OVERSIGHT HEARING ON COLUMBIA/SNAKE RIVER DRAWDOWN PROPOSALS

OVERSIGHT HEARING

BEFORE THE

SUBCOMMITTEE ON WATER AND POWER

OF THE

COMMITTEE ON RESOURCES
HOUSE OF REPRESENTATIVES

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OVERSIGHT HEARING ON COLUMBIA/SNAKE RIVER DRAWDOWN PROPOSALS

SATURDAY, MAY 31, 1997

U.S. HOUSE OF REPRESENTATIVES, SUBCOMMITTEE ON WATER AND POWER, COMMITTEE ON RESOURCES, *Lewiston, ID.*

The Subcommittee met, pursuant to notice, at 2:30 p.m., at the Grand Plaza Hotel, Lewiston, Idaho, Hon. John T. Doolittle, Chairman, presiding.

Members present: Representatives Doolittle, Chenoweth, and Crapo.

Staff present: Valerie West, Legislative Staff; Lara Chamberlain, Clerk; and Liz Birnbaum, Democratic Staff.

Mr. DOOLITTLE. The Subcommittee on Water and Power will please come to order.

The Subcommittee is meeting today to hear testimony concerning the Columbia/Snake River drawdown proposals.

At the request of Congressman Chenoweth and Congressman Crapo—two of my favorite colleagues, I might add—the Subcommittee has traveled to Lewiston for today's oversight hearing. I look forward to hearing from the witnesses concerning proposals to drawdown the four lower Snake River dams and the John Day Dam.

STATEMENT OF HON. JOHN T. DOOLITTLE, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mr. DOOLITTLE. These proposals would have significant impacts on the Pacific Northwest and severe economic consequences for this area.

I appreciate the efforts of Congressman Chenoweth and Congressman Crapo to assure that the many complex issues surrounding these proposals will be aired here today.

We are spending hundreds of millions of dollars annually on salmon recovery efforts, both in the Pacific Northwest and in California. Because of the substantial impacts of these proposals, the policies being considered must be thoroughly evaluated for their benefits to the fishery as well as their cost to society.

The Army Corps of Engineers is currently conducting a feasibility study of permanent natural river level drawdown at the four lower Snake River dams: Lower Granite, Little Goose, Lower Monumental and Ice Harbor.

The Corps has made a determination that "based on estimated biological benefits, costs and other environmental effects and re-

gional acceptance, the permanent natural river option is the only drawdown alternative recommended for further study."

This analysis is supposed to be completed in 1999 as called for in the National Marine Fisheries Service March 1995 biological opinion on hydropower operations. It will be the basis for decisions on whether the drawdowns should be implemented.

The ramifications of implementing the permanent natural river alternative for the lower Snake dams are enormous. The permanent drawdown would radically alter or eliminate the current multi-purpose uses of the lower Snake River. Irrigation facilities on the four projects would be unusable without significant modifications. Commercial navigation on the lower Snake River from its confluence with the Columbia River to Lewiston would be eliminated. Power production at all four dams would also be eliminated.

In addition, the Corps estimates that the construction cost to bypass these four dams would be $533 million.

In addition to this proposal, there are proposals to draw down John Day Dam on the main stem of the Columbia to spillway crest or natural river levels.

While the Corps of Engineers has not prepared any preliminary estimate of the social and economic impacts, either proposal would definitely affect irrigation, power production, navigation and flood control.

The Corps has taken the position that they cannot implement these proposals without new statutory authority, since the proposed actions would eliminate or significantly affect specific project purposes provided for in the authorizing legislation.

As Chairman of the House subcommittee with jurisdiction over the Federal power marketing administrations and the Bureau of Reclamation, I can tell you that I will be following these studies over the next 2 years and will fully evaluate any recommendation made. I will also be examining the scientific data on which these decisions will be based.

I do, however, look forward to hearing from today's witnesses as we begin our ongoing oversight of these proposals. I would like at this point to recognize the two representatives for the state of Idaho, Mrs. Chenoweth and Mr. Crapo, for any opening statement they may wish to make.

Mrs. Chenoweth.

[The prepared statement of Hon. John T. Doolittle follows:]

STATEMENT OF HON. JOHN T. DOOLITTLE, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

At the request of Congresswoman Chenoweth and Congressman Crapo, the Subcommittee on Water and Power has traveled to Lewiston for today's oversight hearing. I look forward to hearing from the witnesses concerning proposals to drawdown the four lower Snake River dams and John Day Dam. These proposals would have significant impacts on the Pacific Northwest, and severe economic consequences for this area. I appreciate the efforts of Congresswoman Chenoweth and Congressman Crapo to ensure that the complex issues surrounding these proposals will be aired here today.

We are spending hundreds of millions of dollars annually on salmon recovery efforts, both in California and the Pacific Northwest. Because of the substantial impacts of these proposals, the policies being considered must be thoroughly evaluated for their benefits to the fishery as well as their costs to society.

The Army Corps of Engineers is currently conducting a feasibility study of permanent natural river level drawdown at the four Lower Snake River dams—Lower

Granite, Little Goose, Lower Monumental and Ice Harbor. The Corps has made a determination that "based on estimated biological benefits, costs, other environmental effects, and regional acceptance; the permanent natural river option is the only drawdown alternative recommended for further study." This analysis is supposed to be completed in 1999, as called for in the National Marine Fisheries Service March 1995 biological opinion on hydropower operations. It will be the basis for decisions on whether the drawdowns should be implemented.

The ramifications of implementing the permanent natural river alternative for the lower Snake dams are enormous. The permanent drawdown would radically alter or eliminate the current multi-purpose uses of the lower Snake River. Irrigation facilities on the four projects would be unusable without significant modifications. Commercial navigation on the lower Snake River from its confluence with the Columbia River to Lewiston would be eliminated. Power production at all four dams would also be eliminated. In addition, the Corps estimates that the construction costs to bypass these four dams would be $533 million.

In addition to this proposal, there are proposals to drawdown John Day Dam on the mainstem of the Columbia to spillway crest or natural river levels. While the Corps of Engineers has not prepared any preliminary estimates of the social and economic impacts, either proposal would definitely affect irrigation, power production, navigation and flood control.

The Corps has taken the position that they cannot implement these proposals without new statutory authority, since the proposed actions would eliminate or significantly affect specific project purposes provided for in the authorizing legislation.

As Chairman of the House Subcommittee with jurisdiction over the federal power marketing administrations and the Bureau of Reclamation, I can tell you that I will be following these studies over the next two years, and will fully evaluate any recommendations made. I will also be examining the scientific data on which these decisions will be based.

I do, however, look forward to hearing from today's witnesses as we begin our ongoing oversight of these proposals.

STATEMENT OF THE HON. HELEN CHENOWETH, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF IDAHO

Mrs. CHENOWETH. Thank you, Mr. Chairman. And thank you so much for bringing the Subcommittee on Water and Power to Lewiston, Idaho.

On behalf of my constituents, I just want to issue to you a hearty Idaho welcome. My constituents and I are very grateful for this opportunity to be heard and to tell the committee our story.

I also want to welcome my friend and fellow member of the Subcommittee, Mike Crapo, to the 1st Congressional District. As a new member of the Subcommittee, he has already distinguished himself as a valuable member of the Resources Committee, and I am so very pleased he was able to make this journey from Idaho Falls.

Mr. Crapo also serves on the House Commerce Committee, and I think that the fact that he is here with me today would indicate how we work through our problems in Idaho together. It is a joy, a very sincere joy, to be able to serve with a man like Mike Crapo.

I also want to extend a warm and hearty welcome to all of our witnesses, each of whom have sacrificed a beautiful and very exciting Saturday afternoon to be with us today. As I was in my room just before coming down, I was viewing what could possibly have been a tornado that was moving across on the prairie, and being a girl from Kansas originally, I remember those signs.

Mr. Chairman, you heard me say over and over again in Washington, that in Idaho water is like gold. And I cannot stress this enough. The Snake and Clearwater Rivers are truly the lifeblood of our state. The various Federal, state and private water reclamation projects throughout Idaho have turned much of what was once

arrid lands in the south to now green, productive farms and ranches which in turn have spawned our great cities in the south.

These projects have benefited wildlife, recreation and Idaho's quality of life.

And to the north, the management of the Port of Lewiston is of vital concern to the entire northern area, as well as points east.

To that extent, we find ourselves today in an unfortunate decision. The various reclamation projects that this region is so dependent upon, cause harm to another of our valuable resources, our fish, our salmon and our steelhead. Some will present this as a Hobson's choice. Mr. Chairman, I on the other hand believe we can protect both our quality of life and our fish.

The reason I asked you, Mr. Chairman, to hold this hearing was to help both us and the public better understand the situation that we are in. The four lower Snake dams are operated now under the National Marine Fisheries Service 1995 Biological Opinion, which calls for flow augmentation, spill and barging.

And that was out without an act of Congress. That simply was a biological opinion.

And as we will hear today, the National Marine Fisheries Service is expected to issue a new biological opinion in 1999 on the salmon, and to decide later this summer whether to list the steelhead.

These decisions may very well call for the removal of the four lower Snake River dams as well as the John Day. This will severely damage the region's economy and the people of my district. And our people here must be made aware of this coming threat, Mr. Chairman.

In fact, as we are here today, the U.S. Army Corps of Engineers has done a study to draw down to the natural river the lower Snake dams. In the Corps' Interim Status Report the Army states, and I quote, "Based on estimated biological benefits, costs, other environmental effects and regional acceptance, the permanent natural river option is the only drawdown alternative recommended for further study."

This means, Mr. Chairman, that natural river breaching dams is the only option to be studied.

In my mind this issue is not an either/or situation, and I am deeply disturbed that the Federal entities appear to be making such. Mr. Chairman, these decisions and actions have huge implications to the region, both in ecological and economical terms. We must understand the ramifications of our decisions and actions. Often, it appears to me, people are not understanding that the removal of the dams is a very real possibility.

As we look here today, a May 1997 University of Idaho study ties 4,830 high paying jobs to the three local ports, Lewiston, Clarkston and Whitman County. Now, that may not sound like a lot of jobs to an Easterner, but here in Lewiston, the loss of these jobs would be devastating to the district and to my state.

Not only must we have all people making decisions, but if Idaho chooses to commit the resources, including our water, to recovery programs, we must ensure these programs are not purely hypothetical experiments, and that our efforts would yield tangible results.

Decisions must be made on fact-based, integrated science, not emotionally driven rhetoric.

Mr. Chairman, when the Columbia, Snake and Clearwater reclamation projects were undertaken, there was a clear goal to improve the region's economy and at one point, help with the war effort.

We must now decide if our priorities have changed. What are our goals? What best serves the Pacific Northwest?

My goals, Mr. Chairman, are to preserve the fish and the economy. In my mind, these are not mutually exclusive.

Any policy change to the Northwest Power Act and the missions of the Corps of Engineers and the Bonneville Power Administration must be made by lawmakers, the elected officials responsible to the citizens, and not by bureaucrats, agencies or executive orders.

We cannot, must not pit Northern Idaho against Southern Idaho, the East against the West, and certainly not the fish versus the people. We are all in this together and must work together to protect all of our interests.

Mr. Chairman, with that, I again want to thank you very much for coming to Idaho. It is a great honor to have you here.

Thank you.

[The prepared statement of Hon. Helen Chenoweth follows:]

STATEMENT OF HON. HELEN CHENOWETH, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF IDAHO

Mr. Chairman, thank you so much for bringing your subcommittee on water and power to Lewiston, Idaho. On behalf of my constituents, welcome. My constituents and I are grateful for this opportunity to be heard and to tell the committee our story.

I also want to welcome my friend and fellow member of the subcommittee, Mike Crapo, to the first congressional district. As a new member to the subcommittee, he has already distinguished himself as a valuable member of the Resources Committee, and I am so very pleased he was able to make the journey from Idaho Falls.

I also want to extend a warm welcome to all of the witnesses—each of whom have sacrificed this beautiful Saturday afternoon to be with us here today.

Mr. Chairman, you've heard me say it over and over again in Washington, "water is like gold in Idaho." I cannot stress this enough. The Snake and Clearwater rivers are truly the lifeblood of our state. The various federal, state and private water reclamation projects throughout Idaho have turned much of what was once arid lands to now green, productive farms and ranches, which in turn have spawned our great cities. These projects have benefited wildlife, recreation and Idaho's quality of life.

That being said, we find ourselves today in an unfortunate and difficult situation. The various reclamation projects that this region is so dependent upon, cause harm to another of our valuable resources, our fish—salmon and steelhead. Some would present this as a "Hobson's Choice." I, on the other hand, believe we can protect both our quality of life, and our fish.

The reason I asked you, Mr. Chairman, to hold this hearing, was to help both us and the public better understand the situation we are in. The four lower Snake dams are operated under the 1995 Biological Opinion, which calls for flow augmentation, spill and barging. And as we will heard, the National Marine and Fisheries Service (NMFS) is expected to issue a new biological opinion in 1999 on the salmon, and to decide later this summer whether to list the steelhead. These decisions may very well call for the removal of the four lower Snake river dams, as well as the John Day. This will severely damage the region's economy, and the people of my district must be made aware of this.

In fact, as we are here today, the U.S. Army Corps of Engineers is studying and planning to drawdown to natural river the lower Snake dams. In the Corps' Interim Status Report, the Army Corps states, (and I quote) "Based on estimated biological benefits, costs, other environmental effects, and regional acceptance; *the permanent natural river option is the only drawdown alternative recommended for further study.*" This means, Mr. Chairman, that natural river (breaching dams) is the only option being studied—and that scares the life out of me! In my mind, this issue is

not an "either-or" situation. And I am deeply disturbed that the federal entities appear to be making it such.

