in hatcheries. Those of us that participated with the State and tribal co-managers in setting the 2000 salmon season regulations know firsthand the protections afforded wildstocks by the restrictions we placed on our fisheries.

Clearly, without hatchery salmon, there would be little or no opportunity to fish this year by anyone. Even with our best collective efforts to save wild salmon, I do not see wildstocks rebounding to levels that would allow significant harvest within the near future.

Now we do recognize that some of the criticism of past hatchery practice is valid, and that is why we've joined with Trout Unlimited, the Puget Sound Anglers, the Poggie Club and other organizations in supporting Senator Gorton's Hatchery Reform Initiative, which has been co-sponsored by Congressman Dicks.

It just doesn't make sense to "throw the baby out with the bathwater" as some advocate, when properly run hatcheries through enlightened management can both support wild salmon recovery and meaningful harvest by sports, commercial and tribal fishers.

In his recent book, "Salmon With Rivers," Jim Lichatowich is highly critical of hatcheries and alleges that little has been done to deal with the problems. He seems to suggest that hatcheries should be abandoned but offers no alternatives that would retain meaningful fisheries. I respectfully disagree with Mr. Lichatowich.

New hatchery operation approaches in the Yakima Basin by the Yakima Indian Nation show promise. The mass marking of hatchery coho and recently hatchery chinook will not only allow biologists to assess the real interaction of wild and hatchery stocks on spawning grounds, but also enable selective fisheries.

And I'm pleased to announce that the Muckleshoot Tribe and the Department of Fish and Wildlife I think just several weeks ago reached an agreement to mark hatchery chinook at the Soos Creek and the Issaquah Creek hatcheries, and that was a major accomplishment.

Now sports anglers for several years have been targeting on marked hatchery coho and releasing unmarked wild coho where appropriate. This year for the first time the commercial trollers will be selectively fishing for coho off the Washington coast. Selective fishers will eventually allow us to address the very sensitive problems of excess salmon returning to hatcheries that several have referred to.

The Oregon hatchery coho “bonking” video that several of our State legislators have shown has gotten lots of distribution and infuriated not just a few legislators concerned about the return on the public dollar spent on hatchery production when you have all these excess fish coming back.

And it’s important to mention that the success of hatchery supplementation is saving wild runs like the White River Spring Chinook, and we’re also using supplementation in an attempt to restore wild steelhead in the north Lake Washington tributaries located not too far from where we’re having this hearing today. And Senator Gorton, you were there at the Issaquah Hatchery I think this fall when we talked about that.

PREPARED STATEMENT

We’re excited about the work of the Hatchery Scientific Review Group and believe it holds great promise for helping to steer hatchery management in the right direction. We appreciate very much the leadership, Senator Gorton, and the role that you’ve played in establishing and funding this group of scientists, as well as the significant involvement and that of Congressman Dicks and others, and Senator Murray, in the Northwest salmon recovery, all of you.

Thank you for this opportunity to speak on behalf of the sport fishing stakeholders.

[The statement follows:]

PREPARED STATEMENT OF FRANK URABECK

Mr. Chairman, members of committee. I am Frank Urabeck, speaking for the Northwest Marine Trade Association. The association includes 800 companies and other entities from Washington, Oregon and British Columbia that comprise much of the recreational boating industry in the Northwest. We very much care about the protection and recovery of wild salmon stocks and are active in salmon recovery efforts. I serve on three King County watershed committees and also volunteer my time in support of salmon and steelhead recovery projects undertaken by Trout Unlimited, the national sport fishing and conservation organization.

While we work to save wild salmon our association also promotes sport-fishing opportunities consistent with conservation objectives and in compliance with the Endangered Species Act. Most fishing is done from boats.

This year approximately four out of five salmon harvested in the Puget Sound region will be fish that originated in hatcheries. Those of us that participated with the state and tribal co-managers in setting the 2000 salmon season regulations know first hand the protections afforded wild stocks by the restrictions we placed on our fisheries. Clearly, without hatchery salmon there would be little or no opportunity to fish this year by anyone. Even with out best collective efforts to save wild salmon I do not see wild stocks rebounding to levels that would allow significant harvest within the near future.

We recognize that some of the criticism of past hatchery practices is valid. That is why we have joined with Trout Unlimited, Puget Sound Anglers, the Poggie Club and other organizations in supporting Senator Gorton’s hatchery reform initiative. It just does not make sense to “throw the baby out with the bath water” when properly run hatcheries, through enlightened management, can both support wild salmon recovery and meaningful harvest by sports, commercial and tribal fishers.

In his recent book, "Salmon Without Rivers," Jim Lichatowich is highly critical of hatcheries and alleges that little has been done to deal with the problems. He seems to suggest that hatcheries should be abandoned but offers no alternatives that would retain meaningful fisheries. I respectfully beg to disagree with Mr. Lichatowich.

New hatchery operation approaches in the Yakima Basin by the Yakima Indian Nation show promise. Mass marking of hatchery coho, and recently hatchery Chinook, will not only allow biologists to assess the real interaction of wild and hatchery stocks on spawning grounds but also enable selective fisheries. Sports anglers for several years have been targeting on marked hatchery coho and releasing unmarked wild coho where appropriate. This year commercial trollers will be selectively fishing for coho off the Washington coast. Selective fisheries will eventually allow us to address the very sensitive problem of excess salmon returning to hatcheries.

The Oregon hatchery coho "bonking" video has gotten lots of distribution and infuriated not just a few legislators concerned about the return on the public dollar spent for hatchery production. Also it is important to mention the success of hatchery supplementation in saving wild runs like the White River Spring Chinook. We are using supplementation in an attempt to restore wild steelhead in the north Lake Washington tributaries located not too far from Bellevue.

We are excited about the work of the Hatchery Scientific Review Group and believe it holds great promise for helping to steer hatchery management in the right direction. We appreciate very much the leadership role Senator Gorton has played in establishing and funding this group of scientists as well as his significant involvement in Northwest salmon recovery.

Senator GORTON. Jim, it seems to me you spent your entire career attempting to facilitate answers to complicated questions with people who at least start with widely divergent point of views.

How would you rank this one on the order of complexity and difficulty?

Dr. BERGMAN. The complexity in terms of managing the scientific information I think is the biggest challenge, in the sense that this effort I believe is going to end up really kind of setting up the research and scientific framework where we're going to push the limits of our knowledge into some very complicated areas of genetic interactions, things that people have talked about, but we don't know a whole lot about.

The good news is, I guess, two-fold. One, I've been in the middle when some of these folks couldn't hardly speak to each other, or their predecessors, and I was sort of the chief clay pigeon.

And in this case, what Billy and Jeff have said I've heard from others throughout Puget Sound and the coast that they as managers believe it to be in their interest in the resource interest to make this work. And what Frank reported to you from the fishing community is, I believe, the fishing community is no longer saying don't change, they're just saying, try and change in a way where you make these two fit. And we realize things won't be the same. That's not always been the case in the past; it's been a no change philosophy.

And the last thing. These scientists are impressive. They, I believe, are going to give us information which managers can, in fact, use to make informed decisions, and that's their goal.

So I can't remember in the last couple of years where I've been as enthusiastic about an effort, I guess, Slade, in response to your question, as I am about this one. I think Billy's right, the stars are lined up, and we're going to look back and next year and the year after and say, probably not since the early 1900s did people set about accomplishing something of this significance and actually do it.

Senator GORTON. Pete, let's say that this group, as distinguished as it is, can come up with answers. Are its recommendations going to be listened to by the managers? And perhaps even more significantly, will these recommendations likely be considered to be consistent with the Endangered Species Act, and do you have a relationship with NMFS that means you'll be able to implement whatever the recommendations are?

Dr. BERGMAN. I think they will be consistent, and I think that there's several reasons for that. One is, the agencies—and once again, I'm talking about the tribes as an agency—have been working very closely with the National Marine Fisheries Service to understand what the requirements are. And from the very beginning of this whole thing, we were assured that these things would and could mesh.

Now, I think that the Federal agencies are going to be working closer with this particular group, right, Jim?

Mr. WALDO. I might add to that, what Pete's referring to is the State and tribal managers have put together an implementation and coordination group. They recently asked U.S. Fish and Wildlife Service and NMFS if they would each appoint someone to join in that effort, and they will. And they have picked some very good people to do that, people who I consider to be knowledgeable and results oriented.

So I think this is an area where, beginning with the submission of the hatchery and genetic management plans this summer and on through the course of this fall, there probably will be very effective detailed discussions, and it's going to lead decisions that will be implemented.

Senator GORTON. Finally, Jeff, you got interrupted, and I think quite properly so, by Norm when you got to this clubbing or whatever term, the "bonking" that one might use for it. Let me see if I can follow through the logic.

The hatcheries were created primarily to produce fish that would be caught, commercially and for sports purposes. As we move into a great emphasis on the restoration of natural stocks, we've cut down on that harvest on both sides. So what you're saying is the hatcheries under those circumstances were literally producing too many fish.

Mr. KOENINGS. In some cases, yes.

Senator GORTON. At least in some cases.

Now, maybe perhaps you can tell me why is it that excess number of fish could not have been harvested at a point earlier in the cycle, then they get backed up to their hatchery and are clubbed?

Mr. KOENINGS. Well, it's a very complicated question and a very complicated answer.

Quite frankly, we go through a process under the Pacific Fisheries Management Council and north of Falcon, a process where we allocate fish based on their anticipated return back to various points of origin, if you will, both natural and hatchery stocks.

We lack in some cases, in many cases, the ability to make adjustments to those pre-season forecasts as the fish come back. In some cases, the hatcheries outperform their expectation, in other cases, they underperform their expectation.

And a large part, when we design fisheries, we can't capture if, in fact, there is an increased production beyond what we expect coming back to some facilities. And therefore, you have these large surpluses that we have to do something with.

Our purpose is to do something constructively with those fish, and that's why I mentioned the food banks. Billy's familiar with giving fish away up in Nisqualle and so on.

Senator GORTON. And so it's more—by the nature of the situation, you can't come up with totally accurate estimates—than it is; that they're mixed in with wildfish that you must protect or are both of those factors involved?

Mr. KOENINGS. Both of those are factors. And we've tried to address one of those factors by having selective fisheries, for example, and by having terminal fisheries as another example. But you have to realize, 30, 40, 50 years ago, there was a quite different construct in terms of fisheries and hatcheries than there is today. And we're in the process, the flux, the evolution of trying to redesign and reconfigure not only hatcheries but our harvest structure as well.

Senator GORTON. Now if you didn't kill the fish, if you didn't bonk the fish, if you just paid no attention, then what would happen?

Mr. KOENINGS. Well, in some cases the habitat isn't there to do anything with, so they would essentially be dead, obviously, from their own cycle, and contribute nutrients to the watershed, which in some cases isn't there as well. So a lot of the beneficial use wouldn't be there in terms of what we want to do with the fish anyway. I'm just using this as one example as well. There are other examples why fish need to be killed the hatchery rack, if you will, but this is a big one.

If they're not killed, we just won't have the beneficial use for those fish that we think we can provide by having them killed at that hatchery.

Senator GORTON. Norm.

Mr. DICKS. Pete, I know you've been working on this Hatchery Forum Initiative, and I want to thank you, and all of you, for your efforts in this area.

And this is one of the questions, when you have people come out here trying to explain hatchery fish—you can catch hatchery fish, you can eat hatchery fish. Some people think they shouldn't even have a salmon; that it's the wildfish that we're trying to focus on.

And one of the challenges in operating these hatcheries, as I understand it, is trying to deconflict the wildfish that are reproducing in the river at the same time when you release these hatchery fish.

Now, are we going to be able to do this? Can these things be managed so that you separate the hatchery fish from the wildfish? And anybody else who wants to get on this.

Dr. BERGMAN. Well, I think they can. I think you're aware that the National Marine Fisheries Service has come out and said, we've got to be able to know what the mix is, and we want all of these fish to be marked, and not necessarily for selective fishing, but just so that we can—

Mr. DICKS. In other words, you want to do the adipose fin clipping on all hatchery fish?

Dr. BERGMAN. That's what I believe National Marine Fisheries Service is saying.

There's some of us who wanted to do the same thing that, thinking that gives us a greater opportunity for the selective—there's some of us who wanted to see all the hatchery fish marked so that they could be caught, and so that you can find out whether a fish, when you've landed the thing, is a hatchery fish or a natural fish, and put them back and try to fish in ways—

Mr. DICKS. Put the wildfish back?

Dr. BERGMAN. Put the wildfish back and fish in such ways that the fishing gear does not injure the wildfish, that sort of thing. And probably what you'd want to do is fish in areas where you can tell that most of the fish are hatchery fish because they're identifiable. And that's the Federal request that just came out in a letter a short time ago.

In the first place, you can't tell when the hatchery fish are mixed with the wildfish unless you can differentiate them in some way. And so they're just saying, hey, simply, we can look at the fish. And they're concerned about what fraction of the hatchery fish are spawning with the wildfish. And so now the idea is that we go out on the spawning ground and just take a look. And if we've got too many, we need to figure out how to change that.

Mr. DICKS. Yes, Frank.

Mr. URABECK. Congressman, those are good questions, and the fact is, that we really started—and I think both of you were helpful in getting us into that mass marking. And the coastal fisheries again this year will be on hatchery marked coho; we have to have that. And it was pretty successful last year. The encounter rates were pretty good. It was, hey, this may not be a bad way to go. A little slow in the straits as some of you know, but we hope the encounter rates go up this year. And down in the lower Columbia River it's a way to go.

People fought this idea. And we had some of those debates, but now people are recognizing that this does give us an additional tool to be used where appropriate. And the big breakthrough on chinook, there's still some issues to be worked out with the tribes, and they've got to be in agreement with this thing. That's one thing we learned, you can't rush ahead. The co-managers both have to agree this is the way to go. But we're seeing some promise on this thing.

National Marine Fisheries Service just came out with a letter just a few weeks ago, that in effect said, as a matter of policy, mass marking is the way to go in order to differentiate between the wild and the hatchery fish on the spawning grounds. Coho, there are selective fisheries; chinook, we've still got to talk about because of the United States-Canada thing, but we're moving in the right direction.

Mr. DICKS. Jeff.

Mr. KOENINGS. Just a brief comment on other ways that we're selectively harvest fish. Mass marking is one way of having a selective fishery. There are other time and area strategies that we have as well, where we try to separate healthy stocks from stocks that are not healthy. And of course, we have to provide the fishing opportunities and the custom places for the tribal co-managers. But they harvest in terminal areas, so there's a way of separating, in

some cases, again, the stocks that are in trouble for those that are hatchery origin.

I will mention one other reason why you do see, in certain cases, why we do have to kill fish at the rear, and that's simply because we have out of watershed stocks coming back to certain watersheds. And that's part of our review practice to not have out of watershed stocks coming back to a particular watershed to use the local endemic stocks in the watershed. And again, that will help us reduce the incidence of having to harvest fish when they come back. So there's a variety of different things we have to do and can do with this review.

Mr. DICKS. Billy, what do you think about selective harvest?

Mr. FRANK. Tribes are not against it. There's a right way to do it and a wrong way to do it. And we're working to find the right way.

Mr. DICKS. Is there new gear that you can use where you could release the fish rather than use gill nets? Is that possible?

Mr. FRANK. Well, you could go back to the old days of traps and whatever, you know. I mean, we're working with everyone and looking at different methods of doing things now. I mean, there is a change coming, and it's happening right in front of us, such as nets that are going to be sunk and meshes and different other things.

When I was a young boy, again, we had cotton nets. They were cotton, and we hung them. And it took you a couple weeks to hang them. Well, cotton rots, and the salmon's got a chance to go through, and the cotton can be seen at daytime. And you can only catch salmon night with a cotton net. These are things that now, the filament comes out, you can fish 24 hours a day and catch salmon. But them are things that are being looked at. These are very trying times for managers to get right in and see what methods has to be done.

We've got to look at the whole ecosystem, and we can't single any elements out. We've got to look at everything. Fixing hatcheries is not going to solve our problem. Everything has got to be together. We've got to look at everything, the habitat, the clean water, everything. And we've got to look at management, just exactly what we're talking about here. And we've got to be credible, we've got to be accountable, and we've got to do it right.

Mr. DICKS. What about mass marking? The tribes have come along on this.

Mr. FRANK. As Jeff was saying, the Muckleshoot Tribe and Washington Department of Fisheries came to an agreement on mass marking. And that's what's happening throughout Puget Sound and along the coast.

Mr. DICKS. Jeff, one thing I tried to do every year to ask that the State go out and meet one on one with each of the tribes on this issue and their areas. And I'm told that's being done.

Mr. KOENINGS. That's correct. That's what Billy was referencing, the State working with the individual tribes, like the Muckle Sous Tribe and others to reach agreement on mass marking chinook as well as coho.

Mr. DICKS. Thank you, Mr. Chairman.

Senator GORTON. As you've all noticed, we've been joined at the time of this panel with Congressman Inslee, and now it's his turn, both for a statement, if he wishes to make one, and for questions.

Mr. INSLEE. I just have a couple questions.

First, I should note, Billy made reference to hoping for a breath of fresh air. I thought you were going to introduce me, Billy. I was kind of disappointed a little bit by that.

I appreciate the Senator convening this and all of your participation. I do have a couple questions.

First, what percentage of these stocks are tagged now to identify them as hatchery and realistically, say a year from now, what's like to have identifying markers or hatchery fish? What do you think? Anybody can answer that, take a stab at it.

Mr. KOENINGS. In Puget Sound?

Mr. INSLEE. Yeah, let's just stay with Puget Sound for a moment.

Mr. KOENINGS. Well, for coho and chinook, I think in the next—well, if not this year but the next year, we'll have nearly 100 percent of the coho and chinook marked in Puget Sound from hatcheries.

Mr. INSLEE. That's when you do the adipex?

Mr. KOENINGS. Right.

Mr. INSLEE. Not all of them will have the tag.

Mr. KOENINGS. In the mass marking program, exactly. They'll be some scientific double index tagging and all that stuff that we don't need to go into. But, yeah, involved in the mass marking program.

Mr. INSLEE. And what percentage does that eventually save of the hatchery fish—of the natural run fish, that are tagged, or otherwise identified, what percentage actually get back into the water and survive?

Does anybody have any idea how that works?

Mr. KOENINGS. Well, I'll take a shot at it.

We have an idea of what the total harvest rate is on fish from marking our hatchery fish, and we think those rates will be representative for the wildstocks. But the essence of it is, is that we hope—as Pete was saying earlier—the problem that we're trying to correct is, we can't harvest wildstocks at the same rate we harvest the hatchery stocks. So we can place a great harvest rate and emphasis on the hatchery stock, thereby reducing the overall harvest on the natural stocks. So on hatchery stocks we may harvest at a rate of 60 to 70 percent. We only harvest, incidentally, the weaker wildstocks as a rate of 20 to 25 percent. That's how far we've reduced it.

So that's the hope here, that we can have some real opportunities, both in terms of tribal and nontribal fisheries, by having a higher harvest rate on the hatchery stocks, and at the same time have a much, much lower incidental harvest rate on the wildstocks. That's the intent of the program.

Mr. INSLEE. Dr. Bergman, can you—and this is kind of a wide open question. But if you were consider all of the challenges that hatchery fish create for natural wild runs, how would you characterize those between increasing incidental take, being a competitor for nutrients, genetic interbreeding?

What's the greatest threat? How do you, in an hierarchical basis put those? What's the biggest problem? What's the least problem?

Dr. BERGMAN. I'm not sure I can really answer that. I guess my personal sense—and I know that others, unlike on this science group, disagree with me on this. But I think that putting too many hatchery fish in certain locations—that is, more fish than the environment can take—is a major problem. That's what I think.

The other issue is, I think that the timing of when these fish are released and so forth, and probably the actual size of the fish. Natural fish just aren't ordinarily as large as these hatchery fish. So if a hatchery fish is being released on top of a bunch of natural stocks that are half the size, they simply get out-competed for food, and if there's too much difference, there is even predation and that sort of thing.

But I guess I would have a hard time trying to decide which is the more important. And, in fact, I think part of the problem is that our science hasn't been that good. We didn't learn those things.

Mr. KOENINGS. I think too, just a comment you might find that it's on a case-by-case basis. There isn't one factor or a combination of factors that's unique. It has to be determined on a case-by-case basis. And that's one reason why we're looking at this scientific review group to give us sort of the risk and benefit guidelines by which we can make those judgments. That's the importance of this group.

Mr. INSLEE. We talked a little bit about the potential of doing the harvest at the, terminus, if you will, closer to the hatchery.

Billy, has there ever been a case where any of the tribes have agreed to do that? In other words, at least on a temporary basis not fish in their usual and accustomed geographic area, but, in fact, accept a terminus location of harvest? Has that ever happened?

Mr. FRANK. The tribes right now are down to about 90 percent of no harvest, and most all of the harvest right now is pulled into the terminal area and fishing directly on hatchery stock.

In the past, the hatcheries were not build on watersheds; they were build little creeks over here on each side of the watershed or something. And that's a problem. But if there's a hatchery there an there's a bay there, that's a terminal fishery, and it's going on right here, so that they're taking that harvest of hatchery stock, and they manage it that way, along with the State of Washington.

But if we had this hearing 10 years ago, or 20, or 30, or 100 years ago, we wouldn't be talking like this. Things were bad.

Now things—when I say lining up better, this hatchery reform, and at least the public hopefully will understand better what the manager and the scientific team are looking at. And they're looking at everything that you just laid out, Congressman. You know, when do we release the salmon? Is there a good time to release them? How big do they get? Do we feed them to what size so they won't outbid for the food?

All of these things are being looked at, and they're very important to the watershed, to bringing the recovery of the wildstock back as well as how do they work together when they're on a watershed, and they're all released from a creek or whatever it might be.

Mr. INSLEE. Thank you. Thank you, Senator.

Mr. DICKS. Tell us how—and I know Long Live the Kings have worked on this—you've used hatcheries and supplementation to restore wild runs? How do you do that?

Mr. KOENINGS. I'll take a first crack at it.

If there's a wildstock run that is particularly bad shape—and we have some of those in the State, obviously, one way we can use hatcheries is to do the normal increase in survival during the freshwater phase, increase it by putting what stock does come back into hatcheries—

Mr. DICKS. Wildfish. You take the wildfish and put them back in the hatchery.

Mr. KOENINGS [continuing]. Wildfish, put them back, no broodstock capture. But you take the broodstock as it comes back to the wild, and that's where you have your egg-take, put them in the facility where the survivorship goes up 9-fold, 10-fold from what it is in the natural environment, especially in our sick environments we have—put those fish in the hatchery to increase their survivorship, have them go to sea and complete their life's cycle. But you've increased the number of successful migrants out of the freshwater phase by 10-fold by using the hatcheries.

And the hope is, by over a period of time, you will have enough fish coming back from the process that they will naturally spawn and keep the run going, and you can end the supplementation. So that's the way supplementation is envisioned to work. There is an end product by which you've increased the size of the natural run to the point it can carry itself through natural spawning.

Mr. DICKS. Are we doing enough of that? Is there the financing to do the amount of that that's possible? Can you tell us about that?

Mr. KOENINGS. Well, do have some of those programs going on. Right now, I think they've been used to basically supplement some of really the weakest and the most dire need of help, if you will. And that's one of the things that this Hatchery Scientific Review Group is looking at, is giving us a risk-benefit analysis, if you will, of expanding that type of program into other runs—is the risk worth the benefit or not? And, yes, that's one of the questions that's going on right now.

Mr. FRANK. Congressman Norm, what we're doing is we're taking our own stock at Nisqualle, and we're introducing them back into the upper watershed, into the cold water—chinook, salmon. And they're bypassing the hatchery on the 8 miles of the river, and they're going on up into the 40 mile. And they'll never come back to that hatchery. They'll just migrate back out to sea and will rebuild that stock up there, 40 miles up.

And 40 miles is where the first dam is on Nisqualle. I mean, there's all kinds of problems along the watershed, so we have to look at this as a watershed management, and that's what is happening right now, and how many can we put into that particular river that's 40 miles up and all of these things?

Mr. DICKS. Carrying capacity?

Mr. FRANK. Yes. The city of Eatonville is up there, and what are we doing. But we're working with the city of Eatonville, we're working with Yelm, we're working with the whole watershed to let them know what is going on on the watershed now.

Mr. WALDO. I think part of what the repositioning—sort of a strategic plan on repositioning is designed to answer that type of question.

Let me give you two examples, one of which I think, Senator, you're going to see over the weekend out in the Hamma Hamma. But it's a combination of both work on the habitat and they had some tributaries to the canal where literally the species were gone. So they went to the next tributary over where they still had some, and they very carefully decided on a reintroduction program. And they raised then so that the fish are reared in a sort of semi-natural state. They decide when to go back into the river on their own.

It's quite a bit different. I mean, it doesn't look at all—when you say a hatchery, this is not what you would envision as a hatchery program, but it is, in fact, artificial production for targeted purpose combined with changes in the habitat.

Another example, the Tualips have got a program in the Stilliguamish. That river has been severely damaged because of a lot of landslide activity, mass failure. It used to be one of the best sports fishing rivers in the State, and now a couple species are about to go extinct.

Well, they want to go in and capture that genetic stock, and then figure out how you start helping the river heal itself to a point where it can sustain those stocks again and then reintroduce them. Because it's not a permanent condition. The river doesn't always have to be in that shape, but you would like to be make sure that the stocks that have survived it over thousands of years are still around when that healing is occurred. That's a different use of a hatchery than we would have thought of 10 years ago, a different combination of factors.

So when we talk about repositioning, it's not just do you reshape the concrete or you just kind of a little bigger or a little smaller; it's, we're going to try and accomplish some very different things here, I think.

Mr. DICKS. Thank you very much.

Senator GORTON. Thank you. Each and every one of you has made a major contribution and has been most enlightening. And we greatly appreciate not just your efforts here but your continued efforts.

STATEMENT OF DANIEL DIGGS, ASSISTANT REGIONAL DIRECTOR FOR FISHERIES, PACIFIC REGION, U.S FISH AND WILDLIFE SERVICE, DEPARTMENT OF THE INTERIOR

Senator GORTON. And the fourth panel will deal with natural factors of salmon decline, research and policy. Will the three of you come forward, please?

Senator GORTON. We'll start Mr. Diggs with you.

Mr. DIGGS. Thank you. Senator Gorton, Congressman Dicks, Congressman Inslee, it's really a pleasure to be here today on this panel. I would have loved to sit in on all these panels and provide some input. And perhaps on the next panel in which I sit I can add to those discussions we've already heard. But, of course, this panel is addressing one of the issues in regard to salmon recovery and restoration in the Northwest, and that's the issue of natural decline.

And as I understand, you particularly wanted to hear from the Fish and Wildlife Service today in regards to the tern issue and the salmon predation issue in the Columbia River. So my comments will be rather brief in those regards on that specific subject of interest.

Mr. Chairman, I am honored to be here today and grateful to you for your efforts to bring focus to the issues surrounding salmonid restoration in the Northwest. I am Daniel Diggs, the assistant regional director for Fisheries for the Pacific Region out of Portland, OR. And I am providing testimony on behalf of the U.S. Fish and Wildlife Service today.

We appreciate this opportunity to add to the discussion on salmon recovery and hope that today's hearing can help people of differing perspectives work toward a common concern for salmon and their habitats.

This issue has fostered an interagency effort within the Department of Interior and other Federal agencies. And as you know, Dr. Daniel Roby, the assistant unit leader of the Oregon Cooperative Fish and Wildlife Unit, testified 2 days ago on this very subject before the Senate Energy and Natural Resources Subcommittee on Water and Power.

So I will offer brief remarks on issues that I know are of specific concern to you, and then be happy to answer any questions that you may have or provide any additional information you may need.

I understand you're interested in hearing more in particular about the seabird, particularly, the Caspian tern predation and its impact on salmon restoration in the Columbia River Basin.

The Service provides technical assistance on the Migratory Bird Treaty Act issues, and also serves in the advisory role on the seabird predation group through the Caspian Tern Working Group.

Now, Caspian terns are colonial nesting species that are native to the Columbia River and the Northwest. The terns first nested in the Columbia River estuary in significant numbers around 1984, when about 1,000 pairs were documented at the East Sand Island.

By 1996, this colony had moved to Rice Island, a bit farther up the river, which is a Corps of Engineers dredged disposal island, and it increased roughly to 8,000 pairs. Now Rice Island is one of only two known colonies along the Oregon and Washington coasts, and support about 10,000 pairs of Caspian terns.

As discussed by Dr. Roby, the United States Geological Survey in 1998, research has indicated that Caspian terns nesting on Rice Island consume between 7 and 15 million smolts. This consumption represents roughly 6 percent of the total number of smolts produced basin wide, 80 to 90 percent of which are hatchery-produced smolts. Losses of wild chinook salmon smolts were estimated to be less than 1 percent. So the primary consumption appeared to be on hatchery fish.

Declines in salmon populations occurred——

Senator GORTON. On that point, because that's unclear here.

You said the loss of chinook salmon. Are you saying wild chinook salmon or are these hatchery chinook salmon?

Mr. DIGGS. I believe this is a reference to wild chinook salmon at this point.

Declines in salmon populations occurred prior to the development of Columbia River estuary tern colonies, as we all know them. And despite avian predation, returns of hatchery-reared chinook have been the highest on record over the last 10 years. However, in an effort to provide some short-term recovery benefit by reducing predation, the Caspian Tern Working Group developed a strategy to translocate the terns nesting on Rice Island to an island near the mouth of the estuary known as East Sand Island.

Caspian terns feed on a wide variety of fishes. Specifically which fish depends upon their availability. So that is, in part, the rationale behind encouraging a shift in tern nesting from Rice Island back to East Sand Island, where they nested in the mid 1980s.

By moving the birds closer to the mouth of the estuary, there will be a greater mix of fish available to the terns, thus reducing the proportion of their diet that is made up of salmon smolts.

In 1999, 1,400 pairs of Caspian terns were successfully encouraged to relocate to East Sand Island. These birds had about 40 percent less salmonids in their diet compared to birds nesting on Rice Island. And our goal with the 2000 relocation effort is to see this 40 percent reduction realized for all outmigrating salmonid smolts, which should result in saving approximately 3 to 6 million smolts.

The Service recognizes that this effort to reduce predation may be a short-term recovery effort until more substantial efforts to begin restoring salmon populations begin taking effect in the basin. And the Service believes that Caspian tern predation on salmon smolts, although it may not rise to the same level as other causes to recovery, is nonetheless an issue that we are addressing over the short-term with the other Federal agencies involved.

The Service supports a step-by-step science-based approach to managing fish-eating birds. A comprehensive assessment is needed to address all the factors that influence salmon recovery to enable managers to focus efforts on actions that will be the most significant benefit for salmon restoration. We must keep in mind, for example, that tern predation, much like salmon and steelhead trout declines, is at its base a habitat issue.

In that light, Mr. Chairman, I want to take advantage of this opportunity to thank you for the support that you've provided to salmonid ecosystem restoration in the Northwest. We've heard much about that today from the various panels. We would really like to thank you for your continued support for the Service's efforts in our nation's Fish Passage Program, and this has been a direct benefit to the State of Washington already, with funding work on the Tahuya River and on the west side of the Cascade Mountains and Icicle Creek and the upper mid Columbia drainage.

We also would like to recognize the other Service programs, such as what is termed the 100th Meridian Initiative, which is addressing another serious concern throughout the west, the invasion of aquatic nuisance species, such as mitten crab and zebra mussels. All of these programs, the continued work on the Chehalis River restoration project, Jobs-in-the-Woods, Partners for Fish and Wildlife, are needed for the restoration of salmon, bull trout and other native species. And so we would like to recognize all of you today for the support you contribute to restoration in those ways.

I'd also like to really personally thank you, as the assistant regional director for Fisheries, for your role in supporting the use of hatcheries for native fish restoration and your tireless efforts in helping implement hatchery reform throughout the west, in the Columbia River Basin and here in Washington State.

I think, as you know, the Service has taken to heart the message from Congress to refocus our hatchery programs to implement hatchery reform and to support the recovery and restoration in the Northwest, while we continue to meet our Federal mitigation and trust responsibilities.

PREPARED STATEMENT

Mr. Chairman, this concludes my prepared remarks, and again, I thank you for the opportunity to participate here in this discussion. It's such a critical discussion that we need to keep going in the Northwest. And I would be glad to answer any questions that you might have.

[The statement follows:]

PREPARED STATEMENT OF DANIEL DIGGS

Mr. Chairman, I am honored to be here today and grateful to you for your efforts to bring focus to the issues surrounding salmonid restoration in the Northwest. I am Daniel Diggs, the Assistant Regional Director for Fisheries, and will provide testimony on behalf of the U.S. Fish and Wildlife Service (Service).