Mr. Chairman, these decisions and actions have huge implications to the region, both in ecological and economical terms. We must understand the ramifications of our decisions and actions. Often, it appears to me, people are not understanding that the removal of the dams is a very real possibility. We must go into this with our eyes wide-open.

As we will hear today, a May, 1997 University of Idaho study ties 4,830 high-paying jobs to the three local ports—Lewiston, Clarkston and Whitman County. Now that may not sound like a lot of jobs to an Easterner, but here in Lewiston, the loss of these jobs would be devastating to this region and to my state of Idaho.

Not only must we have all data before making decisions, but if Idaho chooses to commit its resources, including our water, to recovery programs, we must ensure that those programs are not mere hypothetical experiments, and that our efforts will yield tangible results. Decisions must be made on fact-based, integrated science—NOT emotionally driven rhetoric. And most of all, Mr. Chairman, Idaho must be a full and willing partner, and must voluntarily deem this use of its water as a beneficial use. Any commitment of Idaho resources must be done in full compliance with Idaho state law and procedure.

Mr. Chairman, when the Columbia, Snake and Clearwater reclamation projects were undertaken, there was a clear goal—to improve the region's economy and, at one point, help with the war effort. We must now decide if our priorities have changed. What are our goals? What best serves the Pacific Northwest? My goals, Mr. Chairman, are to preserve the fish *and* the economy. In my mind, these are not mutually exclusive.

Any policy change to the Northwest Power Act and the missions of the Corps of Engineers and the Bonneville Power Administration must be made by lawmakers—the elected officials—and not by bureaucrats, agencies or Executive Order. We cannot and must not pit North Idaho against Southern Idaho, the East against the West, and certainly not the fish against the people. We are all in this together, and we must work together to protect all interests.

With that, Mr. Chairman, let's hear from our witnesses.

Mr. DOOLITTLE. Thank you very much. Mr. Crapo is recognized for his statement.

STATEMENT OF THE HON. MICHAEL CRAPO, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF IDAHO

Mr. CRAPO. Thank you, Mr. Chairman.

And let me also add my voice to that of Representative Chenoweth, in thanking you for coming to Idaho. I know how busy your schedule is and I know how many demands you have for the Committee's time for the hearing of the critical issues in the jurisdiction of this subcommittee. And I appreciate your attention to this critical issue.

I also want to commend Representative Chenoweth for having the perseverance and the ability to get you here. I know that your demands are many, and that it is important that we have advocates like Representative Chenoweth who work so hard and effectively at Congress to make sure that attention is paid to these critical interests in our area.

I think the hearing is very timely. We are at a point in Idaho and in the Pacific Northwest right now where we face not only the critical issues of how to address the question of drawdowns or other river management issues, but we are also looking at the nationwide, the issue of electric energy restructuring of the entire electric energy industry.

And in the Pacific Northwest, that significantly involves hydropower decisions, which involves decisions relating to how we manage our rivers.

And I don't think it's any surprise to anybody, but often we have to step back and think about the fact that people in the Pacific Northwest, in fact people in the world, generally live near water, because water is such a critical part of our lives. We live near it for drinking water. In the Pacific Northwest we utilize our rivers for flood control; our facilities for flood control, for irrigation, for power generation, for fish and wildlife, and the tremendous environmental treasures which we have been blessed with here. I don't know if I mentioned recreation. I mean, the list goes on and on.

Transportation is a very critical issue that we will be addressing here today I'm sure.

And the list goes on and on with regard to the purposes for which the river system serves the people in the Pacific Northwest. And whether it is under the Endangered Species Act with regard to salmon recovery and steelhead, or whether, if it is with regard to the issues that are being raised with regard to restructuring of the electric energy industry, decisions that will be made hopefully soon with regard to salmon recovery and hopefully well with regard to salmon recovery and the energy and power issues, will dramatically impact Idahoans in every way.

And because of that, I believe it's critically important that we address these issues properly here in the Pacific Northwest.

I just want to get a plug in right now, Mr. Chairman, as we go into some of these battles, I'm going to be one that you will see fighting very aggressively for regional control over decisions relating to management of our rivers here in the Pacific Northwest.

All too often I think we have seen that the decisionmaking structure that we have not only takes away from the people who live here near the issues, the ability to control their destiny, but forces us into a decisionmaking process that too often gives us low results for the economy and low results for the environment.

And I agree with Representative Chenoweth, we don't need to be satisfied with that type of results. We can have results that are better for the economy and better for the environment, if we move to a decisionmaking process that lets the people of the region come together and have the ability to make decisions about their future.

Our people will protect the fish. Our people will protect the economy. And they will do it with common sense solutions. And we need to move in that direction.

I just wanted to indicate that I do have some pretty strong concerns about the process that is being followed, and hopefully as we address not only the questions of the technology and the science and the impacts that will result from some of the proposed solutions that we face, we also need to address the entire question of how the process is addressed.

I believe that as we approach the energy restructuring issue, we cannot separate it from the issue of river governance, and we must put into place in the Pacific Northwest a system of river governance that deals with fish and wildlife, as well as power and many other issues that are at stake; transportation, and flood control, irrigation and so forth. One which lets all of us participate in that process and which allows all of those interests and concerns to be brought to the table when issues are being made as to how we will govern our river.

Again, Mr. Chairman, I thank you for bringing this committee to Idaho, and I'm sure that you will find a significant amount of important information that will help you better understand our issues today.

Thank you.

[The prepared statement of Hon. Michael Crapo may be found at end of hearing.]

Mr. DOOLITTLE. Thank you very much.

We have three distinguished panels of witnesses at today's hearing.

On our first panel, we have Mr. Todd Maddock, who is a member of the Northwest Power Planning Council. He will then be followed by Brigadier General Robert H. Griffin, the Northwest Division Commander of the U.S. Army Corps of Engineers, who will then be followed by Mr. Jack Robertson, Deputy Administrator of the Bonneville Power Administration. He will then be followed by Mr. William Stelle, Jr., Northwest Regional Director of the National Marine Fisheries Service. And then our final witness on this panel will be Mr. Samuel N. Penney, Chairman of the Nez Perce Tribal Executive Committee.

As is customary with this Subcommittee, we would ask you to rise and to raise your right hands and take the oath. The witnesses have been previously advised of the Subcommittee's intention to place all witnesses under oath. And if you would raise your right hands.

[Witnesses sworn.]

Mr. DOOLITTLE. Let the record reflect that each responded in the affirmative.

Under the Committee rules, we have these three lights before you, and we would ask you to attempt to keep your testimony to 5 minutes. We have a number of witnesses today, and there is a certain time constraint related to flights and the use of the room.

At the beginning of the fifth minute, the yellow light will go on, just as a guide. We won't cut you off when the red light goes on, but try and wrap up as quickly as possible.

And with that, Mr. Maddock, I will recognize you for your testimony.

STATEMENT OF TODD MADDOCK, MEMBER, NORTHWEST POWER PLANNING COUNCIL

Mr. MADDOCK. I am having a little difficulty here with our speaker, but, Mr. Chairman, and Congresswoman Chenoweth and Congressman Crapo and other distinguished guests, I am Todd Maddock, one of Idaho's two representatives to the Northwest Power Planning Council.

I am here today to present comments on behalf of Governor Phil Batt. The Governor would like to extend his warm welcome for the entire state of Idaho.

It's a pleasure to have this committee in Lewiston to receive comments on river operations. The configuration of dams on the Snake and Columbia Rivers are critical to the survival of our salmon and steelhead, and to our water-based economy. Not just here in Lewiston, which is the furthest inland oceangoing port on the Columbia and Snake River system, but also our salmon and steelhead fishermen and the commerce they generate, our river-based recreation

industries, and to the irrigated agricultural lands that lie upstream in Southern Idaho.

These rivers, with their dams and anadromous fish, have caused a public debate unparalleled in the Pacific Northwest. Regional and Federal Governments, namely the National Marine Fisheries Service, will be deciding in 1999 which recovery path to follow toward restoration of our salmon and steelhead runs.

Recovery options include dam modifications, adjustment of river operations, perhaps including some various forms of drawdowns, juvenile fish transportation, increased in-river juvenile migration, which may include managed spills, and of course a combination of all of these options.

More extreme measures are being proposed by various interests and other Federal agencies. These issues are dam breaching and heavy flow augmentation from upstream storage reservoirs. Both of these methods have a devastating impact on Idaho's economy.

Regional leaders and managers alike are on a quest for the best biological, economical and social information in order to make these important decisions by 1999.

A component of this decision path is the drawdown study of the four lower Snake River dams. The Governor of Idaho continues to request the best available information in order to resolve these river management issues. He is not willing, however, to sacrifice the Port of Lewiston, and is firmly committed to the continuation of commercial barging on both river systems. He is also on record supporting studies on John Day reservoir with all expediency so that that regional decision can be made relative to drawdown.

Completion of these studies is essential to understanding all aspects of the issue and makes sound public policy.

Let me note that these economic and biological studies of John Day are important because of its sheer size and because we know less about this reservoir than any other on the system.

Funding is needed now so that we can proceed with studies that do not duplicate other efforts already in progress. In 1996 and 1997 the state of Idaho proposed to the Federal agencies a sensible balance between juvenile transportation and in-river migration using controlled spill. We called this policy "Spread the Risk" and believed that it balances the needs of fish with important economic factors. Idaho's "Spread the Risk" strategy will also provide the additional information that the region needs to make the best possible decisions.

Our policy has received positive response from the region but has been met with continual resistance from the Federal implementing agencies.

The Northwest can commit up to $435 million a year to these efforts. Roughly $250 million of that total are going to fish recovery projects and research as well as capital improvements to the dams. Such improvements include improved fish—juvenile fish bypass facilities, adult fish ladders, experimental surface collectors, improved barges, fish guidance screens, improved turbines, and advanced monitoring and tracking systems. The remaining dollars are not actual expenditures but rather foregone revenue for the

Bonneville Power Administration, depending upon the amount of spill and demand for electricity.

As the Northwest Power Planning Council, the U.S. Army Corps of Engineers, and other Federal and state agencies in the region race to supply policymakers with economic and biological information, we must begin to make these hard choices concerning the recovery of our anadromous fish.

1999 is right around the corner, and we must be prepared to decide how to proceed.

The primary obstacle in finding a solution to these problems is deciding once and for all what is the appropriate decisionmaking process for the region. An effective salmon recovery and river governance process must include all responsible government entities in the region, from Federal and state, to tribal and local. All must be included if we hope to succeed.

The current Federal process is falling on hard times because critical players like the state of Montana and the lower river Tribes are pulling out, citing National Marine Fisheries reluctance to work with them in good faith.

Governor Batt also is disappointed in the Federal Government's reaction to Idaho's initiatives and NMFS departure from proper process in mid-river—mid-season river management.

I would like to add that the Endangered Species Act, as currently written, works against regional efforts to recover the anadromous fish runs and must be sensibly reformed.

The Governor is very troubled by the attitude of many that seek to manipulate the process by lawsuits. The courts are not the proper place to resolve this critical issue.

The Pacific Northwest needs to come to closure on the issue of river governance. If a particular process is endorsed by all government entities in the region, and full participation occurred, we would not need to have Congressional hearings like the one here today.

An effective river governance structure would put the decisionmaking authority firmly in the hands of the region's policymakers, as it should be. Federal agencies involved in this issue must actively support such a process and not merely provide lip service and then invoke their veto authority and set separate policy.

In closing, the Governor would like to thank you for having this important hearing in Idaho. Drawdowns is only one of the many issues facing the region as we work to recover our anadromous fish runs. All parties must first agree on a process if we ever hope to make decisions necessary to see recovery realized.

Thank you.

[The prepared statement of Governor Philip E. Batt, Governor, State of Idaho as presented by Mr. Maddock follows:]

STATEMENT ON BEHALF OF HON. PHILIP E. BATH, GOVERNOR, STATE OF IDAHO

Congressman Doolittle, Congressman Crapo, Congresswoman Chenoweth and other distinguished guests. I am Todd Maddock, one of Idaho's two representatives to the Northwest Power Planning Council. I am here today to present comments on behalf of Governor Phil Batt. The Governor would like to extend his warm welcome from the entire state of Idaho.

It is a pleasure to have this subcommittee in Lewiston to receive comments on river operations. The configuration of dams on the Snake and Columbia Rivers are critical to the survival of our salmon and steelhead and to our water based economy.

Not just here in Lewiston—which is the farthest inland ocean-going port on the Columbia and Snake river system—but also to our salmon and steelhead fishermen and the commerce they generate, our river based recreation industries, and to the irrigated agricultural lands that lie upstream in Southern Idaho.

These rivers, with their dams and anadromous fish, have caused a public debate unparalleled in the Pacific Northwest. Regional and federal governments, namely the National Marine Fisheries Service, will be deciding in 1999 which recovery path to follow toward restoration of our salmon and steelhead runs. Recovery options include dam modifications; adjustments to river operations, perhaps including some various forms of drawdowns; juvenile fish transportation; increased in-river juvenile migration which may include managed spills; and, of course, a combination of all these options. More extreme measures are being proposed by various interests and other federal agencies. These issues are dam breaching and heavy flow augmentation from upstream storage reservoirs. Both of these methods would have a devastating impact on Idaho's economy.

Regional leaders and managers alike are on a quest for the best biological, economical and social information in order to make these important decisions by 1999.