We appreciate this opportunity to contribute to the discussion on salmon recovery and hope that today's hearing can help people of differing perspectives work toward a common concern for salmon and their habitats. This issue has fostered an inter-agency effort within the Department of the Interior. As you may know, Dr. Daniel Roby, Assistant Unit Leader of the Oregon Cooperative Fish and Wildlife Unit of the U.S. Geological Survey, testified 2 days ago on this very subject before the Senate Energy and Natural Resources, Subcommittee on Water and Power. I will offer brief remarks on issues that I know are of specific concern to you and then will be happy to answer any questions you may have or provide any additional information you may need.

I understand you are interested in hearing more about seabird, particularly Caspian tern, predation and its impact on salmon restoration. The Service provides technical assistance on Migratory Bird Treaty Act issues and also serves in an advisory role on seabird predation through the Caspian Tern Working Group.

Caspian terns are a colonial nesting species native to the Columbia River and the Northwest. The terns first nested in the Columbia River estuary in significant numbers around 1984 when about 1,000 pairs were documented at East Sand Island. By 1996, this colony had moved to Rice Island, a Corps of Engineers dredge disposal island, and increased to roughly 8,000 pairs. Now Rice Island is one of only two known colonies along the coast of Oregon and Washington and supports about 10,000 pairs of Caspian terns.

As discussed by Dr. Daniel Roby of the U.S. Geological Survey, in 1998, research indicated that Caspian terns nesting on Rice Island consumed between 7 and 15 million smolts. This total consumption represents roughly 6 percent of the total number of smolts produced basin-wide, 80–90 percent of which are hatchery-produced. Losses of chinook salmon smolts are estimated to be less than 1 percent.

Declines in salmon populations occurred prior to the development of Columbia River estuary tern colonies. And despite avian predation, returns of hatchery reared chinook have been the highest on record over the last 10 years. However, in an effort to provide some short-term recovery benefit by reducing predation, the Caspian Tern Working Group developed a strategy to translocate the terns nesting on Rice Island to an island near the mouth of the estuary, known as East Sand Island.

Caspian terns feed on a wide variety of fishes—specifically which fishes depends upon their availability. That is in part the rationale behind encouraging a shift in tern nesting from Rice Island back to East Sand Island where they nested in the Mid 1980's. By moving the birds closer to the mouth of the estuary, there will be a greater mix of fish available to the terns, thus reducing the proportion of their diet that is made up of salmon smolts. In 1999, 1,400 pairs of Caspian terns were

successfully encouraged to relocate to East Sand Island. These birds had about 40 percent less salmonids in their diet compared to birds nesting on Rice Island. Our goal with the fiscal year 2000 relocation effort is to see this 40 percent reduction realized for all outmigrating salmonid smolts, which should result in saving approximately 3 to 6 million smolts.

The Service recognizes that this effort to reduce predation may provide a short-term recovery benefit until more substantial efforts begin to restore salmon populations. However, the Service believes that Caspian tern predation on salmon smolts does not rise to the level of other causes of salmon mortality. The Service supports a step-by-step, science-based approach to managing fish-eating birds. A comprehensive assessment is needed to address all the factors that influence salmon recovery to enable managers to focus efforts on actions that will have the most significant benefit for salmon restoration. We must keep in mind, for example, that tern predation, much like salmon and trout decline, is at its base a habitat issue.

In that light, I want to also take advantage of this opportunity to thank you, Mr. Chairman, for the support you have provided to salmonid ecosystem restoration in the Northwest. We also thank you for your continued support for other Service efforts such as our nation-wide fish passage program (of direct benefit to the State of Washington already, with funding for work on Tahuya River on the west-side and Icicle Creek on the east-side), and other specific Service programs such as the 100th Meridian Initiative (and other invasive species projects), Chehalis River Restoration Project, Jobs-in-the-Woods, and Partners for Fish and Wildlife. All of these programs, and so much more, are needed for the restoration of salmon, bull trout, and other native species.

I also want to personally thank you, in my capacity as Assistant Regional Director for Fisheries, for your role in supporting the use of hatcheries for native fish restoration. The Service, as you are aware, has taken to heart the message from Congress to refocus our hatchery program to support the recovery and restoration of declining native salmonid stocks in the Northwest, while continuing to meet our Federal mitigation and trust responsibilities.

Mr. Chairman, this concludes my prepared remarks, Again I thank you for the opportunity to participate in this discussion, which is so critical to the Northwest. I will be happy to answer any questions you may have.

STATEMENT OF FRANK L. CASSIDY, JR., CHAIRMAN, NORTHWEST POWER PLANNING COUNCIL

Senator GORTON. Mr. Cassidy.

Mr. CASSIDY. Thank you, Senator Gorton, Congressman Dicks, Congressman Inslee. How are you today?

I appreciate this opportunity. I am Larry Cassidy, chairman of the Northwest Power Planning Council, and also Governor Locke's appointee to the Salmon Recovery Funding Board.

As you well know, the Northwest Power Planning Council is an interstate compact made up of four States, two members from each State. And we have the responsibility, in fact, the sole responsibility in the Northwest, to mediate and work on the reliable source of energy we have in the Columbia-Snake Basin and also mitigate the fish and wildlife losses related to that hydro system and funded by Bonneville ratepayer money.

There are several things going on in the Power Council now, which I will take a moment to talk about, and then I'll get into some of the issues that my colleague also addressed.

When Governor Locke asked me to leave business and go to the Northwest Power Planning Council, he said to me, "Don't go down there and scratch your nose; go see what's going on with all that money." And I have, and my counterpart, Tom Karier, from Spokane and I, as well as the other members of the present power council from the other States, have taken a very different approach with to regard to how the monies that are expended for fish and wildlife mitigation are used.

An example might be that we took the 1997 Gorton Amendment in creating the Independent Science Review Panel seriously, and we have begun to make every project that we review go through that review process at the Independent Science Review Panel, not to be confused with the earlier science review panel that is working on other issues inside Washington State.

An example of the results of that is, for the first time in knowledgeable history we reduced a hatchery proposal from \$37 million to \$8 million with an axiom, that, you show us some results, then we'll talk about more dough.

So I think there's a very significant business-like approach occurring in the Northwest Power Planning Council, and I think you'd all be pleased with that, and we thank you for your leadership in that regard.

One of the other things we're working on is the multi-species framework, which is a series of studies and tests that have come out now with various alternatives for the Columbia-Snake system, and this document is sort of a primer on that, and I'll leave it for you. But it talks about seven alternatives with regard to changes that can occur on the Columbia-Snake Basin, including four alternatives that deal with breaching and what happens to them.

Our goal was to take the emotion out of this issue and try to logically say what's going to happen if you breach, if you don't breach, what can you do if you don't breach, et cetera. And I think it's a significant achievement, and it's beginning to bear some fruit.

The other thing we've worked on is an artificial production review (APR) which was mandated by Congress for us to undertake. We spent 2 years reviewing the hatcheries on the Columbia-Snake system. Here again, it should not be confused with the other artificial production reviews that have gone on, although we have shared that document with the other working people inside Washington State.

I'm not going to spend a lot of time on the APR review, except that we came to somewhat similar conclusions as what I've heard on the earlier panels. There are only two statistics I would have brought out—there are over 120 artificial production facilities in the Columbia-Snake Basin. If planting fish were the answer, we wouldn't have a salmon problem.

I listened to a Canadian speaker about 2 months ago, and he brought to our attention the fact that in the North Pacific, including Alaska, British Columbia, Oregon, Washington and Idaho, we planted 5 billion fish, artificially produced fish, in 1999. So again, if planting fish were the answer or spending money were the answer, we wouldn't be here today with this problem.

Certainly they're a key component, and we at the Power Council understand that. We worked on a memorandum of understanding with Bonneville with regard to our annual amounts of expenditures for fish and wildlife mitigation, and we live up to that. But for the first time in a long time there's a very serious attitude about how that money is spent. Is it science-backed, is it going to be used on the ground, and is it going to make things better, hopefully, for the habitat and salmon in general?

Every now and then you run into disappointments, and one of those is what the former speaker addressed.

I spent, as chairman, as well as the other members of our council, 18 months working out an agreement on the Caspian tern relocation issue, to move them from Rice Island—which is probably of all the points in Columbia the worst possible point for the terns to nest because they are right where the freshwater and saltwater block meet. As you know, fish tend to avoid that salt water confrontation on their outbound migration, and they're more easily preyed on as they come to the surface to stay in freshwater as long as they can.

Relocating them to East Sand Island was a mediated effort that took some number of months to come to agreement on. Our Power Council held up a \$760,000 appropriation for the Tern Working Group until they came up with a working plan that was satisfactory to us.

We finally achieved that, and we all signed off. And to be sued, as we have been, is a major disappointment for our council and for the States of Oregon and Washington. I will tell you that I'm recommending to our Governor's office today that we join the Corps of Engineers as an amicus—the State of Washington, that is—to avoid the fact that we have to file an EIS so we can proceed with this plan for this year.

As I said, this is a major disappointment for us, and I don't want to lose another season. I do not by any sense of the word imply that the Caspian tern population is the sole reason for our salmon decline. But if you look at this situation, we're expending huge amounts of public money to produce fish, some artificially produced, some wild by what we do in the protection of the pristine area.

Senator GORTON. Spilling water.

Mr. CASSIDY. Sorry?

Senator GORTON. Spilling water as well.

Mr. CASSIDY. Also true, and which is a loss of power.

We also claim—and I feel comfortable, and this is a good statistic—that we are getting better escapement today of the downstream migrants than in the 1960s before they built dams, all through the tweaks we've done on the system for channel diverters and screening and other efforts that we've done to get these little devils down to the mouth to the river.

To then let this huge predation go on, whether they're hatchery or wildfish, doesn't make sense to me.

Senator GORTON. From essentially artificial birds, in the sense of their—

Mr. CASSIDY. Well, there are strong proponents for the terns, and I respect those people. I've been down on the island. I sort of like the birds. They're actually sort of cute to be honest with you. I'm sort of sorry I went down there, to tell you the truth.

Mr. DICKS. It's just unfortunate the Corps of Engineers built this island where they did.

Mr. CASSIDY. Well, I don't know if I can address that or not. The dredging of the Columbia is the key component to our economic structure, and it has to be done. So it's a constant ongoing process.

I think if you want to address the real unfortunate thing is that they didn't vegetate the island from day one. And that's what we've been sort of getting the Corps to try to commit to. If they'll vege-

tate their spoil sites, you reduce the tern nesting potential because they will not nest on areas that have vegetation.

But as I say, to get back to my point about the Caspian terns, this was not a permit to reduce the population. I mean, there's a precedent with cow preying and bears scratching trees and other things in our State where we do undertake that. This was an effort to work out a resolution that would relocate the terns to reduce their diet from 90 percent salmonids to 40 percent salmonids. It's a reasonable conclusion. And then to end up being sued as we are is a very major disappointment.

And, in fact, we had agreement with the Audubon groups in Portland and Vancouver which are geographically close to the area. Now I'm very disappointed that this turned out the way it is. I just don't want to lose another season or two.

In any event, I do think things are in good shape at the Northwest Power Planning Council. We do recognize the reliable source of electrical power we have in our Northwest is vital to us. It needs to be protected. I believe sometimes we take it for granted, and we can't do that.

PREPARED STATEMENT

So I'm working this out so that we do remain strong in the power generation areas and still have strong fish runs, which is the real goal for the Power Council, and I feel good we're headed in a good direction.

I appreciate the opportunity to talk before you, and I'm willing to answer any questions.

[The statement follows:]

PREPARED STATEMENT OF FRANK L. CASSIDY, JR.

Thank you, Mr. Chairman, for the opportunity to testify today on behalf of the Northwest Power Planning Council and our Columbia River Basin Fish and Wildlife Program.

As you know, the Council is an agency of the four Northwest states of Washington, Oregon, Idaho and Montana. The Council was authorized by Congress in 1980 through the Pacific Northwest Electric Power Planning and Conservation Act (the Power Act), and created by the legislatures of the four states in 1981. The Council is the only regional agency charged with balancing fish and wildlife mitigation in the Columbia River Basin with a reliable, affordable power supply. The Council's three principle responsibilities are:

1. To develop a regional power plant to assure the Northwest an adequate, efficient, economical and reliable power supply;
2. To develop a fish and wildlife program as part of the power plan to protect, mitigate and enhance fish and wildlife affected by hydroelectric development in the Columbia River Basin; and
3. To provide for broad public participation in these processes and inform the Northwest public about regional energy issues.

There are eight Council members, two from each state, who are appointed by the governors. I am one of Washington's members, and also the Council chair for 2000. The other Washington member is Tom Karier of Spokane.

I am pleased that you are addressing salmon and steelhead recovery issues through this hearing, and I am grateful for the opportunity to briefly discuss the Council's efforts in mitigating the impact of hydropower dams in the Columbia River Basin. Each year, the Council directs the expenditure of a substantial amount of Bonneville Power Administration electricity revenues to implement our fish and wildlife program. For fiscal year 2000, the Council's program budget is approximately \$130 million. These expenditures are directed at improving survival at all life-cycle stages for anadromous and resident fish, and also to replace wildlife habitat affected by the dams. I believe the Council's efforts offer a model for others to emulate, particularly Federal agencies implementing the Endangered Species Act.

Specifically today, I would like to highlight the Council's use of independent scientific review in the annual project selection process, the Council's recommendations regarding the future use of fish hatcheries, the Council's consideration of ocean conditions in our annual project-funding recommendations to Bonneville, and the Council's response to the impact of predation by Caspian terns on salmon and steelhead smolts in the Columbia River estuary.

INDEPENDENT SCIENTIFIC REVIEW

Due to Senator Gorton's leadership, in 1996 Congress amended the Northwest Power Act by directing the Council to create the Independent Scientific Review Panel. The purpose of the amendment was to provide a higher level of scrutiny of Bonneville's annual direct expenditures on fish and wildlife projects in the Columbia Basin. The result, we believe, after nearly 3 years of implementation, is improved credibility and public accountability.

The 1996 amendment directed the science panel to make recommendations to the Council on project priorities within the Council's Columbia River Basin Fish and Wildlife Program, and to review project proposals for their scientific merit. For fiscal year 2000, the Panel reviewed 397 project proposals. It is worth noting that this year, as for fiscal year 1999, the Review Panel found about 40 percent of the project proposals to be either inadequate for scientific review or not supported by sound science. Ultimately, many of these projects were revised by their proponents and approved by the Review Panel. Two years ago, a provision that Senator Gorton sponsored in the fiscal year 1999 Energy and Water Development Appropriations Conference Report expanded the scope of the Independent Scientific Review Panel's work to include the fish and wildlife projects reimbursed to the United States Treasury by Bonneville. Through these efforts, and the subsequent work of the Review Panel, electricity customers who pay for the Council's fish and wildlife program can be assured that their money is being spent in the most efficient, scientifically credible way possible.

REVIEW OF ARTIFICIAL PRODUCTION

Independent scientific review also made an important contribution to the Council's recommendations to Congress last year for new policies to guide the future use of artificial production of fish in the Columbia River Basin. In July 1997, through another provision sponsored by Senator Gorton, Congress directed the Council, with the assistance of the Independent Scientific Advisory Board (ISAB), to conduct a thorough review of all federally funded artificial production programs in the Columbia River. The ISAB is a panel of 11 scientists who advise both the Council and the National Marine Fisheries Service on scientific issues related to fish and wildlife. Congress directed the Council to recommend a coordinated policy for future operation of artificial production programs and to provide recommendations for how to obtain such a policy.

Artificial production of fish has been used in the Columbia River Basin for many purposes during this century. Most of the artificial production programs in the basin are financed with Federal money. Hatchery programs have produced both resident fish (those that do not migrate to the ocean, such as bull trout and rainbow trout) and anadromous (ocean-going) fish, especially chinook and coho salmon, and steelhead. These species have also been the focus of tribal, sport and commercial fisheries management in the basin. There are more than 150 hatcheries and associated facilities for anadromous and resident fish in the basin. Federal and State agencies, Indian tribes and private interests operate them. Many are intended to mitigate the impact of dams, which have blocked access to about one-third of the salmon and steelhead habitat that existed historically in the Columbia Basin. Dams also affect resident fish by blocking historic freshwater migration routes, inundating spawning areas and altering the ecosystem.