A component of this decision path is the drawdown study of the four lower Snake River Dams. The Governor of Idaho continues to request the best available information in order to resolve these river management issues. He is not willing, however, to sacrifice the port of Lewiston, and is firmly committed to the continuation of commercial barging on both river systems. He is also on record supporting studies at John Day Reservoir with all expediency so that a regional decision can be made relative to drawdown. Completion of these studies is essential to understanding all aspects of the issue, and to make sound public policy.

Let me note that these economic and biological studies of John Day are important because of its sheer size, and because we know less about this reservoir than any other on the system. Funding is needed now so that we can proceed with studies that do not duplicate other efforts already in progress.

In 1996 and 1997, the state of Idaho proposed to the federal agencies a sensible balance between juvenile transportation and in-river migration using controlled spill. We call this policy "Spread the Risk" and believe that it balances the needs of the fish with important economic factors. Idaho's Spread the Risk Strategy will also provide the additional information that the region needs to make the best possible decisions. Our policy has received positive response from the region, but has been met with continual resistance from the federal implementing agencies.

The Northwest can commit up to $435 million a year to these efforts. Roughly $250 million of that total are going to fish recovery projects and research as well as capital improvements to the dams. Such improvements include improved juvenile fish by pass facilities, adult fish ladders, experimental surface collectors, improved barges, fish guidance screens, improved turbines, and advanced monitoring and tracking systems. The remaining dollars are not actual expenditures, but rather, forgone revenue for the Bonneville Power Administration depending upon the amount of spill and demand for electricity.

As the Northwest Power Planning Council, the U.S. Army Corps of Engineers, and other federal and state agencies in the region race to supply policy makers with economic and biological information, we must begin to make these hard choices concerning the recovery of our anadromous fish. 1999 is right around the corner, and we must be prepared to decide how to proceed.

The primary obstacle for finding a solution to these problems is deciding once and for all what is the appropriate decision making process for the region. An effective salmon recovery and river governance process must include all responsible government entities in the region, from federal and state, to tribal and local. All must be included if we hope to succeed. The current federal process is falling on hard times because critical players like the state of Montana and the Lower River Tribes have pulled out, citing the National Marine Fisheries Service's reluctance to work with them in good faith. Governor Batt is also disappointed with the federal government's reaction to Idaho's initiatives and NMFS's departure from proper process in mid-season river management.

I would like to add that the Endangered Species Act (ESA) as currently written works against regional efforts to recover the anadromous fish runs, and must be sensibly reformed. The Governor is very troubled by the attitude of many that seek to manipulate the process by lawsuits. The courts are not the proper place to resolve this critical issue.

The Pacific Northwest needs to come to closure on the issue of river governance. If a particular process was endorsed by all government entities in the region, and full participation occurred, we would not need to be having congressional hearings like the one here today. An effective river governance structure would put the deci-

sion making authority firmly in the hands of the region's policy makers, as it should be. Federal agencies involved in this issue must actively support such a process, and not merely provide lip service and then invoke their veto authority and set a separate policy.

In closing, the Governor would like to thank you for having this important hearing in Idaho. Drawdown is only one of the many issues facing the region as we work to recover our anadromous fish runs. All parties must first agree on a process if we ever hope to make the decisions necessary to see recovery realized.

Thank you.

Mr. DOOLITTLE. Thank you very much.

Gen. Griffin, you are recognized for your testimony.

STATEMENT OF BRIGADIER GENERAL ROBERT H. GRIFFIN, NORTHWEST DIVISION COMMANDER, U.S. ARMY CORPS OF ENGINEERS

Gen. GRIFFIN. Thank you, Mr. Chairman, and the other Committee members and distinguished guests. I am General Robert Griffin, Commander of the newly formed Northwestern Division, that was part of the 1997 Energy and Water Development Appropriations Act that said the Corps must get to between six and eight divisions.

In the process there you might wonder what happened to North Pacific Division that I took command of. It is now combined with the Missouri River Division. So I have offices in both Portland and Omaha. Clearly, by my being here today, those dual duties will not take away from my salmon recovery efforts. That I can assure you.

I now have five districts. I lost Alaska. I have Seattle, Walla Walla, Portland, Kansas City and Omaha.

I appreciate the opportunity to appear before you today. There are three areas I want to touch on: the proposed drawdown studies that we have on the lower Snake River, and the one that is currently in abeyance on the John Day reservoir; the potential effects of drawdown options for the Snake River study; and also the regional coordination that we will do during the study process.

Sir, I have submitted detailed written testimony for the record. And, sir, I would also like to add a lot of the points you made, I am just going to reinforce some of them very quickly. Your opening statement pretty well reflects my oral statement here.

The Corps in cooperation with the region is conducting a feasibility study of options for improving fish passage conditions over the long-term in the lower Snake Reservoir, or river system.

The options are, Ma'am, I would like to reiterate, permanent natural river drawdown is one option, surface bypass is another, and the existing condition with fish passage improvements is another.

We are doing this in accordance with the biological opinion, but we are also doing these studies because we believe that these drawdowns offer a potential for improved salmon survival at the dams.

The drawdowns would likely provide better in-river conditions, it would eliminate adult and juvenile salmon passage mortality at the dams. And it will improve speed through the river system.

And the challenge is, sir, as we talked earlier, to quantify these benefits and determine whether this will lead to recovery of the salmon stocks.

Our charge is to perform a regional analysis to develop the best scientific information. There will definitely be tradeoffs, sir, as you

admit, or stated there. We will not breech the damages, we would in effect go around them. This is on the Snake River.

The powerhouses, spillways and navigation locks would be decommissioned, and in effect mothballed. The preliminary construction estimate to implement a permanent natural level drawdown at the four dams is $530 million.

Sir, I would like to highlight that is a very preliminary number. It is about 4 years old, taken out of a System Operations Review study that we had done before. It does not include any mitigation or any other impacts, such as lost revenue to BPA.

As you say, sir, it would radically change our multi-purpose projects as we know them today. Facilities for irrigation, municipal and industrial water supply would be rendered unusable without costly modifications which at this point we estimate at about $35 million. Commercial navigation of the lower Snake River would be eliminated. Our current study of natural river level drawdown is a detailed engineering, biological, social, and economic analysis. So it will look at all of those in great detail.

The report, sir, as you say, and the accompanying EIS, and that is very important, these two documents go together. There will be a report, and an Environmental Impact Statement, along with environmental assessment and the bilogical opinion done by National Marine Fisheries Service. Those will be produced in 1999, according to the 1995 biological opinion.

This study will serve as a basis for decisions on whether drawdowns or other alternatives, such as surface bypass or improvements to existing systems, should be implemented.

Regarding John Day reservoir drawdown, sir, we have already looked at what is called minimum operating pool. We have studied that. We will not study that again, and the Power Planning Council also asked us not to do that. So we will not do that.

Our study of deeper drawdowns to spillway crest or natural river was suspended pending scientific justification as a result of the 1996 Energy and Water Development Appropriations Act. We got that justification from NMFS and have gone back to the two subcommittees, House and Senate. We asked for $1.5 million in study money in 1997. And also $3.2 million in fisscal year '98 to continue the studies.

Sir, that request to continue the study and the documentation is with the Subcommittees now, and we have not gotten a response.

So, on the John Day drawdown, I can neither give you a scope, nor a schedule, until we get money back and can work with the region to scope this and then come up with a cost and time schedule.

Coordination, sir, on the lower Snake River feasibility, we see as very important. We will work, coordinate closely with all interests throughout the study and the EIS process.

In fact, we have regional groups working now to evaluate the biological benefits and economic effects. Two of those are the Drawdown Regional Economic Work Group and the PATH group, which is the Plan for Analyzing and Testing Hypothese, It will provide the scientific rigor we need for these studies.

We will conduct many public meetings, as required by NEPA, and by our study process, and we will do workshops involving public interest groups, state and Federal agencies, Native American

Tribes and scientific groups. We will also communicate through existing work groups associated with the NMFS regional forum process.

And, sir, the final comment I would like to make and probably the most important is, while we have the authority to do the study, we don't have authority to implement drawdowns without going to Congress for project reauthorization. So we can study, but we're going to have to come back to Congress if we change the current multi-purpose project authority that we have today.

Sir, that concludes my oral testimony.

[The prepared statement of Gen. Griffin may be found at end of hearing.]

Mr. DOOLITTLE. Thank you, sir.

Mr. Robertson is recognized.

STATEMENT OF JACK ROBERTSON, DEPUTY ADMINISTRATOR, BONNEVILLE POWER ADMINISTRATION

Mr. ROBERTSON. Mr. Chairman, members of the Committee, thanks for the time this morning. I am going to ask again, as did the General, that my full statement be submitted for the record, and I am going to briefly summarize it.

I want to thank the Committee first for its help to Bonneville in trying to get Bonneville stabilized and its financial condition healthy in the last 3 years.

You are aware we have made a number of decisions, some of which we couldn't have made without the help of Congress and the administration the effect of these decisions is that we have cut $600 million in cost and $2,000 of our FTE. We have recontracted for power sales for the next 5 years for two and a half billion dollars per year in revenues, and thereby have guaranteed revenues in the bank for the next 5 years, to the year 2001.

We are making our $850 million treasury payment and our funding to fish and wildlife that are on the average above $400 million per year. And we have had a number of tools that we needed to get that done, and you helped us to do that, and I just wanted to officially thank you while we are here.

We have completed an initial analysis of the effect of the drawdown of the lower Snake and John Day reservoirs.

We expected that our work on the power system effects will be more refined and comprehensive as we participate with the Corps and the other parties in their drawdown feasibility study.

Bonneville will review a range of alternatives and provide that range for both public and independent review.

I am now summarizing my written, formal testimony.

First of all, there are two fundamental things regarding draw down that I want to say today. First, there is a potential for lost generation and there is a question of the total cost associated with that, and I want to go through both of those things fairly quickly.

First of all, lost generation. The lower Snake projects generate 1,231 average megawatts of power, or about 12 percent of the total Federal hydro system sold by Bonneville.

John Day Dam generates by itself an additional 1200 average megawatts of power.

With the natural river drawdown at John Day all 1200 megawatts would be eliminated. Under a spillway crest drawdown alternative, 560 average megawatts would be lost.

If the natural river drawdown option were chosen at all five projects, a total of just over 2400 average megawatts of energy would be eliminated.

The total energy capacity of these five projects is just under 6,000 megawatts. The loss of revenue, energy capacity and energy reliability from these projects would, under existing law, be borne by Bonneville's system.

The five projects represent 24 percent of Bonneville's system, or about 10 percent of the total regional energy system.

To give a yardstick of comparison, in the last 17 years since the Northwest Power Act passed, Bonneville has, through one of the most aggressive conservation programs in the nation, saved 640 average megawatts of energy in the region.

The loss of 2400 average megawatts of generation from these five projects represents over three times the energy conservation saved in the region since 1980 through Bonneville's conservation program.

Now let me quickly talk about cost implications. This analysis only relates to energy costs. It does not include any costs associated with the loss of transportation, recreation, irrigation, cultural resources or other issues. The Corps General has already indicated those will also be studied as well.

The cost of assumptions here assume a medium forecast for energy prices.

In simple terms, when considering the effect of the natural river drawdown, the lower Snake projects and John Day reservoir, there are at least five categories, or tiers of cost, that need to be considered.

The first tier is debt. First there is an outstanding Federal appropriation or debt for the five dams. This debt is now the obligation of the Bonneville Power Administration and is paid by ratepayers of the Northwest. It totals $1.3 billion for the four Snake dams and John Day.

The second tier is construction costs: bypassing the dams to create the natural river conditions. The Corps, as the General indicated, has already estimated preliminarily that the cost of lower Snake drawdowns is just about $500 million.

Our analysis done for the Northwest Power Planning Council, assumes the cost of the John Day construction would be a little under $1 billion. These are preliminary costs and they would total, if put together, about $1.5 billion. That's the second tier.

The third tier of costs is the largest, and that is related to the energy revenue that would be lost to Bonneville as a result of bypassing generation at the projects.

Our initial assessment assumes again a medium price forecast for energy, out into the future, and that the 1995 biological opinion operations on the river, including flow and spill programs on the Columbia system, remain in place. Changes in energy prices and river operations could affect these numbers up or down.

With these assumptions, then, the net present value today of the future lost revenues associated with electric generation at the

lower Snake projects, if they were removed, is $3.5 billion. On a levelized annual basis, this would be about $208 million per year over the next 50 years.

The value for lost generation, assuming natural river drawdown at John Day, is $228 million per year, or just over $4 billion in net value for the next 50 years.

Spillway crest drawdown at John Day would reduce the $228 million per year figure by roughly half.

Therefore, the total net present value of lost revenues from the natural river drawdown at all five projects, to give this some context, would total just over $7.5 billion in today's dollars. This value accounts for $1.8 billion in costs, operating and maintaining and rehabilitating these projects that will need to be invested in the projects during their remaining life.

So, in other words, that number is netted against the $1.8 billion already.

There are two other tiers of potential costs that should also be considered, although we don't have specific numbers for them today.

The first is electrical reliability. The loss in hydro generation capability of these projects may have serious electrical reliability implications. The scope of the impacts would depend on when, where, how the lost generation was replaced and whether additional transmission lines would need to be built.

We used, for example, these projects quite extensively in the freeze of 1989 when we were going beyond the regional energy system's capacity by significant amounts, and they were very valuable then.

Much more analysis needs to be done before we could judge the cost associated with maintaining the reliability of the regional system.

No costs have been included in the analysis I just presented to account for potential system reliability impacts.

Finally, air quality. The electric energy produced by these renewable hydro projects is energy that is compatible with clean air. Bonneville recently received an award from the National Resources Defense Council for having the lowest of air emissions of any electric generation system in the west. Federal standards are being considered to place additional cost on electric generation from coal, oil or natural gas to mitigate the pollution they cause, including CO2 pollution.

If the hydro generation from the four Snake projects alone were lost and replaced by modern combustion, in other words, state-of-the-art combustion turbines fired by natural gas, our preliminary analysis indicates it would result in over four million metric tons of CO2 per year in the atmosphere. Loss of John Day generation would significantly increase likely double, this number.

So, finally, the cumulative rate impacts, which I will try to summarize here, because I am over my time. Despite our cost cuts, Bonneville is still about 10, 20 percent above the marketplace right now. We hope that the marketplace will change. Our contracts are locked up for 5 years. We are looking to get our costs down to two cents in 2000, and we think that will make us competitive. But right now we are about 10 percent or 20 percent over market.

If we were adding together all of the costs I just described and applying them to a rate impact, it would depend upon how many of those tiers of costs were borne by the ratepayers versus the taxpayers, add 10 to 25 percent on our cost structure.

In today's market conditions, we simply couldn't do that without ending up having serious economic impacts for the agency and the U.S. Treasury. And what those would be, I think, requires further analysis. We are committed to do that as a result of the Corps study.

And with that, Mr. Chairman, I will submit my testimony.

[The prepared statement of Mr. Robertson may be found at end of hearing.]

Mr. DOOLITTLE. Thank you. Mr. Stelle is recognized.

STATEMENT OF WILLIAM STELLE, JR., NORTHWEST REGIONAL DIRECTOR, NATIONAL MARINE FISHERIES SERVICE

Mr. STELLE. Mr. Chairman, and Mrs. Chenoweth, Mr. Crapo, thank you for the invitation for us to testify here today before you. I appreciate that.

I'm going to skip the details of my written testimony I would like to submit it for the record and summarize a couple observations.

The NMFS role and the Federal role in the recovery and restoration of anadromous fish in the Snake basin is in some respects fundamentally fairly simple. It is to develop a restoration effort that meets the requirements of Federal law that is biologically sound, and legally defensible.

Those Federal laws include the Federal Endangered Species Act, Clean Water Act, Northwest Power Planning Act, and importantly, Federal trust obligations to the treaty Tribes of the Columbia and Snake Basin.

The recovery effort is a comprehensive effort that involves all stages of the life cycle. It involves improving and protecting freshwater spawning and rearing habitat, improving survivals through the downstream migration through the hydropower corridor, improving survivals while the salmonids are in the ocean, and when they return to their spawning grounds.

The restoration effort, thus, is a comprehensive cradle-to-grave effort.

The topic that we will discuss today in more detail is but one component of that larger effort. It is how do we improve survivals of these salmonids through the main stem migration corridor that is populated by at least eight major Federal dams.

The 1995 biological opinion by the National Marine Fisheries Service found that the Federal hydropower system does jeopardize the continued existence of these runs, and it needs to be improved.

The NMFS opinion developed an alternative that calls for interim measures to immediately improve salmon survivals while additional information is developed on the long-term options for the system itself. Those decisions on the long-term are scheduled for 1999.

Going back to my first major point concerning a legally defensible and biologically sound approach, we are pleased that a Federal Court recently concluded that this opinion and its implementation by the Federal agencies meets the requirement of the Endangered Species Act and Federal law.

We have been and remain committed to a biologically sound and legally defensible restoration strategy for anadromous salmonids, and the decision of the court is gratifying.

We were furthermore impressed that Montana, Idaho, Oregon, Washington, and Alaska all argued in the litigation for full and effective implementation of that opinion as the proper pathway.

Given the substantial disagreements over salmonid recovery here in this system, that is progress indeed.

Today, as at the time when NMFS issued its the biological opinion, there is a rift on what is the best pathway to improve survivals through the hydropower corridor.

One side argues that the runs have declined to the point of listing during the two decades that we have been barging fish around the Federal dams instead of sending them through them, and it is time to conclude that barging doesn't work and to put the fish back in the river because that will be a better course. And change the configuration of the system by taking out some of the dams—Snake dams or main stem dams.

The other side arguing that factors beside the hydropower system have led to the fishes' decline, that juvenile fish transportation provides about as much improvement in salmon survival as would the removal of the Snake dams, and that given the present configuration of the dams, the best thing to do in the immediate term is to transport as many fish as one can collect.

In light of these deep divisions within the region, NMFS has identified several areas of uncertainty and committed to addressing them with the Army Corps of Engineers, and with the states and the Tribes in the region.

These questions include what is the mortality rate of fish migrating in the river, what is the ability of the transportation system to mitigate for that mortality, what is the survival rate needed to ensure the survival and the recovery of these anadromous stocks, and will either of the two major pathways, continued and improved transportation, or natural river, get us there.

My testimony goes through a number of the empirical studies that are under way to give us the data that will enable the region to make better choices on which option is likely to get us to our goal. I will not summarize those data efforts now.

I would only emphasize to you that it is very powerful work underway, and we need to maintain that work and remain committed to it because it will give us the best information we can generate on which option is the best option.

This decision cannot be by a flip of a coin. There must be a reasoned approach to an important decision facing the Pacific Northwest. The Federal agencies remain committed to that, and our role in particular is to develop a set of options for salmonid recovery and for the hydropower system to develop the information on what each of those options may buy us and what they may cost us. And then to engage in a discussion with the leadership of the Pacific Northwest to answer the question, which option is the right option for the region.

That is the pathway we are on. We remain committed to it. We remain committed to a collaboration with the states and the Tribes in that effort. And first and foremost and fundamentally, we re-

main committed to generating the best science we can to use as the compass in that decisionmaking.

Mr. Chairman, thank you.

[The prepared statement of Mr. Stelle may be found at end of hearing.]

Mr. DOOLITTLE. Thank you, sir.

Mr. Penney, you are recognized for your testimony.

STATEMENT OF SAMUEL N. PENNEY, CHAIRMAN, NEZ PERCE TRIBAL EXECUTIVE COMMITTEE

Mr. PENNEY. Thank you, Mr. Chairman, Representatives Chenoweth and Crapo.

I would like to thank you for this opportunity on behalf of the Columbia River Inter-Tribal Fish Commission and the Nez Perce Tribe, and I would like to welcome you to Nez Perce country. The Nez Perce Tribe originally occupied over 13 million acres which included Northeastern Oregon and Southeastern Washington as well as most of North Central Idaho.

I would also like to request my comments be submitted for the record.

Mr. Chairman, I would also like to make some comments that are not in my written testimony, and first of all, I think as far as the Treaty reserved rights of the Columbia River Tribes that are involved, that Article VI of the U.S. Constitution I think verifies the rights that the Tribes have reserved.

Our treaties are not between any department, between any agency, or any Bureau. It is with the U.S. Government. And I think the Article VI supports my statement in my written comments.

Mr. Chairman, I would also like to point out, there were three important scientific studies that have been completed in 1996.

One is entitled Return to the River, Restoration of Salmonid Fisheries to the Columbia River Ecosystem, and that's by the Independent Scientific Group submitted to the Northwest Power Planning Council.

There is a salmon decision analysis regarding the lower Snake River feasibility study by Harza Northwest, that was submitted to the Army Corps of Engineers in what they call PATH, Plan for Analysing and Testing Hypotheses, conclusions of the fiscal year 1996 retrospective analysis. And that's conducted by 22 authors, and it was submitted to the National Marine Fisheries Service.

All three of these reports devote significant analysis to the drawdown proposals.

Mr. Chairman, at this time I would like to submit for the record, what is entitled the Spirit of the Salmon, which is the restoration plan that the Tribes have proposed.

What's interesting about the Spirit of the Salmon, is that the scientific conclusion of those various reports rendered in these studies, support some of the ideas in the Spirit of the Salmon.

And I think all three of the reports that I have referenced conclude that drawdowns of lower Snake River dams would bring the salmon back to these areas.

There was also mentioned earlier, Mr. Chairman, the role of the Northwest Power Planning Council and the other agencies, as mentioned by Mr. Maddock.

But under the Northwest Power Act, it states that these Federal operating and regulating agencies are directed by Congress to exercise their responsibilities in a manner consistent with the purposes of the Act and other applicable laws to provide equitable treatment for fish and wildlife.

And it also states in the purpose of that Act that it must also counter past damage and work toward rebuilding those fish and wildlife populations that have been hampered by the hydro system.

And we also realize, Mr. Chairman, that the Council must develop this program while assuring the Pacific Northwest an adequate, efficient, economical and reliable power source.

Also, Mr. Chairman, the conclusions as stated in my written testimony regarding the natural river drawdowns of the lower Snake River dams, John Day pool to spillway crests, are critical to, one, greatly increase spawning areas and production potential; No. 2, ensure that adults reach spawning areas by reducing migratory energy demands; and three, reduce temperatures and dissolved gas; four, scientifically increase juvenile travel time and reduce substantial juvenile mortalities through dams.

Mr. Chairman, I think as stated, you know, this should be a regional issue, and we believe that there is a critical need for an inter-governmental decisionmaking process that will protect and restore fish and wildlife, while allowing sustainable use of the river, including power, irrigation and navigation.

I think our main point, Mr. Chairman, is that the status quo that has been going on is totally unacceptable to the Tribes.

We are looking forward to engaging in discussions at the highest level of the goverment- to-government level consultation, and we are encouraged that the states, Federal Government and Tribes are participating in a meeting next week on June 3rd among the sovereigns to discuss beginning to work together to assure fish and wildlife restoration in the face of energy deregulation as mentioned by Congressman Crapo.

So we do believe that this is a complicated issue.

I appreciate having the hearing here to gather information on how we can best address these problems, and can assure you, as well as the others on the panel, that we're committed to fishery restoration.

Thank you.

[The prepared statement of Mr. Penney may be found at end of hearing.]

Mr. DOOLITTLE. Thank you. The members will now have an opportunity to address questions to the panel.

Mr. Maddock, what is the current position of the Northwest Power Planning Council with respect to juvenile fish transportation?

Mr. MADDOCK. We have a plan that was adopted in 1994.

Mr. DOOLITTLE. Could you pull that mike a little closer, please?

Mr. MADDOCK. Our plan which was adopted in 1994, but which is currently being amended, so I would have to say that question remains open.

Mr. DOOLITTLE. Any ideas which direction the amendment is going to go?

Mr. MADDOCK. Well, clearly it's a matter of learning each year more about the survival that's occurring, both in-river and through transportation.

And that's one of the reasons why the state of Idaho had taken a "Spread the Risk" approach, was to gain better understanding and a better comparison scientifically of what the best method would be.

This year may be a critical year as far as understanding more fully just what that comparison is. But we don't have the results this year in fully.

So I would have to say we don't, at this point we wouldn't be able to answer that question until we have more information available.

Mr. DOOLITTLE. And what has been the Northwest Power Planning Council's position on Idaho's "Spread the Risk" strategy?

Mr. MADDOCK. I think that's been not something that's been fully endorsed by the Northwest Power Planning Council, but the council members, state of Idaho developed the program and have advanced it through the Executive Committee process, which includes—which is essentially the Federal agencies and the Northwest Power Planning Council and the tribal interests, that's the existing process under which we've tried to work toward regional consensus.

And that's what we were referring to in our comments, that we didn't find that to be completely implemented by the—by that executive committee process.

Mr. DOOLITTLE. You stated that the Governor is not willing to sacrifice the Port of Lewiston.

Could the Port survive if the permanent drawdown of the four lower Snake River dams is implemented?

Mr. MADDOCK. Any operations of the Snake below minimum operating pool would stop transportation and navigation on the Snake River.

So, drawdowns would eliminate that as an option.

Mr. DOOLITTLE. Even if the permanent drawdown of the four lower Snake dams is not adopted, could the Port survive if the John Day Dam is drawn down below the minimum operating pool, the spillway crest, or to natural river level?

Mr. MADDOCK. It's my understanding that there is a reason to believe that that's worth—there's additional information needed in order to answer that question.

At one time there was some discussion that there might be possibly the ability to transport with a drawdown on John Day. But that question I think remains open, and undecided.

Mr. DOOLITTLE. Gen. Griffin, do you have an opinion on that issue?

Gen. GRIFFIN. Sir, if you go to spillway crest, I believe navigation could continue, although the characteristics of the barges that would be on the river would be different. They couldn't draft as much. Exactly how much, I'm not sure.

If you carry it all—and there would have to be some channel deepening efforts that would have to go along with that, and there would be an associated cost with that.

And so there would be a definite economic cost, mitigation cost, if you will, if you tried to continue navigation and spillway crest.

Mr. DOOLITTLE. How many miles of deepening efforts would be required, do you believe?

Gen. GRIFFIN. Sir, I'm uncertain of that. I would not be able to answer that.

Mr. DOOLITTLE. All right. Well, let me go back to Mr. Maddock.

Do you think that the studies currently underway will provide significant new data to the policymakers who are scheduled to make important decisions on river operations in 1999?

Mr. MADDOCK. Oh, I think they definitely will.

Mr. DOOLITTLE. Do you think the questions about what is effective and isn't effective will be resolved by the time that study comes out?

Mr. MADDOCK. I can't attest that all that information will be clear to us by that time, but we certainly will know a lot more, and I think will be able to make better decisions, based on what we're currently doing today.

Mr. DOOLITTLE. OK.

Gen. GRIFFIN. Sir?

Mr. DOOLITTLE. Yes. General.