Fish hatcheries play a unique role in the Columbia Basin. They have been identified as one of the causes of the current declines, particularly for salmon, because the volume of fish production prompted long fishing seasons, which in turn caused overfishing of the less-numerous naturally spawning runs. At the same time, hatcheries also are considered part of the solution to the declines, as they are capable of producing fish for release into rivers and streams to rebuild naturally spawning runs.

The dilemma identified by Congress and addressed by the Council and the ISAB is that the purpose of many artificial production programs currently is unclear. While many artificial production facilities were built to mitigate the impact of dams or to produce fish for harvest, their role today is less certain. There also is concern about adverse impacts of artificially produced fish on fish that spawn naturally. As

declines continued, fisheries scientists increasingly recognized that traditional fish hatchery practices should be changed. Producing fish for harvest remains a legitimate use for artificial production programs, but scientists are identifying and articulating a role for artificially produced fish as functioning components of ecosystems. Artificial production programs might be used to rebuild populations of fish that spawn naturally and also provide fish for tribal, sport and commercial harvest. In doing so, however, they should minimize the adverse impacts from interactions between artificially produced fish and those that spawn naturally. Interactions can adversely impact the unique genetics of fish that spawn naturally and, over time, dilute or weaken the unique genetic makeup of those populations.

The Council and the ISAB submitted their report to Congress in October 1999. The report was developed in conjunction with a committee of fish production experts representing Indian tribes, State and Federal fish and wildlife agencies and environmental groups. The report includes six recommendations for implementing new artificial production policies:

1. Tribal, state and Federal agencies should evaluate the purposes for each artificial production facility and program in the basin within 3 years.

2. Program managers should evaluate and improve the operation of artificial production programs that have agreed-upon purposes, consistent with the proposed policies in this report.

3. Program managers should use existing processes to implement artificial production reforms. Examples of existing processes include the annual Federal agency and Northwest Power Planning Council funding processes, Endangered Species Act implementation and the Council's periodic revisions of its Columbia River Basin Fish and Wildlife Program.

4. Congress and the Bonneville Power Administration need to ensure that money to implement the reforms is available.

5. The Council should assist in the formation of an interagency team to oversee and evaluate the reforms.

6. The Council, other regional decision-makers and Congress should assess the success of the recommended reforms after five years.

Artificial production is only one of many tools for meeting fish recovery objectives. Its effectiveness must be evaluated as objectives evolve so that it is consistent with an ecologically based scientific foundation for fish recovery. Accordingly, the report also recommends 10 policies to guide artificial production in the future:

1. The purpose and use of artificial production must be considered in the context of the environment in which it is used.

2. Artificial production remains experimental. Adaptive management practices that evaluate benefits and address scientific uncertainties are critical.

3. Artificial production programs must recognize the regional and global environmental factors that constrain fish survival.

4. Species diversity must be maintained to sustain populations in the face of environmental variation.

5. Naturally spawning populations should be the model for artificially reared populations.

6. Fish managers must specify the purpose of each artificial production program in the basin.

7. Decisions about artificial production must be based on fish and wildlife goals, objectives and strategies at the subbasin and basin levels.

8. Because artificial production poses risks, risk management strategies must be implemented.

9. Production for harvest is a legitimate management objective of artificial production. But to minimize adverse impacts on naturally spawning populations, harvest rates and practices must be dictated by the need to sustain naturally spawning populations.

10. Federal and other legal mandates and obligations for fish protection, mitigation, and enhancement must be fully addressed.

For fiscal year 2001, the Council is seeking \$1 million for new line items in the budgets of the National Marine Fisheries Service and the U.S. Fish and Wildlife Service that would be entitled "Artificial Production Review Implementation, Columbia River." The funds would be used for the completion of Hatchery Genetic Management Plans, and monitoring and evaluation activities, consistent with the recommendations included in the Council's report.

IMPACT OF OCEAN CONDITIONS

In addition to directing the Council to form the Independent Scientific Review Panel, Senator Gorton's 1996 amendment to the Power Act also directed the Council

to account for conditions in the Pacific Ocean, where salmon and steelhead spend their adult lives, in making its annual project-funding recommendations to Bonneville. This direction responds to current scientific thinking that fish and wildlife mitigation and recovery efforts should consider the entire life cycle of the species. In the case of migratory fish like salmon and steelhead, that life cycle by definition includes the Pacific Ocean. By reviewing the broader scope of impacts within the salmon and steelhead life cycle, regional decision-makers like the Council members are increasingly aware of scientific complexities and uncertainties and, therefore, are able to make better-informed decisions.

Perhaps no segment of the salmon and steelhead life cycle is as little understood as that which occurs in the ocean, yet the body of scientific knowledge is steadily increasing. To address the state of scientific knowledge and improve our understanding of the salmon and steelhead life cycle, the Council sponsored a symposium on ocean conditions and management of Columbia River salmon in July 1999. Consistent with the presentations at the symposium and Congressional direction in the amended Power Act, the Council has adopted two concepts to guide its annual decision-making: first, that the Columbia River estuary and the near-ocean plume are important ecological environments for salmon; and second, that it is necessary to modify and adjust salmon and steelhead management in the freshwater stages of their life cycles in response to changing conditions in the ocean.

Through our fish and wildlife program, the Council is helping to shape the growing body of concepts concerning ocean variability and its effects on salmon and steelhead. For fiscal year 2000, the Council directed \$5.094 million in funding to projects intended, among other things, to reduce predation on juvenile salmon and steelhead in the estuary, better understand the ecology of the estuary and near-shore plume environment, limit the effects of disease in the estuary and study the survival of juvenile fish in that environment.

The Council also is following with interest the continuing scientific research on impacts of the ocean environment on fish from the Columbia Basin. For example, we are intrigued by presentations from Dr. David Welch, a Canadian researcher whose work in the ocean off Vancouver Island and in the Gulf of Alaska suggests clear patterns of abundance and decline of salmon and steelhead from the Columbia River and British Columbia. Dr. Welch believes these shifts may be related to patterns of food availability, which may themselves be related to shifts in the ocean climate caused by global warming.

The clear message from this research is that while the ocean environment is a key factor in salmon and steelhead survival, and while its magnitude may be substantial, there is still a lot we don't know. Research needs to continue so that decision-makers will be able to structure management of salmon and steelhead in freshwater to permit their continued persistence across the full range of ocean conditions.

PREDATION BY CASPIAN TERNS

As I mentioned, Mr. Chairman, one of the projects we are funding through our fish and wildlife program addresses predation on juvenile salmon and steelhead by Caspian terns in the estuary. Specifically, the Council recommended that Bonneville contribute to the project to relocate the tern colony on Rice Island away from known concentrations of juvenile salmon and steelhead.

For the last three years, the Council has participated in funding the relocation project being undertaken by the Corps of Engineers and the National Marine Fisheries Service. In September 1999, concerned that the agencies were not moving quickly enough, the Council announced it would withhold its share of the funding—\$642,000—unless an acceptable management plan to address the problem this year were completed by November 1999.

The Council recommended that predation by terns be reduced to less than 5 percent of the migrating juvenile salmon and steelhead in the estuary. Last year, terns nesting on Rice Island are believed to have consumed about 11 percent of the migrating juvenile fish. We were concerned then, and we remain concerned today, that predation by terns has a severe impact on the fish the public is paying to produce and on the naturally spawning fish we are trying to protect. In short, the Council acted in defense of the ratepayers' substantial investment in mitigating the impact of hydropower. In November, as requested, the Federal agencies completed their management plan for 2000, and the Council approved its share of the funding. We continue to watch developments in the tern relocation project with interest.

This concludes my testimony. Thank you again, Mr. Chairman, for the opportunity to be here today. I would be pleased to answer any questions you may have.

STATEMENT OF VICTOR W. KACZYNSKI, SCIENTIST

Senator GORTON. Dr. Kaczynski.

Dr. KACZYNSKI. Thank you, Senator, Congressman.

My name is Vic Kaczynski, and I reside in St. Helens, OR. I'm a practicing fish scientist with 31 years of professional experience with salmon issues from Alaska to California.

I understand the committee is interested in the effects of climate and ocean on our salmon. My understanding that the relative importance of climate and ocean on salmon has evolved from the time that I began work in here in 1969 as relevant information became available.

When I first came to the University of Washington, I was struck with a great abundance of food for salmon in our area. In my mind at that time, from 1969 to 1972, the ocean appeared as an unlimited resource. The California current was strong, nutrients were good for phytoplankton growth and primary production rates were very high. Zooplankton were abundant and Krill were noticeably large and abundant. Krill were, and Krill are, an especially good favorite food for juvenile salmon. Herring, anchovy, and sandlance were in high abundance.

If you were a sport fisherman, you would remember the baitfish constantly hitting your line. All three of these small fish species are favorite food for larger salmon as they approach adulthood and start the return journeys back to their home rivers. Seabirds were in great abundance. You saw individual flocks of murrets that numbered in the thousands, and salmon were big, and they were abundant.

In the late 1970 era, something began to happen. It took longer to catch unlimited salmon, and some days you couldn't catch a limit, and the coho were not as large.

By the mid 1980 era it became hard to catch unlimited salmon. In 1985, I was the senior author of the Klamath River Basin Fisheries Research Plan, a project done for the Department of the Interior, which evaluated the causes for the declines of salmon runs in the Klamath Basin in Northern California.

We recognized at that time that El Niño events occurred in 1982, 1983 and 1984, and that those events recognizably caused declines in ocean salmon catches and escapement runs along the entire coast. And we recognized that the basin had suffered drought notably in 1977, 1978 and 1981. The 1977 drought year was the work on record, but we still concluded—and this was a quote directly from our report—the results of the information search indicate that the current constraints on anadromous fish production in the Klamath Basin involved overfishing and habitat loss or degradation. Our report conclusion echoed the thinking of salmon biologists at that time.

Let's skip forward to 1993, when I was the senior author of a major report that evaluated the cause for declines in salmon that still had abundance in Oregon, and the reasons for the lack of recovery. And I was a junior author of a similar report in Washington.

Our conclusion in both of those reports were that multiple factors were responsible for the salmon problem. No one factor was respon-

sible by itself, and all factors needed to be addressed for significant salmon recovery.

In both of these reports we were able to relate that inland climate changes had impacts on the freshwater stages of salmon and that ocean-related impacts affected the saltwater stages of salmon growth and survival.

We recognized that natural variability was occurring and that they were parts of the problem. However, in both of these reports, we tended to focus more on human-caused impacts, such as overfishing, dam, flood control, water use and land use. With hindsight, in 1993 we still did not appreciate the relative importance of climate and oceans and the very important and apparent salmon declines.

After completing those 1993 reports, something really nagged me. I wasn't satisfied that we had fully understood the problems. In particular, there are obvious patterns with southern chinook—that is, all chinook salmon from the Rogue River south—compared to northern chinook salmon, all chinook salmon north of the Rogue River.

All the southern chinook populations were declining; the northern chinook populations were either growing or holding steady. Furthermore, year-to-year differences in abundance were well correlated within each group but not from group to group. Further, the coastal coho populations were following the same trends as the southern chinook populations.

Some broad geographic factors were affecting Pacific Northwest salmon. The effects were major. No land use or water use or fishing pressure information could explain these broad geographic trends and year-to-year variations in salmon abundance. This was a major very important realization for me, and these observations are important in understanding our Northwest salmon problems.

I defy any salmon biologist to try to explain these broad decade-scale, geographic trends and year-to-year in salmon abundance through changes in hydroelectric use, flood control, irrigation, farming, logging or fishing pressure. One can only explain these decade-scale trends and year-to-year differences in abundance to a combination of inland climate and ocean productivity.

This is not to say that human-caused impacts haven't been important. They have been important, and human impacts need to be addressed. This says that we have grossly undervalued the importance of climate and ocean productivity. Their impacts on salmon have been grossly ignored. Too many people have blamed the salmon declines wholly on human impacts, the 4H's; habitat, hydroelectric, hatcheries, and harvest.

Condition of the California Current is a primary productivity constraint for coastal coho and southern chinook salmon. And salmon and steelhead stocks that swim through the California Current to reach their ocean pastures in the North Pacific Ocean of Alaskan marine waters have also been affected.

I describe my conclusions more in my written testimony. And I also refer to a paper that I presented—

Senator GORTON. Go ahead. I haven't called time on anyone yet.

Dr. KACZYNSKI. And salmon and steelhead stocks must swim to the California Current to reach their ocean pastures in the North Pacific Ocean.

When we've had a California Current that was strong and cool, we've had good salmon survival and growth. When the California Current was weak, from about 1976 to 1995—and 1997 and 1998 are confusion years because we had very strong independent El Niños in those years—we had warmer surface waters, lowered nutrient availability, lowered upwelling, poor phytoplankton production, poor zooplankton abundance, poor baitfish abundance, low seabird numbers, poor salmon survival and poor salmon growth.

When the California Current is strong, cool and productive, we have cool and relatively wet inland climate conditions in the Northwest. Cool and wet inland is also good for freshwater salmon survival and growth.

When the California Current is weak and warm and unproductive, we have warm and relatively dry inland climate conditions. Droughts have not been uncommon. Warm and dry inland is poor for freshwater salmon survival and growth.

These ocean and climate relationships are easiest to see in coastal coho and southern chinook salmon. In 1998, I was able to gather much available information—all that I could find at the time—and presented this information in a paper at the 49th Annual Pacific Northwest Fish Culture Conference. That paper is appended to my written testimony.

The paper presents and discusses the importance of changing ocean conditions for salmon survival in fairly good detail and the importance of climate in less detail. I am more confident in dealing with ocean phenomena and much less confident in dealing with climate phenomena.

Finally, NOAA scientists have now reported that the California Current was relatively strong and cool and very productive in 1999, upwelling was very good, phytoplankton production was very high, zooplankton were abundant, and this includes the larger desirable krill species. Jack chinook salmon returns at Bonneville Dam fish ladder were very high last fall.

These jack salmon entered the California Current as smolts in the spring of 1999 and spent some 6 months at sea. They entered a very friendly ocean with a good food supply compared to the previous 25 years. A strong jack salmon run predicts a strong adult return 1 year later. I am hopeful that we've returned to a cool, productive, salmon friendly California Current, and that we will see a proportionate turnaround on our Northwest salmon populations.

PREPARED STATEMENT

I sincerely hope that my testimony provided you with some reasonable information that can assist you in your deliberations and that can be helpful to you in producing a legislation that benefits our society.

[The statement follows:]

PREPARED STATEMENT OF VICTOR W. KACZYNSKI

My name is Victor W. Kaczynski and I reside in St. Helens, Oregon. I am a practicing fisheries scientist with 31 years of professional experience with salmon issues

in Alaska, Washington, Idaho, Oregon, and California. I began my professional career here in 1969 as an Assistant Professor of Biological Oceanography at the University of Washington. I studied the early marine life history of coho, chum and pink salmon and their invertebrate prey. I also studied zooplankton productivity in the North Pacific Ocean, and along the coast of Oregon and Washington associated with upwelling. After that, I have worked as a consultant with practically all entities affecting and managing salmon in the Pacific Northwest. I have been the Environmental Technical Director for Texas Instruments, President of Beak Consultants Inc., and Director of Environmental Sciences for CH2M-Hill. For the last 10 years, I have had my own firm. My resume is attached and it more fully describes my experience.

I understand that the Committee is interested in the effects of climate and ocean on our salmon. (I use salmon to refer to all the northwest species of the genus *Oncorhynchus*.) My understanding of the relative importance of climate and oceans on salmon has evolved with time and the availability of relevant information. From 1969 to 1972 when I was an active researcher on the early marine life history of salmon in Puget Sound and zooplankton (a primary food item for juvenile salmon) abundance related to upwelling along the coasts of Oregon and Washington, I was struck with the great abundance of food for salmon locally. Zooplankton in Lake Cayuga in central New York (where I had spent the last five years) was very sparse in comparison. In my mind at the time (1969–1972) the ocean appeared as an unlimited resource for salmon. The California Current was strong in those days. Nutrients were good for phytoplankton growth and primary production rates were very high. Zooplankton were abundant and krill were notably large and abundant. Krill were and are an especially good favorite food for juvenile salmon. Herring, anchovy and sand lance were very abundant. If you were a sport fisherman during those years you would remember these baitfish almost constantly hitting your fishing line. All three of these small fish species are favored food for larger salmon as they approach adulthood and start their return journey back towards their home rivers. Sea birds were in great abundance; you saw individual flocks of murrets that numbered in the thousands. And the salmon were big and they were abundant. It was usual to catch coho in those years that weighed fifteen pounds and a twenty pounder was quite possible. You could catch your limit of coho salmon at the mouth of the Columbia River in an hour and I think the limit was four or five salmon at that time. The general consensus in the fisheries profession was that the ocean was an unlimited black box for salmon. Freshwater conditions were the only limiting factors for salmon populations.