Gen. GRIFFIN. In answer to your question, the river miles that would be affected by spillway crest would be 20 to 25 miles.

Mr. DOOLITTLE. So we would need to have that amount of dredging, then, to allow for the navigation?

Gen. GRIFFIN. Yes, sir, some amount in there. And depending on whether it's hard pan or loose material, the cost could be high.

Mr. DOOLITTLE. OK. Thank you.

Let me just indicate to the members, I think we will probably do two rounds of questioning, so let me recognize Mrs. Chenoweth at this point.

Mrs. CHENOWETH. Thank you, Mr. Chairman.

Mr. Maddock, I'm very interested in both your comment and my colleague's comments, Mr. Crapo, about having a regional power governance authority.

For the record, how does that relate to what is already in place in the flow augmentation?

Mr. MADDOCK. Mr. Chairman, and Congressman Chenoweth, the Northwest Power Planning Council is only one forum that is addressing regional issues. There has been, since—well, in the last 2 years, an Executive Committee approach that brought all of the Federal agencies together, and was nominally chaired by NMFS, and so that is a parallel process to the Northwest Power Planning Council.

And of course some of the operating agencies have previously had the system operations review which joined together the three major Federal agencies as well.

So there are a variety of groups that are currently looking at river management decisions right now due to the ESA, NMFS and the Executive Committee decision approach have apparently the most, strongest legal position in order to do this.

But that's the one that was referred to in my comments, were Montana and the lower Tribes have indicated that they no longer want to participate in that process.

So we have a rather fragile and multifaceted system right now. We really need to find a way to bring that all together.

Mrs. CHENOWETH. Mr. Maddock, could you explain for me how the parallel organization that you referred to, parallel to your organization, has a stronger legal position?

Mr. MADDOCK. Well, I say that, and that's speculation on my part, but to the extent that the ESA has—is the authority under which NMFS is looking, developing their recovery plan, that is the legal authority for the Executive Committee approach. And it's one that does bring the various agencies together, including the Northwest Power Planning Council.

Mrs. CHENOWETH. Thank you, Mr. Maddock.

Gen. Griffin, welcome to Idaho.

Gen. GRIFFIN. Thank you.

Mrs. CHENOWETH. I hope you enjoy your new huge responsibility, half the country. My goodness.

You mentioned in your testimony, I'm not sure that you read this part, that the Corps has eight major dams on the Columbia. And those lower Columbia dams that we're involved with here that help provide for our Port, slack water for our Port, are the Ice Harbor Dam, Lower Monumental Dam, Little Goose and the Lower Granite Dams.

In my opening statement I made mention of three feasibility—three options in your feasibility study. And that the first two had been determined not to be feasible to go ahead and study, and that's contained in your testimony in paragraph 2 on page 2, isn't that correct.

Gen. GRIFFIN. Yes, ma'am. For drawdown options, the only drawdown option that is feasible is to natural river level. But there are other options in the study that we're looking at, which is current condition and improved condition.

Mrs. CHENOWETH. But those were determined not to be part of this study.

Gen. GRIFFIN. No, ma'am, they are being evaluated as alternatives to drawing down the reservoirs.

Mrs. CHENOWETH. Right. OK. I see that my light is on, Mr. Chairman, and I had another question that I wanted to ask the General.

Mr. DOOLITTLE. Just go ahead and ask. As long as it is yellow.

Gen. GRIFFIN. I will just have to answer fast.

Mrs. CHENOWETH. General, on page 3, top of page 4, you indicate that the impacts of natural river drawdowns on the lower Snake river water and power users, your testimony goes through the impacts on fish passage, on irrigation, 1991 inventory, identified a total of 31 withdrawal facilities on the four lower Snake projects, on navigation you said, at the top of page 4, and I don't believe this was testified to, but all commercial navigation on the lower Snake River from its confluence with the Columbia River to Lewiston, Idaho, will be eliminated.

Gen. GRIFFIN. Yes, ma'am.

Mrs. CHENOWETH. Isn't that correct?

Gen. GRIFFIN. Yes, ma'am.

Mrs. CHENOWETH. All right. Thank you, Mr. Chairman. I will yield.

Mr. DOOLITTLE. All right. Thank you.

Mr. Crapo, you are recognized.

Mr. CRAPO. Thank you, Mr. Chairman.

I would like to go first to Mr. Stelle. Surprise?

In your testimony you pretty well described some of the competing approaches to how we will protect the salmon and steelhead.

Could you compare for me the relative need for flow augmentation from storage water in Idaho between the two approaches that you discussed?

Mr. STELLE. Yes. First of all, let me describe the function of flow augmentation.

Mr. CRAPO. Sure.

Mr. STELLE. The function of flow augmentation under the current operations is two fold, one of which is to try to operate this system the way we have it in as most fish friendly way as possible in order to best evaluate what kind of improvements in salmon survivals can we milk out of this system as it is currently configured.

Based upon that, and based upon some general information that flows help fish, we identified in the biological opinion some general ranges of good flows that we believe represent good conditions for migrating fish. And we have recommended to the Corps and Bureau that they pursue those flow objectives in the operation of the system itself.

We are also then paralleling this operation with some very specific monitoring efforts on what are fish survivals in each of the pools in each of the projects as we go down the river, for the entire year, year by year.

And as we implement this operation, we will get very specific, very hard data on what the fish are doing under a full range of environmental conditions that we experience over this four or 5 year period.

The purpose of flow augmentation is to try to improve in-river migration conditions as best we know how now so that we can also measure it and see whether or not we can tease out any specific hard data, correlating fish survivals with flows.

Mr. CRAPO. But as between the two competing approaches as to how to best help the fish, in which—what's the comparative need for flow augmentation?

Mr. STELLE. To improve in-river conditions for in-river migrants.

Mr. CRAPO. Meaning that the in-river approach would require more flow augmentation?

Mr. STELLE. Meaning that in order to maximize the survivals of in-river migrants, we want to try to provide good water for those fish, yes.

Mr. CRAPO. When you say good water, what are you talking about?

Mr. STELLE. The flow objectives that we stipulate for spring, summer Chinook, there are two sets of them, one for the Snake system, one for the Columbia, and, Dave, you may need to help me on this, but I think the Snake River flow objectives are around a hundred kcfs for springtime; for spring Columbia River, it's around 200, from 200 to 240, or something like that.

Mr. CRAPO. So are you saying that the natural river option would require increased flow augmentation?

Mr. STELLE. The natural river option may or may not. It depends.

First of all, the natural hydrograph of the Snake, how did this river used to work before we built the Hells Canyon complex, before we built the big project, the Bureau projects, before we built the Corps lower Snake dams.

Well, the hydrograph, the way this river used to run, were big powerful flows in the springtime that would taper off in the summer.

And you know this very well, I know, Congressman.

Under a natural river drawdown scenario, though, it is, and, again, I am estimating here, flow augmentation in the springtime may not be necessary, depending on how the Hells Canyon complex is operated. If it holds all the water back in the springtime, fish won't do well.

So we are still going to have to have contributions in the springtime and for spring, summer migrants, given the fact that we have the ability to control those upstream resources.

Mr. CRAPO. Would dam modifications of various types—What I am talking about is the alternatives, looking at using the status quo and then improving it, would dam modifications of various types and other types of improvements increase or reduce the need for flow augmentation?

Mr. STELLE. My guess at this stage, Congressman, is reduce.

Mr. CRAPO. Would you tell me exactly what the——

Mr. STELLE. And that applies both from the upper Snake and the upper Columbia.

Mr. CRAPO. Could you tell me, when we talk about new and improved transportation packages, to try to improve the current system but keep it operational, what are we talking about there?

Mr. STELLE. Improving the ability to collect the little fish at the dams, first and foremost.

Second, improving the ability of the big fish to get back home.

Mr. CRAPO. And those general categories you are talking about there, if implemented properly, you believe will reduce the need for flow augmentation?

Mr. STELLE. Those—Improving our ability to collect fish will maximize the benefits, if there are benefits, to the transportation system because more fish will be transported, less fish will be left in the river to go through the turbines and die.

So the ability to—the improved ability to collect fish doesn't necessarily tell you whether or not you will barge them or bypass them back into the river. It simply means that you will reduce the number of fish going through the turbines.

And fundamentally, if you are a little fish, you don't want to go through those turbines.

So the improved collections still leaves open the issue of whether you want to barge them or do you have a healthy enough river environment that you want to put them back in the river.

Mr. CRAPO. Thank you. I see my time has expired. I will followup on the next round, Mr. Chairman.

Mr. DOOLITTLE. Thank you. Mr. Stelle, you referred to sticking to the best science, in your testimony.

Does the best current science show higher rates of survival for out-migrating juveniles that are in in-river or those that are transported?

Mr. STELLE. Those that are transported.

Mr. DOOLITTLE. All right.

Mr. STELLE. Mr. Chairman?

Mr. DOOLITTLE. Yes.

Mr. STELLE. I could describe to you the basis of that conclusion, if you would like. I would simply note that there are very powerful empirical studies underway now whereby we are getting very accurate information about what's going on in the system with the fish.

And we are getting early returns this year to answer the question, who does better, and the data right now will be in this year and next year, and basically we are seeing about a two to one benefit for those that migrate downstream in the barges.

You will lose 50 percent of the fish in the river, based on what we know, if you leave them in the river.

Mr. DOOLITTLE. Well, how will this be improved if transportation is eliminated and if permanent drawdown is implemented?

Mr. STELLE. It wouldn't. It would eliminate the transportation option. Two questions.

First of all, what kind of survival benefits can we get from the transportation system? And how do they compare to the survival benefits we can secure through improved in-river migrations?

One is a comparative question, and then the larger, more fundamental question is, are either survival benefits enough to recover and restore these stocks. That is basically the analytical approach we are undertaking now.

If the decision of the region is to go with the natural river drawdown because it provides a higher probability of restoration over the long-term, then it basically eliminates the transportation option. It's a decision that we won't go that pathway.

Mr. DOOLITTLE. Do you have a sense in your own mind of which is the more likely beneficial alternative?

Mr. STELLE. I think that most credible fishery scientists would say that if the simple question you pose is what is the best long-term restoration strategy, regardless of other circumstances, they would probably recommend natural river drawdown.

Mr. DOOLITTLE. There's an Oregonian article, I have a copy of it here.

Mr. STELLE. There are lots of them.

Mr. DOOLITTLE. Let's see. Do I have a date on this one? The 17th, I believe, is the date, May 17th.

Mr. STELLE. Yes.

Mr. DOOLITTLE. Which states that NMFS has directed the Corps to develop a list of all those holding permits to withdraw water from the system, to rank them by the degree by which permit hurts salmon.

Is that indeed what NMFS has done?

Mr. STELLE. Yes. Mr. Chairman, what we did is advise the Corps that continued issuance of water withdrawal permits in the system without regard to the cumulative impacts of those continuing withdrawals is no longer a good idea.

We are recommending that we do what every good farmer does, and that is that recognize that there are limits in this system, that if we are working hard, like Idaho is, to put more water in the sys-

tem, it makes no sense to turn right around and take it right out again.

So the policy that we have recommended to the Corps is in essence a no net loss policy.

Water, new irrigation withdrawals would be permissible, but only if they are offset so that we don't further dig ourselves into a hole.

Mr. DOOLITTLE. Was this policy intended to apply to the existing water rights holders or just to the new ones?

Mr. STELLE. It is intended not to apply retroactively to the existing 404 permit holders.

Mr. DOOLITTLE. For dredging, let's suppose they do this dredge, does that take a 404 permit?

Mr. STELLE. I think that if it's a Corps project, it doesn't technically require a 404 permit. But it is the same equivalent analysis of pros and cons under the National Environmental Policy Act for dredging operations.

Typically the Corps doesn't permit itself, though.

Gen. GRIFFIN. Sir, we have to go through the process, we will still go to the various state and Federal agencies.

Mr. DOOLITTLE. Now, we have had some problems with being able to do dredging in the San Joaquin River, which is not in your jurisdiction, I take it, but——

Gen. GRIFFIN. No, sir, it isn't. I have a large area, but not that big.

Mr. DOOLITTLE. And I think the contention was, because when the dredge pulls up the material and water spills over the side, you are putting water back into the river, and that somehow violates somebody's regulation.

Do you know anything about that?

Gen. GRIFFIN. No, sir.

Mr. DOOLITTLE. How about you, Mr. Stelle?

Gen. GRIFFIN. I know you have to get a water quality certification from the state. It sounds like that is what it is tied up into.

Mr. DOOLITTLE. You would think if it came out of the river, if it spilled over the side, went back in, it wouldn't be a problem.

Gen. GRIFFIN. No, unless there was a certain amount of turbidity that is happening, or there could be a fish and wildlife impact. They may have an endangered species there that is in jeopardy because of the turbidity of the water.

There are a number of things that you get into when you try to permit. But we really have a good relationship here in the Pacific Northwest.

Mr. DOOLITTLE. Well, it is perhaps not as rosy a situation in California. Which is why all of these people should be concerned, because as bizarre as some of these ideas seem, it is entirely possible that they could come to pass.

Mrs. Chenoweth?

Mrs. CHENOWETH. Thank you. Thank you, Mr. Chairman.

Gen. Griffin, I wanted to return to questioning you. At the end of your statement, didn't you say that there would be no dams breached? Did I understand that correctly?

Gen. GRIFFIN. Ma'am, what I had said was we are undergoing a study. As part of the biological opinion, we have been charged with

doing a study for long-term improvements of the system for salmon.

Now, one of the options then is a removal of the dam, to go to natural river condition.