Then in the late 1970-era something began to happen. It took longer to catch a limit of salmon and some days you couldn't catch a limit. And the coho salmon were not as large. By the mid 1980-era, it became hard to catch a limit of salmon and the limit had been reduced to two salmon. Baitfish weren't hitting your fishing line anymore and the sea birds were noticeably fewer. But we fisheries biologists didn't make the connection. In 1984 we had a major El Niño which really whacked the baitfish and birds and this time we did make a connection when the coastal coho salmon and southern chinook salmon were whacked too. But we thought it was an isolated incidence separate from the gradual decline in coho salmon and southern chinook salmon from the mid 1970-era.

In 1985, I was the senior author of the "Klamath River Basin Fisheries Resource Plan". This report was the outcome of a project done for the Department of the Interior which evaluated causes for the decline of salmon runs in the Klamath Basin in northern California. Fall chinook salmon was the primary species of concern. We recognized that El Niño events occurred in 1982, 1983 and 1984 and that these events recognizably caused declines in ocean salmon catches and escapement runs to rivers along the entire coast from California to Washington. And we had recognized that the basin had suffered recent droughts notably in 1977, 1978 and 1981. The 1977 drought was the worst on record. But we still concluded that, "The results of the information search indicate that the current constraints on anadromous; fish production in the Klamath basin involve overfishing (particularly for fall chinook salmon) and habitat loss or degradation." Our report conclusion echoed the thinking of salmon biologists at that time. We knew there was a drought effect and we knew there was an ocean effect but we gave less weight to this knowledge and more weight to the state and Federal agency biologists opinion that the problems had to be overfishing and freshwater habitat problems. The report became Federal Law Public Law 99-552, The Klamath Act with 20 years of funding to primarily address identified freshwater habitat problems (and there were plenty of those).

Let's skip forward to 1993 when I was the senior author of a major report that evaluated the causes for the declines in salmon and steelhead abundances in Oregon and the reasons for the lack of recovery. And I was the junior author of a similar

report in Washington. Our conclusions in both reports were that multiple factors were responsible for the salmon problems. No one factor was responsible by itself. And that all factors needed to be addressed for significant salmon recovery. In both of these reports, we were able to relate inland climate impacts on the freshwater stage of salmon and ocean related impacts on the saltwater stage of salmon growth and survival. We did recognize that natural climate and ocean changes were parts of the problems and that these factors needed to be addressed as well. But in both reports we tended to focus more on human caused impacts such as overfishing, dams, flood control, water use, and land uses. With hindsight, we still did not appreciate the relative importance of climate and oceans in the very apparent salmon declines.

After completing these 1993 reports, something nagged me. I wasn't satisfied that we had fully understood the problems. In particular, there were some obvious patterns with southern-chinook (all chinook salmon from the Rogue River south) compared to northern chinook salmon (all chinook salmon north of the Rogue River). While the southern chinook populations were declining, the northern chinook populations were either growing or holding steady. Furthermore, year to year differences in abundances were well correlated within each group but not from group to group. Further the coastal coho populations were following the same trends as the southern chinook populations. And if you looked closer at the northern chinook populations, most of these had correlated year to year trends from the Fraser river in British Columbia, the Columbia River groups, the Washington coastal rivers, and the Oregon coastal rivers down to the Umpqua River. And if you looked further into the Alaska salmon fisheries, they were 100 percent opposite of the lower U.S. salmon fisheries. Some broad geographic factor(s) were affecting Pacific Northwest and Alaska salmon. The effects were major. No land use or water use or fishing pressure information could explain these broad geographic trends and year to year variations in salmon abundance. This was a very major, very important realization for me and these observations are important in understanding our Northwest salmon problems. I defy any salmon biologist to try to explain these broad decade-scale geographic trends and year to year variations in salmon abundance through changes in hydroelectric use, flood control, irrigation, farming, logging, or fishing pressure.

One can only explain these decade-scale trends and year to year differences in abundance through a combination of inland climate and ocean productivity. This is not to say that human-caused impacts haven't been important. They have and they need to be addressed. This says that we have grossly under valued the importance of climate and ocean productivity. Their impacts on salmon have been grossly ignored. Too many people have blamed the salmon declines wholly on human impacts, the four H's (habitat, hydroelectric, hatcheries, and harvest). Climate and ocean impacts on salmon have probably masked the habitat benefits that we have made here in the Northwest through advances in conservation practices in agriculture and forestry, advances in wastewater treatment, and advances made to decrease salmon impacts at the dams in operating projects for flood control, irrigation, and hydroelectric power generation.

Inland climate and ocean productivity are linked; they are not independent phenomena. The condition of the California Current is the primary productivity consideration for coastal coho and southern chinook salmon. And salmon and steelhead stocks that must swim through the California Current to reach their ocean pastures in the North Pacific Ocean and Alaska marine waters have also been affected. When the California Current was strong (eg., from about 1960 through 1975) we had cool, nutrient rich, coastal waters from Washington to California. And under these physical conditions we had good upwelling which helps keep the surface waters cool and replenishes nutrients. We had high phytoplankton growth, high zooplankton abundance, high bait fish abundance, high sea bird, numbers, high salmon survival, and good salmon growth.

When the California Current was weak, from about 1976 through 1995 (1997 and 1998 are confusion years because of independent strong El Niño events and adverse impacts on marine productivity and salmon survival), we had warmer surface waters, lowered nutrient availability, lowered upwelling, poor phytoplankton production, poor zooplankton abundance, poor baitfish abundance, low sea bird numbers, poor salmon survival, and poor salmon growth.

When the California Current is strong cool and productive, we have cool and relatively wet inland climate conditions. Cool and wet inland is also good for freshwater salmon growth and survival. Tributary streams have higher surface flows, more cool groundwater inflows, pools are larger and deeper, and the waters are cooler. There is physically more stream habitat available and it is better in quality. The mainstems of rivers such as the Snake and Columbia Rivers have higher flows and

the waters are cooler and juvenile salmon migrating downstream and adults migrating upstream have higher survival.

When the California Current is weak warm and unproductive, we have warm and relatively dry inland climate conditions. Droughts are not uncommon. Warm and dry inland is poor for freshwater salmon survival and growth. Tributary surface flows are lower, groundwater inflows are lower, pools are smaller and shallower, and the stream waters are warmer. Many stream temperature water quality violations occurred during strong drought years. There is less stream habitat available for juvenile salmon and it is lower in quality in such years.

More information on the importance of inland climate and ocean productivity has become available, especially in recent years. Now many salmon biologists and politicians recognize that these natural factors are important in affecting salmon abundance. But some people do not want to recognize that they have any effect on salmon or they minimize their importance. These people apparently have special agendas and the role of climate and ocean variability and their effects on salmon do not fit their agendas. I try not to postulate but I become frustrated at times with special agendas and politically correct science that permeates the salmon debate.

These ocean and climate relationships are easiest to see in coastal coho and southern chinook salmon. In 1998, I was able to gather much available (all that I could find at the time) relevant information on the coastal coho salmon problem and I presented this information in a paper at the 49th Annual Pacific Northwest Fish Culture Conference. That paper is appended to this summary testimony. The paper presents and discusses the importance of changing ocean conditions for salmon survival in fairly good detail and the importance of climate in less detail. I am more confident dealing with ocean phenomena than with climate phenomena.

Finally, NOAA scientists have reported that the California Current was relatively strong, cool, and very productive in 1999. Upwelling was also good. Phytoplankton production was high and zooplankton were abundant (including the desirable large krill). Jack chinook salmon returns at the Bonneville Dam fish ladder were very high last fall. These jack salmon entered the California Current as smolts in Spring, 1999 and spent some six months at sea. They entered a very friendly ocean with a good food supply compared to the previous 25 years. A strong jack salmon run predicts a strong adult return one year later (plus 2 and 3 years later for chinook salmon). And right now St. Helens sports fishermen are catching an unusually high number of summer steelhead in the Multnomah Channel, part of the lower Willamette River. This is another good sign that ocean conditions have changed for the better.

I sincerely hope that my testimony provides you with information that can assist you in your deliberations and that is useful to help produce legislation that benefits our society.

Senator GORTON. Dr. Kaczynski, let me put my first question to you then.

Does this very recent—you say 1999—return to a cooling trend have anything to do with the healthy run of sphinx chinook this year in the Columbia.

Dr. KACZYNSKI. It appears to be. I live in St. Helens, and the people there fish a lot in the Multnomah Channel, and unusual number of summer steelhead have showed up in their catch. In fact, none of the people can ever remember catching as many summer steelhead as they're catching this spring. And they've also caught quite a few spring chinook as well.

And so, yes, you do have an apparent relationship.

Senator GORTON. Even though it only started last year. So those fish that are being caught now were going downstream while you still had the warmth.

Dr. KACZYNSKI. Yes, that's correct.

Senator GORTON. So do you expect that if this continued for 2 or 3 more years, the numbers would increase even more?

Dr. KACZYNSKI. They should. It generally takes two to three cycles of salmon or steelhead to start a really good turnaround. You should start to see the benefits of the advances that have been made in agricultural conservation practices, forestry conservation,

the many things that Larry talked about in terms of the advancements that have been made at the facilities on the Columbia-Snake Rivers.

Senator GORTON. Thank you.

Mr. CASSIDY. One additional comment too, Senator. On the outbound migrant period of 1997 that most of these spring chinook went out, we had really good flows then too. And we think that made a significant contribution to getting these fish out quickly. It's pretty clear that the faster you can move them down the system and get them to the ocean, the better chance you have for survival. It isn't the only answer, but it's very important, and we had a good flow year.

Senator GORTON. Well, my next question is for you and Mr. Diggs. And I may be missing something, but I see a dramatic inconsistency.

You have told us that you now have a better survival going down river than you did before the Snake River dams were created. And you have indicated to us a very serious concern with the terns on Rice Island.

We have something that the Fish and Wildlife Service put out not long ago that States that there's a 40 to 80 percent mortality from the hydropower system on the Columbia River in these matters, and that the Caspian terns hardly matter at all.

I'd like both of you to discuss that rather dramatic inconsistency.

Mr. CASSIDY. Sure. I must say also, the Fish and Wildlife Service has been particularly cooperative in this issue. I'm not here to bash them at all. There are people in Portland who we've mainly worked with that have been very cooperative working out the agreement that I described about relocating the terns from Rice Island to East Sand Island.

The statistics about whether they're wildfish or hatchery fish that they're eating, whether the mortality occurs or doesn't occur is very difficult to define. You can ask Vic Kaczynski, you get 12 fisheries biologists in one room, you've got 24 opinions on the fishery source.

And so I do know that the particular statistic that indicates or supports their contention on hatchery consumption is that they find pit tags in the feces of the terns. Well, the wildfish aren't tagged, and so, obviously, that could be a misleading statistic.

I can't give you with authority whether his contentions are correct or not. It just is clear that they're eating them. I've been down there watching them eat them. And they're now the largest colony of terns in North America, if not the world, and we're feeding them the finest ice cream that we can, paid for by the public. That doesn't make sense to me, when we can successfully move them to another location to reduce that diet, which everybody, including Fish and Wildlife agreed to.

Fish and Wildlife Service does have the responsibility of representing these terns, and I don't argue that at all, nor do I contend they're the only problem with regard to salmon. But this particular issue's a disappointment for us, simply because we worked so hard to get to sort of ameliorated position, and here we are losing now because a private representative group sued the Corps of

Engineers, which may require an EIS, which means we maybe will lose two seasons before we get back to the program.

Senator GORTON. But I did here accurately, your statement, that you feel the down river loss due to hydropower now is less than it was?

Mr. CASSIDY. The indications from the Corps, Bureau of Reclamation Service, and the State agencies, which I believe all signed off on, is that the outbound migrant survival rate is as good as it was in the 1960s with all the tweaks we've done to the system.

Mr. DICKS. This is a transportation system you're talking about?

Mr. CASSIDY. Part transportation, part flowing through the turbines, part escapement down the fish ladders—the whole variant ways that they travel down the river, that escapement. And, of course, remember, we're piling a lot of artificial fish into that system. But they claim that the number of outbound migrants reaching the mouth of the river is equal to what we had in the 1960s and 1970s when the dam construction really got rolling along.

Senator GORTON. Mr. Diggs.

Mr. DIGGS. Yes, when the Service took a look at this issue, we immediately went to try to find out what we knew and understood about the effects of avian predation on salmonid production; and one of the only long-term work and examples we had to look at was a similar situation on the East Coast, where there was a cormorant problem on Atlantic salmon, and a 10-year effort to control cormorants as an aid to Atlantic salmon recovery. So the conclusion of that operation was that, it did not help. It did not aid.

Now, that doesn't automatically translate to what the situation here is in the Columbia, and the figures of predation are alarming in terms of the size of their numbers. But the key point we are trying to understand, as well as everyone involved in this project, is how does this smolt predation—the millions of smolts—how does that translate into reduced adult production or reduced ability to recover these fish?

And that's an issue that we don't have the final answer to at this point. And it obviously could go two ways. What biologists like to talk about at this point in the estuary is, is this predation what we call compensatory mortality? That is, is it occurring on fish that may already be predisposed to die or are going to suffer predation from the other sources of predation that salmon hit in the ocean? And that is an answer we do not have at this point.

But nonetheless, we've taken, I think, a very aggressive approach to try to control this problem, a target of 20 to 40 percent reduction. If we could see that type of result in any of the other 4H's in the next couple of years, I think we would say we've done a pretty good job. So we're committed to trying to continue this effort.

Mr. DICKS. But Mr. Diggs, it appears to me you still don't get it.

Did you hear what the doctor said down there on the other end about the ocean conditions may have more to do with this than the apparent fixation that some people have on the 4H's?

Mr. DIGGS. Absolutely. I heard it and I agree that ocean conditions absolutely have an effect on salmonid production along the coast, in the Columbia River Basin and everywhere else. But that does not mean that we stop all of our efforts to deal with those issues of man-caused mortality that we can control.

I think as evidenced by what we heard here today from everyone that's dealing with habitat restoration, hatchery reform, all those issues—as a fisheries manager, we do not manage on the margin of the uncertainty of what's going to happen in the natural world in the ocean environment. That's, to some extent, unpredictable and, obviously, uncontrollable. But we can help control and restore and habitat, hatchery reforms, control harvest, and we think those are absolutely crucial to recovery.

Senator GORTON. Does Fish and Wildlife have one of the nine representatives on Dr. Bergman's science group?

Mr. DIGGS. Yes, Dr. Don Campton is on that committee. We've participated since the beginning and have been absolutely delighted to be there and to work with this group. It's an issue near and dear to the heart of the Fish and Wildlife Service not just in Washington State but across the West Coast and nationally.

We are working very, very hard—not just here in this region, but within the Fish and Wildlife and Service and the Federal Government across the country—to deal with the issues of hatchery reform.

Very honestly, what we do here in the Northwest is providing real leadership, I think, for this issue across the country, and I know the eyes are upon us, and we're very pleased to be a part of that.

Mr. DICKS. It still bothers me. This whole thing bothers me. Here we're spending all this money, the Bonneville Power Administration is paying hundreds of millions of dollars a year, and the Corps of Engineers creates an island—from the perspective of protecting this fish—in a very poor place. And you all talk about invasives.

It's very hard to get people in Olympia, particularly, in leadership positions, to even say we've got to put any money into this issue if they don't think we're serious about dealing with these terns.

Just like Hershel the Sea Lion in front of the locks; these are things people can understand and see happening, and they want to know, "You're going to make us do what?" and then not deal with this problem.

Now, I think the plan was a good plan. I was at Bonneville, and was briefed on the problem. I think the plan has a good chance of working. But I hope we're going to stay committed to this thing. I understand the problem with the judge, but we're going to have to try to work that out.

Mr. DIGGS. We agree.

Mr. DICKS. Even though I'm getting heat in Grays Harbor. They don't want them all on Grays Harbor either.

You might want to address that, Larry.

Mr. CASSIDY. If you'd like me to, Congressman Dicks.

The idea of relocating some terns nesting sites to Katy Island and Grays Harbor involved about 300 pair of terns. We're talking close to 10,000 pair in the mouth of Columbia.

Mr. DICKS. But how many will 300 pairs be 5 years from now?

Mr. CASSIDY. Well, we've committed in the working group to reduce the habitat to one acre. And also, in meeting with Dan Roby yesterday, he indicated that we could control the number of nests—and we met with D&R and Fish and Wildlife yesterday—control

the number of nesting terns by simply reducing the habitat further if they begin to grow.

But as you know, public information tends to get askew sometimes, and the last story I heard was that we were sending all 10,000 nesting pairs to Grays Harbor, et cetera, and it never was the intention nor the goal.

But I also would tell you that without the Katy Island component, which was most important to study their diet than anything, the idea of moving them to East Sand Island has real benefit. And I once again emphasize, this was an ameliorated position. We talked about some much more stringent resolutions to this issue on the Power Council; and it was through the Fish and Wildlife contribution, and other people, that we came to sort of a mediated result, and now to see that go down the tube is very disappointing to us. And I suspect that Fish and Wildlife feels the same way; I don't know.

I would like to mention that I just was passed a note that our Governor's office has cleared the fact that Washington State will file as a friend of the court and the Corps of Engineers, which doesn't happen very often, on this particular issue. And I understand from Governor Kitzhaber, the person on the Power Council who I talked to an hour ago, they're going to join tomorrow morning as well. Maybe we can up the pressure a little bit with regard to the importance of this issue.

Mr. DICKS. Let me ask Dr. Kaczynski. I believe that what you're talking about probably has much to do with this problem. Ocean conditions have got to be a major factor.

How much research have we done on ocean conditions? Has NOAA, has the National Marine Fisheries Service, have we done anything about monitoring ocean conditions to look at all these other things?

Dr. KACZYNSKI. They are monitoring it now.

Mr. DICKS. Are they doing it now? Was there a big period there where not very much was done?

Dr. KACZYNSKI. There was a period of inactivity, a period of relatively light activity.

Mr. DICKS. Why is that?

Dr. KACZYNSKI. I don't know.

Mr. DICKS. We just didn't understand it? Should we have understood this?

Dr. KACZYNSKI. Yes, quite frankly, we screwed up. And I'm speaking as a member of the scientific community. We missed it.

Mr. DICKS. I'm going to look at your paper. I want to read your paper.

How would you evaluate the 4H's versus ocean conditions? How do you balance this? Is it 80/20, 50/50? Can you give us any help so we know something or have at least a better feeling for the significance of this?

Dr. KACZYNSKI. The only way I could even try would be with the relative survival of coho salmon in freshwater, which the best estimates put it around 3 percent. And that's from about a half dozen scientific studies.

In contrast, the survival in the ocean for coho salmon, coastal coho salmon, has been as low as perhaps as $\frac{1}{2}$ of 1 percent here

in the 1990s, when you had really deleterious conditions, to as high as, perhaps, 14 percent back in the 1960s.

Mr. DICKS. You're talking about return fish; 1.5 percent were returning and then it went up to 14 percent coming back?

Dr. KACZYNSKI. No, I'm just talking about the survival in freshwater. The best estimates say it's about 3 percent, and those estimates don't have as much variation about them as the estimates from rain survival, that is the period when—

Senator GORTON. When you say freshwater survival, you mean fish that never leave fresh water; is that right?

Dr. KACZYNSKI. No. No. I mean from the time the egg is laid in the gravel until the smolt goes out.

Senator GORTON. The survival's 3 percent.

Dr. KACZYNSKI. About 3 percent is the best estimate.

Senator GORTON. And then of that 3 percent, the ½ percent to 14 percent is figured?

Dr. KACZYNSKI. No. When the fish enter the ocean as the smolt, until the time they return as the adult, here is where your survival really bounced all over the place.

Senator GORTON. Because of ocean conditions.

Dr. KACZYNSKI. Because of ocean conditions. About ½ a percent we've observed in the 1990s when the oceans were the warmest, conditions were the worst—

Senator GORTON. And that's ½ of 1 percent—of the 3 percent who get there?

Dr. KACZYNSKI. Exactly. And to a high of perhaps 14 percent. So if I look at the magnitude of the range of survival, which is very high in the ocean and not as high in freshwater, would suggest to me that the most important thing is happening in the ocean. That's the only way I have to evaluate it.

Mr. DICKS. Larry.

Mr. CASSIDY. Congressman Dicks, I'd support what Dick says, but I would give it to you in maybe simpler terms because I'm not a fisheries biologist, I'm a businessman.

We can't have salmon runs without some sort of freshwater component that's receptive to them. But the process in the 1950s, 1960s, 1970s and 1980s in the Columbia-Snake Basin where I do most of my work, was that we changed the component of the river for social and solid economic reasons. And then as we changed the tributaries we said, let's not worry about that, we'll artificially produce these fish and pour them into the system. And then we sat there and ignored the ocean as a black hole for all the time I've been involved in this issue.

There is a Canadian oceanographer named David Welch—who, I agree, doesn't have peer review of his work yet, but he's very exciting to talk to. And I would urge you to read his material and get in touch with him, and of course, consult your own scientist as well—who has come up with serious work in the ocean about where these fish are migrating, what the food supply is, what the global warming issue may be impacting with regard to the North Pacific and the food supply for salmon.

And there is a possibility that we could be doing all this work, which is, of course, beneficial—clean water in our State is a component to the lifestyle we all enjoy—but there's the possibility we

could do all this and still have trouble in the ocean. And if there's anything I think the three of you could work on, would be to contribute the significant amount of the funds we now spend to where we really find out the story of the ocean, what's going on and why we ignored this black hole all these years. We need to know.

A salmon spends 75 percent of his life in the ocean and 25 percent in freshwater either going out or coming back. To me that makes basic sense. We need to study the ocean now, and it needs to be, I think, urgent.

Mr. DICKS. Thank you.

We've all been worrying and concerned about this decision on the Snake River Dam. I mean, to me this is just another—this, and the fact that the transportation system is working, surface collection is working, a lot of these other things that we can do to get these fish down the river are working, and we haven't looked at the ocean—I mean, to me, I don't see how we could possibly make a decision to take those dams out without knowing the impact of the ocean conditions on this equation. This seems to me it would be a serious mistake in judgment.

Senator GORTON. Congressman Inslee.

STATEMENT OF REPRESENTATIVE JAY INSLEE

Mr. INSLEE. I want to ask a question, but would you allow me to make a brief statement? Is that allowed for freshmen Representatives?

Senator GORTON. Yes, I certainly will.

Mr. INSLEE. I appreciate that.

I just want to say something that listening to this discussion and all of the other discussions I've been involved with for salmon for some time, I think we can get in the wrong mind-set a little bit. And I want to comment on it, because it reminds me a little bit about the defense propounded by the six fellows involved in the bank robbery, who all defended themselves, by saying the other guy took more money than I did; and therefore, I am innocent.

And in our salmon discussions, that syndrome of essentially, no matter what we're talking about, asserting some other cause as being a greater contribution to the problem than ours, is self-defeating and doomed to defeat of our mutual efforts to restore these stocks.

And I really think that if we spend our time on that discussion, that if we wait until the last somebody else who had not exhausted what they should be doing to recover these stocks, disappear, the salmon will too.

And I just think that in our discussions we've started we've got to stop asking what somebody should do to recover these stocks, and start asking what we should do individually to recover these stocks. And I think we ought to keep that tenor in these discussions.

And this discussion—and I don't want to cast dispersions because this is an extremely important discussion. But I just don't think we can even lose site of the fact that the Creator may have some bearing with temporary climate conditions as well, and to deviate 1 second, one heartbeat, one moment, to deviate, trying to figure out

what we should do to recover these stocks. And I just want to make that comment because I think it's an important one.

And I want to turn to the science of this because I think this is an intriguing discussion.

Doctor, first off, how do you characterize the extent of reduction in the stocks versus pre-European arrival levels, if you will. If you were going to put it at a percentage, where would you put it? Let's take Columbia or Puget Sound separately, if you can—

Dr. KACZYNSKI. I'd rather stay with Columbia Basin.

Columbia Basin, you might be at 30 percent historical pre-European settlement. And much of that has to do with all of the historical habitat you have cut off. There's just no way to replace that kind of production.

Mr. INSLEE. Well, I guess you've said we've had somewhere in the order of a 70 percent reduction—

Dr. KACZYNSKI. Something like that.

Mr. INSLEE [continuing]. Associated, at least to some degree, with habitat.

Dr. KACZYNSKI. If not more.

Mr. INSLEE. The reason I ask is, are you asserting or are you of the belief that there is some transient, climatic, ocean-related problem that just occurs on a period-like basis that would cause a 70 percent reduction?

Dr. KACZYNSKI. That's reasonably—well, I don't think you could say that it's all ocean. I agree with the statement, you must also address your human impacts as well. You cannot ignore them. But you can see these periods of ocean and climate changes.

They've been traced back with good correlations between sea surface temperatures and growth rates of Eastern Oregon Juniper, and then you can take the growth rates of the Eastern Oregon Juniper by taking a core, a plug of wood out of that, and looking at the growth rates in the Eastern Oregon Juniper.

You can go back 500 years, and you can see that for 500 years you have had these cycles of cool, wet, inland climate associated with a cool productive ocean and a dry warm inland climate associated with a weak, warm California current. And on average over the last 500 years, these cycles have averaged 17 years.

Mr. INSLEE. But have you also seen a 70 percent collapse on salmon stocks in the Columbia Basin on a periodic basis? And the reason I ask is, frankly, I find it hard to believe that's occurred or man may have been extinct besides the salmon, frankly, for all those years.

Dr. KACZYNSKI. I want to take a look at that a little bit harder to see if you can go back in. It's very hard to go back into the historic record to see this. The historical fishing, which occurred at the turn of the century, I mean, basically, came pretty close to wiping a lot of stocks out. And you had a very low period of activity in the 1940s and 1950s. And then starting in the late 1950s you appeared to have an increase in productivity which carried through until about 1975. And then in 1976, which is a little bit closer than some of the installation and operations of the dams up river, you had these disappearances. It's coincidental.

Mr. INSLEE. Knowing what you know, assuming that we as a community have a goal to restore the salmon runs, are you sug-

gesting to us that we should diminish our efforts on all the other 4H's at all?

Dr. KACZYNSKI. No. I say you proceed cautiously. You need to factor the ocean survival very carefully into your allowable harvest rates to ensure that you get your return runs that can saturate—I want to see these fish saturate the environment proportionate to their ecological capabilities. I don't want to see these junk runs showing up in the stream; I want them saturated with fish.

Mr. INSLEE. Larry.

Mr. CASSIDY. Jay, let me just share a couple statistics that sort of registered in my mind, and I think it will make sense to all of you too.

If I remember right, I think 16 million was the estimated total amount of settlement at the best years ever in the Columbia Basin, somewhere in that area, and we're down to about 2 million in the assorted species now. And I would refer you to one chapter in Lichatowich's book, which deals with the Fraser River.

I believe in 1912, they had their best run ever of sockeyed salmon. He estimates it at 100 million fish. Now remember, 16 million was the best estimate that Columbia Basin ever had clear into Canada. There were 100 million sockeye in a river in Canada, the Fraser River.

Then they had a landslide, Hellsgate landslide, which cut the river down to 80 yards in width several miles up. Four years later the sockeye run was 8 million fish, and it never recovered. Now, they took the slide out. They went in there with machineries in later years, removed it, put the habitat back to the way it was, but they never recovered from that one impact on habitat in the river.

So the ocean is a key component, but we can't ignore what we're doing, and we can't stop what we're doing in our State.

I think the real problem is, as many people as there are in Washington State that enjoy the salmon resources, there are many people, particularly in Eastern Washington—where significant impacts are going to have to occur—that aren't aware of this issue; and they're struggling economically to begin with. And how we bring that public awareness to them is the real issue.

I think that if we can bang a billion bucks between Bangkok and Beirut by computer and send guys to the moon, we can solve this salmon issue, but it's going to have to be a joint effort. Everybody's going to have to be working together. It's going to be your folks in Puget Sound reaching over the mountains to the people in Eastern Washington, saying, we've got to do this together. Because it ends up with NMFS forcing it down people's throat, which is a likely alternative if we don't get this worked out in advance—and that's what Governor Locke's trying to do—then it's going to be extremely more difficult if not impossible. And the Okanogan and the Methow are examples.

But this is a partnership, and it really has to happen. And that's the role I think all of us—you and I and everyone else—must play. We have to bring all these issues out and continue this public education.

And frankly, I think it's going along well. I see my grandkids talking about salmon and working on issues that didn't even exist.

I've been around this camp for a while. I could be Bill Frank's brother I've been around this camp for a while.

But in any event, it's just important to know that the public awareness is now, and this issue is before us for perhaps the best opportunity in any time before or after. Now is the time to get it done. The next few years are very critical to getting this done. I think we have public energy.

Mr. INSLEE. I have one more question, Senator, if we've got time for one more question.

Doctor, I was reading some issue about climate change issues the other day. And I've read that some of the modeling that's been done to try to predict atmospheric temperature associated with CO₂ density or concentrations, that for a long time the models predicted a high atmospheric temperature, and there's always been a question, where is that missing energy from the models.

And I just read about a week or two ago that there was some new research that indicated that they'd done a rather pretty fantastic global sorting of old records about oceanic temperatures, and that this research came back to suggest that that missing energy is in the oceans essentially.

Dr. KACZYNSKI. I read the same report.

Mr. INSLEE. First off, does that have any meaning to you? Is it significant in this issue? Could it be associated with this problem?

Dr. KACZYNSKI. It scares me, yes.

Mr. INSLEE. Tell me why. What do you mean?

Dr. KACZYNSKI. Because if that's correct, then we're heading to this scenario that Larry talked about, Dr. Walsh's scenario, that the oceans are going to continue to warm in response to this global warming, and if it's being driven to greenhouse gases or whatever. And if his scenario is right, there's not going to be a salmon left alive in the entire northeast Pacific Ocean; they're only going to be alive from the—sea, north.

Mr. INSLEE. Do you think the science is credible enough that is a realistic concern of yours? I'm just going to ask your personal opinion?

Dr. KACZYNSKI. I'm concerned. And there's one thing that kind of bothers me about removing of the dams. If that scenario's correct, how do you replace that electricity other than by fossil fuels, which increase CO₂, which increase the greenhouse effect? I don't know how do we value that. I would like a atmospheric scientist to take a serious look at that.

How much would you spike the CO₂ greenhouse effect if you had to replace the hydroelectricity in the Columbia-Snake Basin with fossil fuel production? I cannot answer it; I'd really like it addressed.

Mr. INSLEE. Well, I'm going to end my questioning, so we can save lights and save energy through conservation. How's that?

Senator GORTON. Thank you. This has been an interesting group. I guess, Mr. Diggs, you stay.

Mr. DIGGS. I stay.

Senator GORTON. You stay. And Will, if you and Bill Ruckelshaus would come up.

STATEMENT OF WILL STELLE, REGIONAL ADMINISTRATOR, NATIONAL MARINE FISHERIES SERVICE

Senator GORTON. This last group—the audience isn't here to give a formal testimony, but to hear from Bill Ruckelshaus who's been here all day and from Will Stelle, who's been here most of the day, what their reaction is to what's going on here.

Bill, you were here first. We're going to give you the privilege of going last.

Will, do you have any informal reaction, at least, to what you've heard this afternoon?

Mr. STELLE. Yes. And thank you, Mr. Chairman, for the opportunity to appear here. This has been a great day, a great afternoon.

My name is William Stelle, and I'm the regional administrator of the National Marine Fisheries Service for the Pacific Northwest, and I live day and night in salmon land, as you might well appreciate.

Let me give you some summary observations on where we are now, a year after listing chinook in Puget Sound. And I will focus my remarks largely on the Puget Sound work that is underway.

First, obviously, the most important reference point is the listing itself and what it means. The heart of the listing decision is the scientific judgment that if we keep doing what we're doing, there is a high probability that Puget Sound chinook will go extinct. What we learn from that most fundamental point is that we must change what we're doing if we are going to have salmon in our future. The status quo equals extinction.

That change must be comprehensive and it must be durable. And you understand the point about comprehensiveness; the issue of durability is of equal significance.

The solution here will not be a flash in the pan. The solution here will be a permanent change that will effectuate improvements in salmon survivals on the health of our river systems over decades. This is a long-term proposition that we face, and we should organize ourselves and prepare for the long-term because it will require long-term durable commitments.

Do not expect success in a year or to because it will not be forthcoming. Expect progress and insist upon it but understand that we must gear ourselves for the long haul because it will be a long haul, and it can be a successful long haul.