What I said was, I am authorized by Congress, the Corps is authorized to operate our projects right now for multiple purposes; recreation, hydropower, navigation, flood control, municipal and industrial water, and a few others. Fish and wildlife, of course, and that's why we're here.

But if we were to alter those purposes, given Congress' authorization to the Corps to operate these in such a way and to provide money, funds to operate them in such a way, if we determined through a study process, that we would cease to operate those projects that way, we must go back to Congress to seek reauthorization.

And in this case, we would do the feasibility report, and if there was a decision or recommendation were to go to natural river condition, and therefore bypass the dams, then we would provide a Chief's Report to the Congress requesting both authority and funding to proceed.

And my point there, ma'am, was we just simply couldn't make this decision and the Corps could go off and do it.

Mrs. CHENOWETH. I appreciate you're saying that without the reauthorization of Congress, regarding your specific duties, it can't be done.

I just wondered, have you seen your Section 5, Interim Status Report, by chance, or has anyone briefed you on this?

Gen. GRIFFIN. Is this the Harza report?

Mrs. CHENOWETH. No. It is an internal report. It wasn't sent to me. I got it off the Internet.

Gen. GRIFFIN. I have not seen that report, per se. I could be familiar with the data in it.

Mrs. CHENOWETH. It does talk about the permanent natural river scenario from all the other drawdown scenarios, structural modifications are undertaken at the dams, allowing reservoirs to be drained and resulting in a free-flowing river that would remain unimpounded. This is in paragraph number 2.

It goes on to say, for flows of 20,000 cubic feet per second, the total drawdown below normal maximum pool levels would be approximately 150 feet at Lower Granite, 114 feet at Little Goose, 108 feet at Lower Monumental, and 97 feet at Ice Harbor.

It goes on to say the permanent natural river option would remove the earthen embankment section at Lower Granite and Little Goose and form a channel around Lower Monumental and Ice Harbor Dams.

Your report goes on to say, it would be necessary to develop an appropriate channel around the powerhouses, spillways and navigation locks and install protection measures at these remaining structures.

Another report we pulled off the Internet, Section 7 of your Interim Status Report, indicates permanent natural river drawdown has the greatest estimated benefits for juvenile salmon in the lower Snake River, based on salmon passage model results, and elimination of reservoir and dam passage mortality once in operation.

So it looks like a foregone conclusion. It would be completely—it would completely eliminate power production in the lower Snake River and commercial navigation between Lewiston, Idaho, and Pasco, Washington.

And then finally, your recommendation here, the Corps' recommendation, is based on estimated biological benefits, other environmental effects and regional acceptance, the permanent natural river option is the only drawdown alternative recommended for further study.

Gen. GRIFFIN. Yes, ma'am. Well, of the drawdown options, it is the only one we would look at.

Originally, when we started the study, we could go to a mid-level drawdown or spillway crest drawdown.

So of the drawdown options, there is only one natural river option; current condition, you always look at; and the current condition with the surface bypass, which holds a lot of promise. I will echo what Mr. Stelle said, is for the good of the salmon, to the exclusion of hydropower and all other purposes, if we were just doing this for the salmon, probably the best thing is to remove the dams.

Mrs. CHENOWETH. Has the Congress authorized you to invest your time and energy and intelligence of this great Corps of Engineers to even investigate this? Have they funded it?

Gen. GRIFFIN. Yes, ma'am. We are funded to do the study to execute part of the biological opinion.

Mrs. CHENOWETH. I don't think so.

Gen. GRIFFIN. That is just one——

Mrs. CHENOWETH. This is something we are working on.

Gen. GRIFFIN. I will say that of the drawdown options, the mid drawdown or spillway crest, the impacts far exceed the benefits. And we all agree to that.

And so in our recon report, or interim report, we looked at a number of options, and now as we go into the feasibility report, we eliminated all but these three options, which is natural river drawdown, with no intermediate look, because the benefits and costs are just simply not worth the benefits to the fish, the cost to the system, and therefore we are looking at one drawdown option and that's natural river, and then the current condition, and the improved condition, which would be surface bypass, gas abatement measures, and other measures that would make the system more fish friendly.

Mrs. CHENOWETH. You are looking at, according to Section 5 of your Interim Status Report at drawdowns at four dams that I just mentioned, right? Not just one?

Gen. GRIFFIN. Yes, ma'am. It would be all four.

Mrs. CHENOWETH. In fact, in the testimony that you didn't read, the very last sentence, "Preliminary returns from the 1995 groups, which should be viewed with great caution at this time, show transported fish returning at nearly twice the rate of in-river fish."

That seems to contradict your oral testimony, and I wanted to give you a chance to explain that.

Mr. STELLE. My apologies. I hope that I was in fact intending to say just that.

The returns that we have now from the larger transportation evaluation begun in 1995, we've got that year class, about 30 per-

cent of those fish are back now, we expect about 70 percent will come back next year. And that's why you have to be cautious about drawing any conclusions.

But basically, we're getting I think as of last week, the reading was about a 2.6 to one transport benefit for wild fish and about 1.9 to one for hatchery fish.

So it pencils out to at least a two to one benefit for transportation. That is what I was intending to say. Thank you. I apologize for being obscure.

Mrs. CHENOWETH. Mr. Stelle, you have also testified, or indicated on page 3 of your written testimony that you are formulating as a third part of your strategy, in order to refine analytical tools available for estimating results that you can expect,——

Mr. STELLE. Yes, ma'am.

Mrs. CHENOWETH. You have put together a working group called the Plan for Analysing and Testing Hypothesis, otherwise known as PATH.

Mr. STELLE. Yes. You are welcome to join, if you want, but I advise against it.

Mrs. CHENOWETH. No. I would like to.

Mr. STELLE. Yes, ma'am.

Mrs. CHENOWETH. This process includes the best analytical minds the region has to offer. It is ably and independently facilitated to ensure objectivity and improve effectiveness and objectivity.

How is this financed?

Mr. STELLE. Bonneville Power. May I explain a little bit——

Mrs. CHENOWETH. Sure.

Mr. STELLE. [continuing] what this group is trying to do?

Mrs. CHENOWETH. While you explain, let me just finish my question.

Mr. STELLE. Yes, ma'am.

Mrs. CHENOWETH. I would like to know what the peer review process is, who is on the peer review panel that will be appointed by you and the Northwest Power Planning Council, and who is on the independent scientific advisory board appointed by you. All right?

Mr. STELLE. Yes. Basically, this group has two principal functions. We will over the next, over the past couple years and over the next 3 years, as I mentioned, generate some very powerful information that adds to the suite of hard data we have on what happens to fish in this system.

The difficulty with that is that that data will describe what happened to fish under a certain set of environmental conditions over the years that the data was generated. But it will probably not represent the full range of environmental conditions that these populations will experience over time.

So we take that hard data on what did happen, but then we need to develop the ability to project what will happen under a broader suite of environmental conditions.

And one of the fundamental objectives of this group is to develop a scientifically sound modeling system to be able to give us those projections of what will happen over time. And by over time, I mean over 25, 50 and a hundred year period, in order to better en-

able the region to answer the question under each particular option, what do we project will be the outcomes for the fish as well as for others.

Mrs. CHENOWETH. So the peer review process is simply reviewing the work.

Mr. STELLE. Yes.

Mrs. CHENOWETH. And not the decisions.

Mr. STELLE. No, ma'am. The peer review process is intended to allow people who weren't involved in developing the model and the projections, and who are not sort of bought into it and who are highly credible scientists, to take a look and say, does this hold up, does it hold water, does it make sense.

Mrs. CHENOWETH. Mr. Chairman, I just have one more question, if I might ask your indulgence.

Mr. DOOLITTLE. Sure.

Mrs. CHENOWETH. Now, you operate, and the river apparently is being governed by the biological opinion that the National Marine Fisheries Service issued in 1995, correct?

Mr. STELLE. Technically, it's being governed by the Record of Decision of the Army Corps of Engineers and the Bureau of Reclamation, which was based on the recommendation by NMFS. But, yes.

Mrs. CHENOWETH. But you do go on to say in your testimony on page 6 that with regards to the potential benefits of drawdown, and you are talking here about the John Day drawdown——

Mr. STELLE. Yes, ma'am.

Mrs. CHENOWETH. You go on to say that these potential additional benefits would be expected to approve to species other than the listed Snake River Chinook and Sockeye is that are the basis of the NMFS opinion, and then you go on to say, they are also dependent upon a drawdown much deeper to natural river bed than the near-term drawdown to the minimum operating pool required by the biological opinion.

So the study, the natural river drawdown, even exceeds your own biological opinion, is that not correct?

Mr. STELLE. The issue goes to, as I understand, goes to what type of drawdown appears to make the most sense to take a look at, and what stocks of fish are most likely to benefit from either of those options.

The 1995 biological opinion in an effort to remain consistent with the plan of the Northwest Power Planning Council did recommend to the Corps a MOP operation at John Day if appropriate mitigation measures were made for the irrigators pulling water out of the John Day pool. That has not occurred.

Subsequent to that recommendation, the Federal, state and tribal fishery agencies, looking further at that, and based on the information of the Return to the River report, decided to recommend to the Corps that it suspend further specific evaluation of that MOP operation because it was too marginal, and that it look at the two more significant drawdown options, namely, spillway crest, or natural river.

That was I believe as close to a consensus recommendation to the Corps as I am aware of here, that it didn't make much sense to put a lot of effort into the little incremental benefits of a MOP. If

you are going to do this, look at either spillway crest or natural river.

Mr. DOOLITTLE. Mr. Crapo?

Mr. CRAPO. Thank you, Mr. Chairman.

Mr. Stelle, I'm going to come back to you, but hopefully just briefly, and I just wanted to wrap up the question that I was asking on flow augmentation a minute ago. Maybe I could get to what I was seeking in this way.

Under the status quo, we have flow augmentation coming from Dworshak and Brownlee and the upper Snake, basically.

The 427,000 acre-foot figure from the upper Snake I guess you could call status quo.

If we were to look to a year-round natural river option, would the flow augmentation require it be higher or lower than status quo, in your opinion?

Mr. STELLE. As a general matter, and I want to be careful here, Congressman, to not go beyond what I know, as a general matter I think that the need for flow augmentation is, as a general matter, decreased where you have a natural river option and a run of the river habitat.

Mr. CRAPO. I understand. And the reverse question would be, if we went instead to the improved transportation system approach, would, in general, the need for flow augmentation be increased or decreased?

Mr. STELLE. Unless the—If the decision of the region was to maximize transportation 100 percent, and that we were able to collect all of the little fish and barge them around the system, then you could theoretically say you don't need good water in the river.

I don't think we're going to be there, and my expectation is that we will continue to try to improve in-river conditions, including good water for fish.

Mr. CRAPO. Thank you. And I want to go to you with one more question, but Gen. Griffin, I am going to come to you on this issue, as well. So you could be prepared.

Gen. GRIFFIN. Yes.

Mr. CRAPO. You indicate in your answers to my first round of questions that the surface collection devices did not pre-determine whether we would be putting fish, once they were past the dams, in-river or in the river or in the barges.

There are those who have indicated that from what they can see, the development of the surface collection devices are indeed being designed to benefit the transportation system rather than leaving the choice open.

And I know Gen. Griffin is going to have an opportunity to answer this. But could you tell me that the efforts to collect, identify ways to get fish past the dams is not being manipulated or managed in a way to bias the decision there one way or the other?

Mr. STELLE. My understanding, Congressman, is that the surface collective prototype that is being currently installed and being improved at Lower Granite, the upper dam, is specifically designed to shunt fish into the bypass system, which in turn can enable you to send them over the spillway or send them into the barges and the bypass system, one way or the other.

So it's designed to leave open both options.

Mr. CRAPO. Gen. Griffin, do you want to respond to that?

Gen. GRIFFIN. Sir, I would say it is a two-part exercise.

The first exercise is with surface collection, if you can collect the majority of the fish, and be successful there, that is one part of the exercise, then you check them.

And then you have a second decision, you can either put them back in the river, allowing easy bypass through of the dam, or you can put them in a barge. So you collect them, and then what you do with them after that is the best decision of do you barge or do you do in-river transportation.

Mr. CRAPO. Are any funds being expended in other areas, other than the surface collector funds, are any of the funds for improvement of the facilities or expansion of the facilities in the system being expended for in-river migration purposes or for increased transportation purposes?

Gen. GRIFFIN. Well, sir, we are expending funds to do extended length screens, and there again, it's to catch fish, and once you catch them, you check them, and then you can still barge them or put them back in the river.

We are definitely spending money on extended length screens and we are also looking at gas abatement measures, which are the flip lips, and we are also doing a lot of work in that area.

Mr. CRAPO. All right. Thank you.

Let me go into another area, and I am going to ask a question here which might be a little bit, a little fun at your expense, but I hope that you can understand, I'm talking to all of you, I'm hoping that you can understand where I'm coming from when I ask the question.

The question is, who's in charge? And I think you can see where I'm coming from.

Mr. Stelle?

Mr. STELLE. I think I can answer that with a high degree of specificity, if the issue is who is operating the Federal hydropower system. Is that what you're asking? Who's in charge of the Federal hydropower system?

U.S. Army Corps of Engineers.

Mr. CRAPO. I thought that would be the answer for that part of it.

Who is in charge of the decision regarding salmon and steelhead recovery issues?

Mr. STELLE. Insofar as it relates to recommending to, for instance, the Corps of Engineers how to operate the system, for salmon restoration, National Marine Fisheries Service is responsible for formulating those recommendations. And there is a presumption that the Corps will adhere to those recommendations.