At this point in time, my own view is that we have cause for substantial optimism in the effort underway here in Puget Sound. Why? It is because we are making substantial progress in constructing the basic building blocks for that long haul, and it is just that simple.

Have we fully constructed all those building blocks? No, sir, we have not. Will it take more time? Yes, sir, it will. But we have made substantial progress in them.

What are those building blocks for a long-term successful effort?

Science capabilities. We are putting into place more sophisticated, more focused science capabilities at the Federal level, the State and tribal level and at the local and private level to help guide us in our efforts. Building those science capabilities is essential because they will be headlights on the automobile that help us steer through the darkness.

Second, we are building the institutional capacities that will be necessary in order to achieve success at all levels. You've heard here today about those capacity limits that a number of different levels of effort are encountering. Those capacity limits are real, but nevertheless, we are building that capacity at the local level through the watershed councils, in the tribal governments, in State capacity and in the Federal capacity.

So again, the second key building block is building the institutional capacity to get the job done, and we are making good progress.

Third. Are we doing what all of this should be focused upon, which is putting into place the protective mechanisms to help protect the fish and rebuild the productivity of this system? And the answer is, yes, we are, as you have heard this afternoon.

On hatchery reform, we have made huge reforms and are in the process of huge and substantial reforms in the hatchery system here in Puget Sound. Those reforms are essential, they will contribute to the rebuilding of chinook populations here in Puget Sound, and we will put them into place.

In answer to the earlier questions of, is NMFS a part of this effort, and we will use our abilities to help put them into place? The answer is yes on both counts, and you can count on it. So you can check yes in that column, unequivocally.

On harvest reform. Have we made substantial changes in the way we approach the management of our fisheries here in Puget Sound to build towards that new paradigm? And the answer again is yes. We're not 100 percent there, but I would say we are about three-quarters there in developing new, more sophisticated, more weak-stock sensitive harvest management regimes so that we protect the necessary escapements to rebuild the populations which themselves will be the building block for long-term, health Puget Sound chinook ESUs. So in the harvest column, check yes.

On habitat. Habitat, as you all know, is the tough nut to crack, and I do not think that we should expect that we will fix the habitat problem in a day or a week or a year or even longer, but we have substantial efforts underway in taking a hard look at the habitat issue and developing strategies to address it. And I think the showcase for that is the Forest and Fish agreement here in the State of Washington, which frankly, 10 years ago would have been filed in the fictional category. It is now real, it is committed to, and we are implementing it.

So again, on the habitat strategies, we are making progress, and it is a cause for optimism.

Planning for future efforts. While we get on with the case of implementing the early actions that we know will benefit fish, are we building the planning mechanisms to make us smarter, better, more efficient? And the answer there, again, is yes. At the Federal level, at the State level, at the county level, and at the private level, planning efforts are underway to get the job done and to get it done most efficiently.

Another key building block for a long-term campaign to rebuild Puget Sound chinook is funding. This will not happen if it does not have the funding to make it happen. Have we begun to build the funding mechanisms that we will need to be successful? And the

answer there is, again, yes, we have, due in no small part to your contributions.

They are absolutely essential. They are not sufficient, but the State has stepped up with funding mechanisms. The private sector is set up through the establishment of the Puget Sound Salmon Foundation, and all the necessary building blocks for funding are being put into place. And again, that is a case of huge progress.

Finally, public education, public support and the taking of responsibility at the end of the day will be the key to success. And I would offer as exhibit B on that point yourselves.

Look at the quality of the sophisticated questioning that you are bringing to bear to these panels here and the quality of this debate. And ask yourselves, are we getting educated on what it's going to take? And the answer is, yes, we are, across the board.

That education coupled with the plain old public commitment that the public wants salmon in our future will be the key to success, and we are making huge strides there.

So my report card to you a year after listing Puget Sound chinook is that I think that we are making huge efforts in putting together the basic building blocks.

Is the perfect salmon recovery machine developed and implemented? No, it is not, and it will take several years. We are in a period of incubation, we are in a period of experimentation, and from my own personal view we should not rush to freeze out that period of incubation because seeds are being planted through the watershed councils and through private efforts that will grow into solutions that we today can't imagine. And I think we need to be a little patient in not trying to over-engineer the system. We are fertilizing it with the efforts that we need now. Let those seeds of creativity grow. Let inventiveness occur, and in 5 years we will have strategies and institutional capabilities that we are not even thinking of today; and that is all for the good.

I would be happy to go over some key issues, but I think in deference to the time here, I turn it over to the other.

Mr. DICKS. What about your staffing level?

Mr. STELLE. A couple other key issues, one of which is bottlenecks. Are there problems with bottlenecks? Absolutely. And again, they are very serious with my agency. My agency's a little agency. We have about 130 people running all of our regulatory programs in Oregon, Washington, and California, and that's not enough to do the job. It's just not enough.

So there are bottleneck problems, and they are significant. And if you'd look at the simple map of these listings and understand what it means, you will understand that those bottlenecks are real and getting more and more challenging. We need to deal with that.

Having said that, issues with Federal capabilities are not the only issues where there are bottlenecks or capacity problems. As you've heard from some of the earlier panels, some of the counties absolutely need better technical assistance in order to do the planning work that they need to build their homegrown solutions; so too with the local lead entities.

So the capacity issue is not unique to the Federal agencies, it is shared with the other entities in the effort. But it is a serious problem, Congressman.

Senator GORTON. Mr. Diggs, do you have any more further comments at this point?

Mr. DIGGS. Yes, I do, frankly. Can I have a few moments?

Senator GORTON. You go right ahead.

Mr. DIGGS. I'm going to give my comments in the context of the Fish and Wildlife Service's role in salmon recovery and restoration. Just to make sure everyone is not confused and understands what that distinction is. I get this question often.

And we understand what NMFS is doing with salmon and ESA, but what do you guys do—well, obviously, we're working very closely with NMFS on the ESA aspects of salmon recovery, but also this agency that I work for is an action agency in regards to salmon restoration recovery.

We've been out here on the west for over 100 years, and so the comments I'm going to give you today at this point are kind of my perspectives on what do we need to be doing as an action agency. And related to the comments I heard earlier today from particularly the first panel, I found that an extremely informative and fascinating discussion.

First of all, it hit me, listening to the people, such as Mr. Ruckelshaus and Mr. Sims, that we here in the government agencies are not communicating past each other any more. We're not talking past each other with the people that we're working with. I heard from that panel a lot of the same types of things, the same type of language, the same type of commitment to salmon recovery and restoration that we have. So that was very heartening to me.

So just a couple of issues. I'd like to focus on some of the habitat issues and then hatchery reform.

When it comes to what we're doing to try to restore habitat, whether it's salmon or bull trout, we in this profession have some idols. And there was one fellow some years ago that said, "If you're not focusing on the watersheds, you're really missing the picture", Mr. Aldo Leopold. And so that's absolutely the first message.

As we deal with these issues here, we need to be focusing on the watersheds, not just the species, but the watersheds. And that's a message I really want to deliver from the Fish and Wildlife Service. We're focused on everything that happens in that watershed, and there's a lot of benefits to that.

I mean, there's just been an assault of listings under the Endangered Species Act, but if we're addressing fixing watersheds, fixing water quality, fixing habitat, that should be ameliorated over the long run.

So I heard mentioned that we need a common watershed assessment process. As part of everything that's ongoing up here in Puget Sound and coastal Washington, I believe that's an absolute must, and we're committed to assisting and helping develop that process in whatever forums that takes place.

Second, Mr. Ruckelshaus said, increasingly science is informing our decision. Well, this is music to a biologist's ears like myself.

Absolutely, we have to have good information and good science, and there are obvious reasons for that. First, we want to make sure that what we're doing is going to work. Second, if we don't have good science we get called to task for it and quite regularly. We end

up in court. We end up a lot of places we don't want to be if we're not doing things right and operating on good science.

So we encourage and support all those efforts that are ongoing, as in the hatchery reform effort to increase the quality of our science and all those efforts in habitat restoration and get a better understanding of what works best and when is the right time to apply it.

Third. A key to this and habitat restoration is the development of partnerships, and we heard a lot about that today at the local and State level. And I want you to know that the Fish and Wildlife Service is absolutely committed to that. We are participating in all those forums you heard today; Timber Fish and Wildlife, Agricultural Fish and Water, The Tri-County agreement, Salmon Recovery Board, the forest fish and report process. We're there, and we're committed to being there. We get spread thin, no doubt about that, and maybe I'll get the same question that Mr. Stelle did a moment ago.

Fourth. This is an area we think and that we heard today that probably we need to do more of and do better on, and that's this program coordination. There's a plethora of efforts underway out there. We've got to make sure that they're coordinated, that they make sense, and that what we're doing is having the results that we expect and need.

I've spent 25 years in the Fish and Wildlife Service and most of that in Pacific salmon restoration. And we're hearing the criticism about how much money it's costing down in the Columbia River, the billions of dollars that are being thrown around. We're sensitive to that. I think everyone is sensitive to that; that these dollars don't come easy, it's not cheap. And the public and the Congress should expect that there will be results.

And so one of the things that's going to help facilitate particularly is there's a sense of urgency—and we are seeing more funding come this way—is to make sure that it's done right, make sure that it's spent right. So coordination overall is a key thing we need to do.

Fifth, maybe finally. We need to provide oversight and review to ensure that when we are investing habitat restoration, again, that we're getting the results. So monitoring and evaluation is an absolutely crucial thing that we need. I know that's a great frustration in my agency. As we work on the front end of these issues and develop habitat conservation plans, whether it's the forest plan, whatever, that the key to that long-term success is getting out there and see if it works. And very honestly, that's one of the areas we have not been funded well into; and it's something that, not just at the Federal level, but at the State level and the local level, we all really need to focus on. We need to monitor, we need to evaluate the results, and I believe this is still kind of an unmet need that we face.

Finally, just on the issue of hatch reform. I spoke to that on the last panel, but it's an opportunity for me to just reemphasize that.

I recently finished visiting every congressional district in Oregon, Washington, Idaho, every Senate office here. We're making visits to you up on the Hill. And one of the things you're hearing from

the Fish and Wildlife Service is this is an extremely high priority for us, not just in this region, but nationally.

We're ecstatic about what we're seeing in terms of the collaboration between the States, between the tribal partners and between the Federal agencies, and we're linked together now, I think stronger than we ever have been before. And there are keys to making that a long-term success, and one of those is the fact that we have created these independent scientific reviews. We're bringing science into the culture of salmonids in a way that we've never have before.

And I just want to thank you, Senator Gorton, for your efforts in supporting that, and know that the Fish and Wildlife Service and the National Marine Fisheries Service is committed to ensuring that, when we're operating hatcheries we're doing that in a way that it's part of the solution, not part of the problem. We're meeting those multiple objectives that we have, whether it's creating fisheries for tribal harvests, sport harvests or help in restoring endangered species. And we're just committed to that. Thank you very much.

Senator GORTON. Bill.

Mr. RUCKELSHAUS. Mr. Chairman, let me make just really one point, and that is, I think what you've heard here all day, and what I've heard here all day listening, is the imperative of the need for a shared strategy for what we're doing.

When the Endangered Species Act was passed, and the Clean Water Act was passed and a lot of other laws that we're trying to implement together and regulations under these laws and counterpart laws at the State level, none of these acts contemplated something as complex as these multiple species that had been declared threatened and endangered, that overlapped one another. And there are ranges that affect metropolitan, suburban, rural, forested areas throughout our State.

This is not what the drafters of these laws had in mind when they were passed. So in my judgment, at least, it's little wonder that we're having trouble with all of the various agencies and departments that are involved in trying to administer these laws, in a set of conditions that weren't understood when the laws were originally passed, are having trouble doing that. They're stumbling around over one another and pursuing their own jurisdictions, and it's difficult to a rational strategy or a rational set of approaches to bringing these fish back that take into account things like decadal oscillations in ocean conditions and how should we think about those.

What NMFS says in its status document which declared the chinook as threatened is that, yes, these decadal oscillations exist. They're not even decadal. Why they are called decadal, I don't know, because sometimes they last a lot longer than that.

But what happens that, we've seen when they're coming back—if this is a normal run—then they drop off when the ocean conditions change, and they come back, but they don't come back as far. And then they drop off again, and they drop down further. So that the trend over several decades, if that's the right measurement period, is downward.

Now, is that right? Is that challengeable? We ought to find out if it is. And if we're, therefore, wasting money because we're dealing with a problem that's beyond us, all right. But that's where the science is as far as that status document is concerned.

It seems to me that I think this is a very good thing that you've done here, Mr. Chairman, in pulling us all together, just like you did a year ago and that Congressman Dicks and Congressman Insee are participating. Through your political leadership, you're forcing attention to be paid by all the various agencies, including the SRF Board, that is trying to deal with a mix of these issues, and to come together and come to you and try to say what's positive about what's going on, and at the same time pledge to you that something like this is what we need.

We need a strategy that says, here are the things that we've got to address, here's the sequence in which we ought to address those, and we're all committed to do it so as to cause as little disruption—the human kind—in this area as possible.

This won't happen unless we develop a shared strategy. I'll guarantee you it's not going to happen, unless we all say, these are the things we need to do in this sequence, and we're all going to pull together in doing that. Because if we don't do that, we're going to have serious problems. There are positive things that are happening, and those things ought to make us feel good about the last year.

Those positive things—the 4(d) rule issues, when the co-managers established their rules, their goals, when the technical review team for Puget Sound establishes its rules, unless those are all coordinated—those are just three things, and those are all harmonized with the hatchery reform, with the harvest—not necessarily harvest reform; there is reform going on. But there needs to be a lot more transparency in our whole harvest process and decisions that are made, not just here in this State, but between us and Canada and Alaska; that all needs to be understood and harmonized. If that isn't coordinated, we're going to have serious problems.

Now, we're trying very hard to coordinate it in the process that I mentioned, and here's the early stages of that coordination. We're trying to bring this to fruition by the end of next month. That's a very ambitious undertaking on the part of the people involved in that. We're then trying to expose a much broader group of people to get them to buy into the same strategy.

If we can do that, then we have, I think, a real chance of success. But pulling all these pieces together and drilling down into these individuals, and finding where the conflicts lie and trying to resolve those and get us all on the same stage is a very large undertaking, a very complex one.

We need political leadership in order to get this done. We need to have our feet held to the fire. We need to have people continue to say, I understand what you're up to, and we need to see some success in this. We need to have you come back to us with a strategy that we understand and that we can communicate to our constituents and that everybody else can understand.

I agree with what was said. I think planets are lining up here, and we have an opportunity to accomplish a lot, but it's just a mo-

ment in time. And if that moment passes us, all this enthusiasm that many of us have seen and pointed out, what's going on in these lead entity watershed groups by restoring habitat, could stop in a hurry if the government's efforts are not coordinated and fitted together neatly and pushed forward. And I think it's your pressure and political leadership that is needed, and it's needed across the board or we're not going to make it.

Senator GORTON. Will, I've got just two questions for you. I'm not sure whether you were here during the first panel, but the two county executives both reflected what we read in The Wall Street Journal yesterday, the Tri-County effort—

You haven't seen that?

Mr. STELLE. No, I haven't. I'm not sure it was all true though.

Senator GORTON. That the Tri-County effort that they had hoped to be done by the first of June really can't be done by then. And both they here and their spokespeople in this Wall Street Journal article were expressing the hope that there was some flexibility in announcing and implementing 4(d) rules so that they could get their act together and be a part of it.

And I'd just like your comment on that desire and that process?

Mr. STELLE. I was here, and I did hear those comments, and I understand that circumstance.

And the question is, are we going to be able to accommodate the need for more time before the 4(d) rule for chinook in Puget Sound gets into place or takes effect? And I am optimistic that the answer to that is yes.

Senator GORTON. That's wonderful. I'm not going to pursue it any further.

Mr. STELLE. I have to have some conversations with my lawyers, but they're in the works.

Senator GORTON. Fine. And the second that you also heard here was a fairly, widely expressed frustration on the part of these citizen groups against the governmental groups that they were being subject to section 7 consultations even when—as they put it at least—they were talking about positive projects rather than the kind of projects that might threaten salmon recovery.

And because they are a citizens group mostly operating through volunteers and on very, very small budgets, don't we face the very situation that Bill warned us of? If we subject these citizen groups to too many frustrations and too many procedural requirements, do we lose their enthusiasm and their ability to do good things, particularly for our habitat? Is there a way around that so that they can continue in the future to do the kind of things they've done in the past?