Mr. CRAPO. OK. And who's in charge of, I assume that the General's going to claim there is one, who's in charge of flood control?

Gen. GRIFFIN. Nobody wants that but me, sir.

Mr. CRAPO. OK. So if I am concerned about a decision that's being made on how the system is being operated for power production, and I go to you, General, and can you tell me that the buck stops at your desk?

Gen. GRIFFIN. On power production, sir, we have—Well, it's a fairly complicated system.

Mr. CRAPO. I thought it would be.

Gen. GRIFFIN. We have meetings every week where we balance the multi-purpose project purposes which are navigation, fish and wildlife, which is the salmon recovery, and hydropower; those are the big three, but also we're trying to take care of irrigation.

All of that is balanced in the Division. And we do this week to week, in a weekly TMT, technical management team that meets, and decides these things.

And so, you know, in fact we're the ones who are making those decisions.

Mr. CRAPO. Does anybody else want to jump in and claim a piece of this?

Mr. ROBERTSON. I guess I will. I just will put it this way: The Federal Columbia River power system is run both by the Corps of Engineers and by the Bureau of Reclamation, depending on which dam is involved.

The system is being integrated across four states and an International boundary. Bonneville has responsibility, once the environmental sideboards, once the flood control sideboards are put on the river. In other words, we meet biological opinion objectives, we meet flood control objectives and so on, then Bonneville has an obligation to try to integrate the river to its most beneficial use.

So once those sideboards are put on, we integrate across Federal Corps and Bureau responsibilities and NMFS responsibilities and try to maximize the river's values.

Mr. CRAPO. But to give you an example of what I am driving at here, I understand the answers that have been given with regard to the hydropower system, the answers that have been given with regard to the Endangered Species Act and so forth and with regard to power management, but it seems to me that those issues are very integrally tied together, and the decision regarding hydropower impacts the fish, and a decision regarding fish impacts the hydropower, and that one of the problems we have in the system, we've got the Northwest Power Planning Council, we've got the states, the Tribes, the Corps of Engineers, the BPA, NMFS, and I haven't listed others.

One of the problems we have is that we never seem to know where the buck stops. And I asked the General earlier this week in a private conversation, when you get to 1999, and you issue the decision that will be made at that point in time, what if NMFS disagrees with your decision? And I think the point is, we have a problem here, don't we?

Gen. GRIFFIN. Well, sir, in our conversation, we talked about coming to an agreement, because there will be an Administration position. Even if we disagree at our level, I believe I said that with the Administration, we will come up with a position, because that's who we work for. And then that decision will be, or that recommendation will be made to the Congress, who then will either authorize and appropriate money, or not.

Mr. CRAPO. OK. I know my time is up, so please be quick, Mr. Stelle, if you want to respond to that.

Mr. STELLE. I will be very quick. Any long time salmon restoration strategy, if it is going to be successful, has to be implemented, and if it's going to get implemented, it will only get implemented

if it has the support of the Pacific Northwest. And I think we fully recognize that.

The Tribes have to be a part of it. The states have to be a part it. The regional leadership has to be a part of a decision on what the long-term vision is for the Columbia and Snake River systems.

So this is not—this is not and will not be some simplistic decisionmaking behind closed doors. This will be an entirely public, open process, and in my view, the tribal leadership and the state leadership must be involved in making choices with the Administration on where we go for the long-term.

Mr. CRAPO. Thank you. Mr. Chairman, could I ask one followup question on that point? I can't resist.

Mr. DOOLITTLE. Certainly.

Mr. CRAPO. Mr. Stelle, I understand what you just said.

The fact, however, is, and I understand your earlier answer that NMFS is basically the controlling agency with regard to the fish and wildlife issues, Endangered Species Act, and so forth.

The fact is, the state of Montana is not happy with the way NMFS is handling this and has moved out of that process, and so have a number of the Tribes. In the testimony today, from the Governor of the state of Idaho, there was serious disagreement and dissatisfaction expressed with the way that NMFS is managing that process.

I have some concerns myself, not only there, but with regard to other areas in dealing with NMFS and some of the other Federal agencies in terms of managing other environmental issues.

I guess the question I have is, is NMFS, in this case, properly, is NMFS truly and in good faith approaching the issue of bringing everybody together for a collaborative decision, or is that something where we are just inviting people to the table and then making other decisions and moving ahead with it?

Mr. STELLE. Absolutely the former. Absolutely the former. The entire array of activities that we and the other Federal agencies are undertaking to implement the salmon recovery program are completely open and participatory.

Decisions get changed, issues get reshaped because of the participation of the tribal and state members. We have distributed to the Federal, the Federal Government has distributed to the states and the Tribes in this region a set of proposals on how to improve that inter-governmental machinery. And if the Tribes or the states have ideas on how to make it better, we are all ears. I think that a volunteer invitational effort is essential here.

Mr. CRAPO. Thank you. I see that I have done away with my time.

Gen. GRIFFIN. Sir, if I may indulge, one comment I need to leave you with, the way the Corps operates this system, there is an operating plan and there are rule curves, depending upon flows, and all of this has been worked out.

I didn't want to leave the impression that this system is operated in a capricious manner. But that there are very strict rules of engagement, if you will, these operating plans, that have been worked out for all the multi-purpose projects, so that navigation, flood control, hydropower all are balanced.

Sort of like raising kids, you never want to say one is more important than the other, and this operating plan, then, is how we do our business.

And so there are rules that folks understand that we can't vary the levels more on a certain day than are required by these curves.

Mr. CRAPO. Thank you. And thank you for your indulgence, Mr. Chairman.

Mr. DOOLITTLE. Gen. Griffin, your testimony states that, quote, what cannot be determined with high confidence at this point is the expected increased survival for both juveniles and adults out of the Snake River from the permanent lower Snake drawdown, and what contribution this would make to the overall salmon recovery effort, end of quote.

You then go on to say that the analysis and national feasibility study, meaning their 1999 report, right, should provide additional information but not a definitive answer.

And my question to you is, are you really saying that we're kind of playing tag at these dams, ending power production and commercial navigation, devastating this region, when all we will have at that time is something less than a definitive answer?

Gen. GRIFFIN. Well, sir, on that issue there, the amount of information we're gaining now is exponentially increased by some of the surveys and these pit tags that we have and radio controls, transmitters that we are able to put into fish.

The information that we are gathering now is so much better than 2 years ago. That's why Mr. Stelle is able to say with a great degree of confidence, our returns out of the barges now is two to one over what we are putting in the river because of these tags we are able to put into fish.

But, sir, I will tell you, I believe that in 2 years, we are going to lean very heavily on the National Marine Fisheries Service and the PATH team that we discussed to determine the best benefits that removal of the dams would give.

But our belief is, sir, I don't think you will ever say absolutely what's going to happen with the fish if anybody says that, I don't know how they could say that. We will have the best science, we will put up the best science we can for the benefits, versus the cost.

The costs, sir, are very easy, relative to determining the benefits, the economic impacts will be easier to determine than the benefits. And that is what the study does. It lays out the costs and the benefits to the best of our ability.

Mr. DOOLITTLE. What Mr. Stelle is talking about is developing a model, making projections. In other words, it won't be based on the hard evidence. It will be based on what evidence there is, best available data, which by the way is bad data, as to what it may be in the future and projecting it out he said even to a hundred years.

I mean, this is highly speculative, is it not?

Mr. STELLE. Two things, Mr. Chairman. First of all, I think some of the hard data that the General is referencing is not speculative at all. It's as solid as a rock.

Having said that, again, those data will have been generated over the environmental conditions which we have—will have experienced in a 10 or 20 year period.

We are talking long-term salmonid restoration for this system over time, and we will therefore necessarily have to develop a better ability to project. You will not have all the answers and you will not have all of the data governing all of the conditions.

So you use both the hard information you have, which may be very high quality information, and your best ability to project and extrapolate from that hard data. It's an absolutely conventional scientific process.

Mr. DOOLITTLE. Gentlemen, taking off your hats, as these important officials that you are, and just being citizens, and thinking this through, does it trouble you that you would devastate a community in order to attempt to improve the population of salmon? Does that bother you at all? That you put agriculture out of business, commercial navigation and so forth out of business, just on the belief that you're going to do something to improve the fishery?

I am troubled by that. I would like to know if that bothers you, just as citizens of this great country. Or is the goal so worthwhile that it doesn't matter what the cost is?

I mean, Bonneville Power is going to lose, it looks like, almost 45 percent of its power generation, if I understood your testimony right, if they do John Day and these four Snake River dams. Is that right?

Mr. ROBERTSON. About 25 percent.

Mr. DOOLITTLE. 25 percent. All right. You are already 10 to 20 percent over market value in your power prices, and then you are going to take a 25 percent hit here, as well as the cost of mothballing.

That can't improve your competitive position vis-a-vis the other areas.

And certainly we buy your power down in California. I assume we will have a harder time doing that if these ideas go through.

All right. Let's hear your answer.

Mr. STELLE. I would like to go back to what I think Mrs. Chenoweth spoke to earlier in her opening statement.

I don't think anybody is proposing that these are black and white, either/or propositions. Nor do I think that the issue before the Pacific Northwest is do you want agriculture or do you want salmon restoration.

I am utterly convinced that we can and should have both. And the issue fundamentally for the region, I believe, is what are our best options to secure those long-term goals. It is not either agriculture or salmon. It has to be both. And it can be both.

Mr. DOOLITTLE. And by the way, I know Mr. Stelle, you've got to leave to make that plane. So, please go when that time comes—and that may by here right now.

Mr. STELLE. That was about 10 minutes ago.

Thank you, Mr. Chairman, thank you members of the panel.

Mr. DOOLITTLE. If there is anyone else that has that pressure, we will just have to let you go, too. Thank you.

Well, Mr. Stelle indicated that we've got to have both, but if you do the natural drawdown, we're not going to have both, as I understand it. We're not going to have power generated from these mothballed facilities, and we are not going to have commercial navigation.

If you told me that we are going to shut down the Port of Sacramento or the Port of Stockton, which are similar to this one, only a lot closer to the ocean than this one is, that would be absolutely unthinkable and intolerable, and anyone who suggested it would be totally rejected.

But apparently it's being seriously considered here. So let me have your reaction, General.

Gen. GRIFFIN. The data we come up with must be biologically sound to come up with a recommendation to mitigate whatever costs there are for tearing out the dams. You know, if it is a billion or 2 billion, if the benefits do not outweigh the costs, then we're not going to recommend that you go to natural river conditions.

Mr. DOOLITTLE. How could the benefits possibly outweigh the cost?

Gen. GRIFFIN. Sir, that's what the study is going to determine.

Mr. DOOLITTLE. It doesn't take a study for me to know the answer to that. Why does it take a study for us to know the answer to that?

It says right here, based on estimated biological benefits cost, other environmental effects, and regional acceptance, the permanent national river option is the only drawdown alternative recommended for further study.

Now, I recognize that was your choice of the three drawdowns. But, this seems to be capturing people's imagination, developing a life of its own. I mean, there are other proposals, according to your testimony, for dealing with this than a drawdown.

Gen. GRIFFIN. Absolutely. Sir, there are three alternatives that we are looking at. Current condition, current condition with improvement, which is the surface bypass and other things that may get you to where you want to be, where you can recover these endangered stocks.

If that does it, then that's going to be the cheaper alternative and that will be the recommendation. I mean, so I'm sorry that happened, but I do understand the confusion.

Of the drawdown options that we were looking at, the sole option to be looking at of the three that we are looking at is natural river drawdown.

Mr. DOOLITTLE. I didn't get an answer from you. Mr. Stelle gave me an opinion about this. Give me your opinion as a citizen. You are in the middle of all of this mess with all of these regulations, you see how absurd this situation is. What's your impression as a citizen? I mean, how do you feel about this?

Gen. GRIFFIN. Sir, if we are to recover these endangered species, I don't know that you necessarily can say that you only do it for 500 million or a billion or two billion. That's something that the region is going to have to decide as we go through this.

Mr. DOOLITTLE. If they get a chance, although the Endangered Species Act doesn't allow taking into account economic impact. So the sky's the limit. Tear down all the dams, restore it to the way it was before Columbus landed. And in the opinion of many, apparently who have influence in this area, that is where they would like to get. That is not where I would like to get. Yes, sir?

Mr. PENNEY. Mr. Chairman, I guess back to the earlier question from Congressman Crapo, regarding where the buck stops, I think

the Federal Government, the Tribes and the states need to work more effectively, and that's why I stated in my opening comment, the Federal departments, bureaus, they are all under the umbrella of the Federal Government.

Where we have a lot of problems is when some of the laws state that there will be consultation with the Tribes, which there is from time to time, but yet our input is not seriously considered in the end product. That is where we have a lot of the problems.

To answer your question, as Chairman of our Tribe and as an individual tribal member, I think it is important to the tribe, and I think the honor and integrity of the U.S. Government is at stake, because they reserved that fishing right for the Tribes, and it is very important to the Tribe, we would expect the United States to uphold their obligation and trust responsibilities to the tribes.

Mr. DOOLITTLE. I wish time permitted to further go on, but we have two more panels, a total of seven witnesses, and we are trying to be done in an hour.

So unless my colleagues feel extremely—and of course it is up to you, you are entitled to ask more questions, because I am on a third round. But we may end up staying here longer.

Mr. CRAPO. No more questions for me.

Mrs. CHENOWETH. Mr. Chairman, I just have one.

Mr. DOOLITTLE. OK.

Mrs. CHENOWETH. I just have one of the General.