Mr. STELLE. Senator, it's a real issue. It's one that I absolutely acknowledge, and we need to try to figure out how to minimize the risks of that happening. From my perspective, I see a couple of choices here.

First of all, for those restoration projects or undertakings that require Federal permits—and a lot of the in-stream work require 404 permits, just plain and simple—that requirement does trigger consultation obligations.

That's unavoidable; it's the law. So the obligation for us and the Corps of Engineers, who is the permitting entity here, is to figure

out a way to go programmatic, put into place the guidelines for restoration activities, that if the projects are properly designed in accordance with those guidelines, you avoid case-by-case, project-by-project reviews.

Senator GORTON. Are you close to reaching that goal?

Mr. STELLE. We have serious negotiations with the Corps on that subject, largely in the Oregon district because it's the same issue in Oregon as it is up here. And I don't want to leave you with any happy talk; it's hard. It's hard. But that is the course that we need to pursue.

The second is, where there aren't Federal permits, so you don't get caught into this section 7 consultation obligation, then what about the take liabilities? I know that in our proposed 4(d) rule we had a whole series of fairly complex limitations that would have been proposed in order to avoid as a formal matter potential take liabilities for restoration activities over the short-term and over the longer term.

In the final rule that we will release later on, I think that we will reshape the way we approach that subject, to add a little bit of—and this is not really a legal issue; it's a common sense issue.

If local groups are engaged in watershed restoration activities that are consistent with watershed planning guidelines developed by the State and funded through the board; and if they happen to have the potential to cause injury to fish, which is really the legal issue on take—if that's happening, what is the remedy? What is the fix for that?

The fix for that isn't some sort of law enforcement action against that watershed group, that's a nutty idea. The fix for that is to take a look at those guidelines and make adjustments in them so that you reduce the likelihood that there may be some adverse injury that nobody wants.

So in that case, that's not a legal solution; it's a practical solution. It's a statement by us that the remedy, in the event that there's some potential take liabilities for those problems, is to work with the State to develop the right kind of guidelines to avoid it. It's not lawsuits; that makes no sense at all.

And I think that if we come out with a fairly formal statement along those lines, then that will take a lot of the pressure off of the local watershed groups, that they may be in some sort of hot water with NMFS enforcement on those types of activities. Again, there are four far more higher priorities, from my perspective, on enforcement action, not that stuff. So a little dose of common sense here.

Senator GORTON. I do have one more.

Are we're going to be able to avoid this year the highly localized, but nonetheless locally catastrophic kind of situation we faced in the Methow last year?

Mr. STELLE. A couple of responses.

The first one, which is the safest one, is I sure hope so. The second is that we are, in fact—we're in a couple of the ditches making some very substantial progress in negotiating longer-term strategies that can solve the problems and obviate the need for short-term shutdowns. And I'm hopeful that those agreements are going to be cemented fairly soon, in which case, again, that's a solution that we need to put into place.

Part of the problem in the Methow is going to be some funding from some source in order to try to finance the putting into place of a longer-term, more comprehensive water management strategy for the Federal ditches and the non-Federal ditches so that it's more fair and more effective. I think that discussions are underway very actively to try to identify how we can solve that problem in that particular sense.

Senator GORTON. Good.

Norm.

Mr. DICKS. Bill, you heard the complaints about the matching requirements. It's clearly a problem, especially for some of the groups that are nonprofits and don't have a lot of money.

What do you think we should do about that? Are we causing this problem at the Federal level?

Mr. RUCKELSHAUS. Well, I listened hard to what people had to say about the SRF Board policies, and I take it to heart. Our first process wasn't perfect; we've got a lot to learn. And we're going to try to adjust to some of these because we really do see our role as being in a partnership with these groups that are making application.

As I mentioned, undoubtedly, somebody will come up and tell you after the hearing. But I was not aware that anybody withheld a project because they weren't able to meet the 15-percent matching requirements for the SRF Board funding.

Mr. DICKS. They have to have one-on-one. They have to have 100 percent match.

Mr. RUCKELSHAUS. But that's part of the requirement from the Congress in the agreement that they have. So they'll be funding a somewhat different kind of project maybe than we would. We had a lot of discussion of this, and we put it out for public comment and review. We got some negative comments back from people about the 15-percent match that the SRF Board has.

I was just a little reluctant to go ahead and spend taxpayer's money without any match coming from the grant, and other members of the board were too. Because if people don't have any skin in the game, they don't tend to pay as much attention to other people's money. And we were able, I think, as a result of that match to get a very good mix of projects. And they use imagination in matching the money, but that's all right. I mean, we're willing to be flexible on that score.

Mr. DICKS. Well, I think the idea of building up capability is also important. As I said, I've got some counties out there where they just literally have one person. Barbara Woods, sitting right here in the front row, is the one person from Mason County.

And what are you doing here today? You should be back working.

Do you still think we need a coordinator?

Mr. RUCKELSHAUS. We need a coordination policy. We need a coordinated process.

We're trying to do that. Let me make clear, everybody's that involved in this who's testified here today is in favor of bringing the fish back. There's nobody standing here saying, this is all a lot of nonsense, a waste of time, forget it. Everybody involved in this wants to get these fish back. They want to fish to recover.

The people in this State are—not 100 percent by any means—but are overwhelmingly in favor seeing the salmon recover. It's really a question of how to do it, not whether we ought to do it. And there is a way to do it in an orderly sequenced way, where all these agencies are cooperating together.

I mean, if you don't have the political leadership and you don't have the requirement to coordinate, you're essentially asking people with overlapping jurisdictions to commit a unnatural act, and that is to work in a coordinated way without anybody telling them what to do. That is a tough—

Mr. DICKS. Is it possible—do you have meetings?

Mr. RUCKELSHAUS. We meet all the time. This is a result of our meeting.

Mr. DICKS. Of your 199 people that got together?

Mr. RUCKELSHAUS. Well, that's where it started. And since then, Will Stelle has the people I've listed.

Mr. DICKS. And you intend to keep that going?

Mr. RUCKELSHAUS. We're going. We intend to have this filled out so that by the end of May we have a shared strategy. Whether we'll be able to get there or not, I don't know. Everybody's voluntary that has shown up at these meetings. Nobody's forcing anybody.

Mr. DICKS. So what you're saying is that coordination is occurring?

Mr. RUCKELSHAUS. It is occurring. We're making progress, and we are committed to have a shared strategy by the end of May.

Mr. DICKS. Does Fish and Wildlife Service have enough people?

Mr. DIGGS. No. Simple answer.

Mr. STELLE. Senator, I want to amend my comment on the Methow.

Senator GORTON. OK.

Mr. STELLE. We, NMFS, alone don't have the ability to solve the problem in the Methow. And so to answer your question of, are we going to have another train wreck in the Methow this spring or this summer, the answer is, it depends. It depends on whether or not we can get the types of commitments. The State is essential, the Department of Ecology is essential here, and they're working hard on it, the right local mix—

Senator GORTON. Are you the only Federal agency?

Mr. STELLE. I believe Fish and Wildlife Service is involved in the effort as well. I think NMFS is probably the lead on this because it's a salmonid issue.

But we really need to construct a solution, and it is not a solution we can do unilaterally.

Senator GORTON. Right. Thank you.

Mr. INSLEE. I just want to comment.

We've got this Puget Sound Ecosystem Restoration Bill. We're trying to get the Army Corps involved in this process as well, I'm sure you're familiar with. I just want to let you know we've got a 75/25 match situation, and the administration has put this in their first cut of the bill for \$10 million. We appreciate that too, at least get this idea going.

I hear a lot of concern about landowners and folks in development transportation projects; that they're concerned getting the permitting process going. And what I've explained to them—and I

want you to tell me if I'm right—that basically Congress has not given you enough people to process the permits really in a timely fashion. And that the problem is as much with Congress' failure to give you the mechanism to process these permits as it is perhaps with the statutory requirements.

Is that an accurate read? And No. 2, why do you think we're missing at least your message in this regard?

Mr. STELLE. Thank you, Congressman. No, I didn't plant this question.

Mr. INSLEE. Well, I have this conversation a lot.

Mr. STELLE. It's a serious issue. The administration has asked for an increase in \$30 million in order to build the capacity here. If we don't have the capacity, we have train wrecks. And train wrecks don't help anybody, and it won't get the job done.

If you want a train wreck, don't fund this, because the law won't go away, the requirements won't go away, and it just won't get done. And if those consultations don't occur, the permits won't ensue; and if the permits don't ensue, the projects don't go forward. And if they go forward without them, they'll get sued.

Mr. DICKS. How many loaned staff do you have from other entities?

Mr. STELLE. In the Olympia office, just to give you a sense of this—well, we have received about, I believe it was a \$9-million increase covering Oregon, Washington, California, and Idaho. And understand that we make a policy judgment—and it is a policy judgment—that we spend generally about 50 to 60 cents of every dollar on science.

Why do that when we're facing these bottlenecks? Because if you don't make a commitment to investing into science, and if you start to let it slip, you'll never get it back. So we put about half of our dollars into science because of our commitment to the science underscoring the program. But when you spread that money out, it doesn't go far.

The administration has repeated its request for this coming appropriations cycle, and we'll just have to see how it pans out.

Mr. INSLEE. Well, I'll just tell you, I'm going to do anything I can. My transportation projects—everybody knows the transportation problem we've got right now. And it's getting worse because we have not given the infrastructure it requires to issue those permits. And I still fear—even though I'm a person with great optimism and hope—there are those who think if they can starve this agency and a train wreck occurs, that ESA is going to collapse and go away.

That is not going to happen. ESA is not going to evaporate. For those who may be interested, I can share that reality with them; this is not a way to solve this problem. And I just want to let you know where I'm coming from on this.

I want to ask, unfortunately, a controversial question at the end of this.

I want to ask about the Snake River issues, and I want to ask about the State of the science on the dam and dam bridging prospect of being part of a recovery plan. And I guess I would like any three who can assist me on that, to just tell me your best assessment of the State of the biological science as to probabilities of success.

I've tried to educate myself on this. I've read the Path report, at least the executive summary that I could get into.

I'd like you just to tell me what your belief or your rate of the existing biological science on probabilities of success with or without dam breaching as part of the recovery plan. And just allude to any science you think we ought to read in this regard. I realize there are huge economic issues on this, there are huge transportation issues. I'd just like you to talk about the science, if you can.

Mr. STELLE. Bill, do you want to take that?

Mr. RUCKELSHAUS. The SRF Board doesn't have enough money to do—

Mr. INSLEE. Well, let me tell you why I asked. When I read the Path Report, what I see are a range of numbers. And when I read that report—and there's another biological report, and I can't remember which one it was—would suggest that the highest probability of the variety of the menus of what we could do—that the highest probability included dam bridging within part of that plan.

And I guess my real question is, are there other credible scientific assessments that indicate that that is not true; that, in fact, it has a less probability of success, and I would just ask for you to educate us on the state of the science in that regard.

Mr. STELLE. Let me try. Obviously, this is a hugely complicated subject. A couple of initial observations, Congressman.

We have just recently released several weeks ago a new more comprehensive risk assessment of the risks of extinction of all but one of the populations of salmonids listed in the Columbia and the Snake. And the prognosis is very bad.

This is a hugely important diagnostic tool because it tries to use the same measuring stick for risk predictions for the Snake River stocks, and for the first time, for the upper Columbia stocks, the mid Columbia stocks and the lower Columbia stocks, so we have the ability to compare apples and apples.

And the short form of the prognosis is that the stocks facing the highest risk of extinction in the Columbia system are the upper Columbia chinook stocks and steelhead stocks in the upper and lower Columbia and the Snake.

If your strategy is to put your greatest effort on those stocks that are facing the greatest risks, Snake river dam removal doesn't do it because Snake River dam removal doesn't do much for the upper Columbia or lower Columbia stocks. That's one point.

What about those Snake River stocks though? Let's just focus now on the Snake River and not the upper or lower Columbia.

Can we conclude with confidence that breaching Snake River dams is not necessary to recover these stocks? No. Is the science fairly clear on that point? In my view, yes.

Can we recover these stocks without breaching the Snake River dams? The question is answered by what you believe the progress we can make in improving habitat productivity. And it is a tall order.

What do I mean by that? What I mean by that is, from a purely arithmetic perspective, the area where you get the biggest bang for your buck is the area in the life stages of salmonids where you lose the most. So a 1-percent or a 5-percent or a 10-percent improvement in those areas yields the biggest bang for the buck.

What are those areas for the spring/summer chinook stocks and steelhead stocks in the Snake? The area is not mainstem migration, down or up. The area is in the survivals in that first year life stage in the tributaries and in the estuaries because that's where we lose the biggest percentages.

So if the recovery equation for the snake, as it is for the other stocks, is to try to calculate how many pounds of survival improvements we need—and we've made substantial progress in those calculations—then you have an allocation question. Where do you think we can get those pounds of improvements?

Do you believe that we have the will, the fortitude, to make the changes in the way we manage our land and our water in those tributaries to rebuild the productivity so that we don't need to take out dams? If you do, and if we are successful, then that answers your question. If we are not, then the other area of major survival improvements is dam removal.

So in some respects, the question of is the removal of Snake River dams necessary is answered by what types of undertakings are we prepared to make in the other sectors in order to get those pounds of improvements that we need and are we prepared to make those commitments or not? And that is the \$64,000 question. And it is not a \$64,000 question; it's more.

Mr. INSLEE. In summary form, I take it you're telling us that if we as a community make a decision not to breach the dams, we won't escape cost, we will be incurring in other places in the salmon's life cycle? Fair statement?

Mr. STELLE. Absolutely.

Mr. INSLEE. Thank you.

Senator GORTON. Well, I think you stated that proposition accurately, particularly as you expand beyond that to determine whether or not our society values these relatively high costs at a greater level than it does those particular stocks. And while you disagreed with me last week when we put them before a Senate committee, it seems to me, the unstated implication of what Mr. Stelle says is, we may be looking at taking down mainstem Columbia River dams as well, as the single most endangered run is on a part of the upper Columbia, unless these other alternatives end up being easier. And I do not think this society or this State is prepared to do that.

I'm sorry, I told you I had only a couple of questions; I do have one more on a different subject.

One of the earlier panelists, if you heard, Jack Kaeding at Fish First, referred to a programmatic biological assessment that the Fish and Wildlife Service adopted that is more streamlined than your process at the National Marine Fisheries Service.

Is it possible for the Fisheries Service to use a similar, more streamlined biological assessment for projects that are either designed to help fish or would have no effect?

Mr. STELLE. Senator, I don't know the facts of that particular matter, so I can only surmise in my answer. I'd be happy to take a look at answering that question for you.

Senator GORTON. Do you have any comment on that? Do you know what he was talking about?

Mr. DIGGS. I guess I'm not sure about "the" specific case, but doing programmatic biological assessments and opinions is an approach that both NMFS and the Fish and Wildlife Service uses very commonly to try to batch projects together, take like kinds of projects—do one assessment and opinion, again, to expedite the process and remove the regulatory process—

Senator GORTON. If you'd take a look at that and see if there's any difference?

Mr. STELLE. I will do so, Mr. Chairman, absolutely.

Mr. DICKS. I would just like to read this out of his statement, Mr. Kaeding:

Now we find ourselves stopped in our tracks because of National Marine Fisheries Service's interpretation of the Endangered Species Act, which requires us to do a biological assessment on each project. This, we are told, takes from 18 months to 2 years to complete.

Apparently, they were working before with the Fish and Wildlife Service, as I understood what he was saying, and they were able to go forward and do these projects.

I think we have to take a look at that.

Mr. STELLE. I will take a look at it. If we can batch and bundle and secure some efficiencies from that, absolutely. Because I can promise you, the bottlenecks are more painful for us or as painful for us as for anybody else. So we are constantly probing for efficiencies, and I will take a look at it.

Senator GORTON. That's a constructive answer, and I believe we'd made some very real progress today. There has been a good deal of listening, and the degree of coordination that we've had without our following Bill Ruckelshaus' advice of last year to create a formal facilitator seems to me to have been very impressive. And I think my colleagues join in that.

And we thank you for your hard work and for your help today.

CONCLUSION OF HEARING

Thank you all very much for being here, that concludes our hearing. The subcommittee will stand in recess subject to the call of the Chair.

[Whereupon, at 5:30 p.m., Thursday, April 20, the hearing was concluded, and the subcommittee was recessed, to reconvene subject to the call of the Chair.]