In your testimony, General, on page 2, you do list those three options that you were talking to the Chairman about.

Gen. GRIFFIN. Yes.

Mrs. CHENOWETH. But you do admit that on page 2 of your testimony, the first two options are no longer an option, and you deal only with the third option, which is the permanent natural river drawdown. So——

Gen. GRIFFIN. I would——

Mrs. CHENOWETH. I will read your statement to you.

Gen. GRIFFIN. Actually, I have it.

Mrs. CHENOWETH. Your statement says it was determined that further study of mid-level drawdowns, which was the first option, was not warranted since extensive fish passage system and other dam modification would be needed at a cost of over $1 billion in 10 years' time, and evaluations indicate that salmon survival would not be as high as undercurrent conditions.

Now, your second option, further study of seasonal natural river drawdown was dropped due to the high cost and considerable detrimental environmental and cultural impacts.

Then the next section in your testimony goes to impacts of natural river drawdowns as at the Corps of Engineers.

So this whole testimony, or what you have presented to me, plus the studies that I presented, only deal with the one option that you're looking at.

Gen. GRIFFIN. No, ma'am. We are dealing with three options, and it's in there.

We are dealing with current condition, current condition with improvements, and the natural river options. You're right, we have taken out the mid-river option, it is too expensive for the benefits to the salmon, so we are no longer studying that option.

But of the options, the last option of three that we're looking at, because of the feasibility study we are looking at; current conditions, current conditions with improvement, and drawdown to natural river. We've thrown out the other two drawdowns of the river and the only option, if you are going to draw down the river at all, is to take it all the way down, or don't study it.

Mrs. CHENOWETH. Thank you.

Mr. DOOLITTLE. OK. Thank you, gentlemen. We appreciate your perseverance here and the information you have provided.

There may be additional supplementary questions we will tender in writing and would ask you to respond expeditiously. The hearing record would be left open for that purpose.

We will excuse the first panel, and invite panel No. 2 to come up.

Mrs. CHENOWETH. Mr. Chairman, we have a guest in the audience; between panels, I would like to introduce him.

Mr. DOOLITTLE. Certainly.

Mrs. CHENOWETH. He is a special friend of the three of us, and he is here also in Lewiston, Idaho; he is our top gun—I think many of you remember the movie Top Gun, and in part, this movie was made on the life story and the heroics of one Duke Cunningham in Vietnam—and we are privileged to serve with Congressman Cunningham, and he is in the audience. I'd like for you to stand, Congressman, and just give away, there is our top gun.

Mr. DOOLITTLE. We are pleased to welcome you here to Idaho. Great that you could join us.

We have as members of our second panel: Mr. Bruce Lovelin, Executive Director, Columbia River Alliance; Mr. Sherl L. Chapman, Executive Director, Idaho Water Users Association; and Dr. W. G. Nelson, Director of Public Affairs, Idaho Farm Bureau Federation.

Would you gentlemen please rise and raise your right hands.

[Witnesses sworn.]

Mr. DOOLITTLE. Thank you. Let the record reflect that each answered in the affirmative.

We are now under the gun for time, so we will try to ask witnesses and members, and including the Chairman, to live within the 5 minutes. The lights explain when you are getting near the end. The yellow light is the beginning of the fifth minute.

And with that, Mr. Lovelin, we would welcome you, sir.

STATEMENT OF BRUCE J. LOVELIN, EXECUTIVE DIRECTOR, COLUMBIA RIVER ALLIANCE

Mr. LOVELIN. Thank you, Mr. Chairman, Mrs. Chenoweth, and Mr. Crapo. I do appreciate the opportunity to be here today.

I have provided testimony and I would plan at this point, because of the need to abbreviate the testimony to speak about a few elements of my testimony.

First off, our group is the Columbia River Alliance. We came together as multi-users of the Columbia and Snake River system.

We represent agriculture, both irrigation and dry land farming, navigation, forest products, manufacturing and community organizations.

We come together with a real strong belief that we can help and save these Northwest salmon, especially the Snake River endan-

gered salmon, while at the same time maintaining this multi-use river system.

I think that, deviating a little bit from my testimony, it is interesting, Mr. Chairman, that a little more than 5 years ago, and I'm not sure if you were here during that, but I am sure Mrs. Chenoweth was, in March 1992, this community saw and felt the effects of a drawdown. We did a test. We wanted to see if it could be done, and it was a physical test.

We drew down the Lower Granite reservoir for about a month's period, and we decided to look at certain things, how much bank was going to be exposed, and what kind of effects.

Well, it was only supposed to be a physical test. And the reason for it, and the reason why they did it in March, Mr. Chairman, is because they didn't want any juvenile fish moving down the river system or adult fish moving up the river system, because they were concerned about the negative effects to those fish.

But what was interesting during that is that we did see some effects, some biological effects. We found dead resident fish throughout the system. The National Marine Fisheries Service estimated between 10,000 and 30,000 resident fish were dead from that 1-month drawdown test.

It disrupted the ecosystem, the ecosystem that apparently we are willing to put aside over some attempts to help the salmon.

In addition, though, it created an economic black cloud, black cloud of uncertainty over this community. And, again, Mrs. Chenoweth I am sure well knows, being from this community, that everyone was very, very concerned about that.

Unfortunately, Mr. Chairman, that economic black cloud is still here. It's expanded over other parts of Idaho.

Another part of the district in Orofino, Idaho, Dworshak Reservoir, is drawn down 80 feet almost every year to help the salmon.

We cannot get the National Marine Fisheries Service to tell us what are the benefits of that drawdown from the Dworshak Reservoir or what is the benefits of the 427,000 acre-feet that the upper Snake irrigators are providing.

The thing that's most frustrating with all of this is that we have the most expensive environmental restoration program going on in the history of the Endangered Species Act, paid for by Northwest citizens, and it's almost like, from the Federal Government's perspective, this is not real money.

But it is real money. It is our money. And it's our economic growth potential that is really at stake right now.

Now, the National Marine Fisheries Service has basically developed a single-dimensioned salmon plan, one that is focused on the dams. It's a money source, but they are focusing right on the dams. Peripheral to that is of impact to irrigators, to navigation, to others. But it is focused on the dams. And here we are 5 years after the listing, and we still do not have a comprehensive salmon recovery in place yet, a plan which two independent science groups have said needs to address fishery management practices, the use of gill nets, the use of hatcheries, and it's very, very frustrating to us that we are focusing directly, and we still have this dam removal notion on the table.

A few years ago it wasn't really talked about, but now it is being talked about relatively openly.

Now, to my chart, which is the enclosure 3; I believe that we are at a crossroads, and I believe that the Pacific Northwest does not have what it takes to make the decision. And I believe also that the decision should be made now. And clearly, Mr. Chairman, from some of your comments, I think Congress can help us make that decision. We are at a crossroads.

The center of that diagram is the Harza Northwest Report. They came out with a report last year which basically said that we are really, we should make a right-hand turn or a left-hand turn. It's either dam removal, or the other side, is to keep the dams in-place and improve the smolt transportation program.

Now, Mr. Stelle did say something particularly interesting, which I need to emphasize, is that there's real time investigations of transportation of juvenile smolt, the benefits of those now, as compared to leaving them in the river.

In 1995 there was a test, we marked fish, those adults that came back are coming back right now, they're being caught 30, 40 miles downstream in a trap.

What it's showing is 2.7 times as many wild fish are coming back that were transported than those left in the river. 170 percent increase over the fish left in the river. And to me, that helps us decide which path we want to go down.

Now, we can either wait until 1999, as the National Marine Fisheries Service wants us to do, or I believe that there is economic advantage for making the decisions now.

Again, the ports in this area, they have an economic black cloud over them, economic development is important for them. Beyond that, the power system, the Bonneville Power Administration, utilities are looking elsewhere for power supply. This brings a great uncertainty to them.

But I think through our Northwest congressional delegation support, through the support of the Congress, I think it's time that we do decide which fork in the road we are going to take, that we do it in 1997 instead of 1999.

Thank you.

[The prepared statement of Mr. Lovelin may be found at end of hearing.]

Mr. DOOLITTLE. Thank you. I had Mr. Chapman next, but is it your wish to have Dr. Nelson first?

Mr. NELSON. No.

STATEMENT OF SHERL L. CHAPMAN, EXECUTIVE DIRECTOR, IDAHO WATER USERS ASSOCIATION, INC.

Mr. CHAPMAN. Chairman Doolittle, Congresswoman Chenoweth, Congressman Crapo, it is good to be here.

You have my written testimony, and because of the time constraints and your constraints, I'll just talk about a couple of the points within my testimony that I think are most important.

Mr. Lovelin referred to the Harza Report, and I think it is probably the best of the most recent reports that pull together what has been happening in the Columbia and Snake River system.

One of the things that I drew from the report and the executive summary was that there is little quantification and little justification for the benefits of all of the proposed programs or suggestions for drawdown, for transport, for in-river conditions, with regard to the fish.

It's easy, as some other witnesses have talked about, to quantify the economic impacts, the damages, so to speak, if you impose drawdowns, if you impose flow augmentation.

But little has been done to quantify what the real benefits to the fish are, if any.

There is some speculation, a lot of speculation, with regard to what we get back for what we give up. And I'm not so sure that the people in this region and in the West are willing to give up the recreation, the cheap power, the agricultural community, for the kind of benefits that are speculated on right now by the National Marine Fisheries Service and others.

There are those that would suggest that we ought to just take drawdown off the table and not consider it any more. I think if we do that, we create perhaps more of a debate than exists now.

There are ongoing studies, as you have heard about, for—or with regard to in-river survival. It is our understanding that those studies will be completed. And the Harza Report indicates that it's quite possible that in-river conditions, without drawdown, or with drawdown, either way, may be superior to some of the other systems. They seem, however, to put a lot of emphasis on the transportation system.

As Mr. Lovelin pointed out, the preliminary results seem to indicate that transportation is probably going to be perhaps the saving grace for the salmon.

We think that the options ought to be continued to be considered until we get good data. I'm a hydrologist and a geologist by profession so I lean toward science. However, I'm not a biologist. But I like to see the numbers. I like to see somebody quantify what the benefits are, if they are going to take away my livelihood.

Mr. Stelle indicated that we can have agriculture and we can have salmon, too. I think implicit in that is we can have some agriculture and we can have some salmon.

I think these kinds of issues get dehumanized. It's all well and good to talk about a reduction of 10 or 12 percent of your agricultural community as long as you are not in that 10 or 12 percent. I think that's inappropriate at this time.

The other issue that I'm deeply concerned about is augmentation. We talked about flow augmentation and whether or not that need or perceived need will stay or go away if we have drawdown or if we have barging.

Mr. Stelle indicated that he felt that it would be reduced. In general, that's probably true, that the demand for water out of Idaho would be reduced if you implemented one or the other of these.

But the problem is, that it's not reduced in the bad water years, it's not reduced in the 5-year droughts, as we have just experienced. And if it's not reduced then, what you do is you destroy the Idaho agricultural community.

There was a study done several years ago with regard to acquiring water that was projected as being needed for the National Ma-

rine Fisheries Service plans. And just so you can have a yard stick to measure against, they use a figure of a million acre-feet of water out of Idaho, out of the upper Snake River Basin from Idaho irrigation reservoirs.

Now, keep in mind, we are already giving up 427,000 feet voluntarily until the year 1999, at which time our statute that authorizes that stops, and I see no sympathy in our state to renew that statute.

The cost for that million acre-feet out of Idaho, in the low water years, was the drying up of somewhere between 444 and 570,000 acres of irrigated land, a cost of about $500 to $600 million per year in lost revenue to our economy, and the loss of about 10 to 14,000 jobs in our state.

We can't tolerate that. And we certainly couldn't tolerate that if you also destroy the Port of Lewiston and their industrial community.

We don't think that that's appropriate. We don't believe that the government has the numbers to justify that kind of sacrifice, or even a request for that kind of sacrifice. Let them study these issues, come back to us, and try and justify that.

But we think that some of the suggestions right now are inappropriate. We think that they are trying to really recover the salmon at any sacrifice to the state of Idaho.

We are the sacrificial lamb at this time.

Thank you.

[The prepared statement of Mr. Chapman may be found at end of hearing.]

Mr. DOOLITTLE. Thank you, sir.

Dr. Nelson, you are recognized.

STATEMENT OF W.G. NELSON, DIRECTOR OF PUBLIC AFFAIRS, IDAHO FARM BUREAU FEDERATION

Dr. NELSON. Mr. Chairman, and Congressman Chenoweth, Congressman Crapo, we in the Farm Bureau are particularly pleased that you are here to listen to us and our concerns.

Mr. Stelle, Mr. Lovelin said Mr. Stelle impressed him with some of the things that he said. One of the things that he did say that made me awfully nervous is in this flow augmentation, he wants good water. Good water for Idaho agriculture means our reservoir water. It means the lifeblood of Idaho. And while I'm impressed to have him call it good water, we know where it comes from. I'm going to go home being considerably more nervous than when I arrived here.

The Idaho Farm Bureau policy is very clear and precise on this issue. We believe all water in Idaho should be used beneficially. We support the following salmon recovery alternatives. Physically modify the dams rather than tearing them down and lowering the water levels, and improve barging, such as net barging and transportation.

The rest of the—of our philosophy I have outlined in my testimony, so I won't go into those.

I have a few points that I want to make, though. Agriculture is concerned with the drawdown proposals. All plans are solely focused on fish, with no consideration for the effects of such

drawdowns on humans or economic activity in the entire region. Each plan has a variety of scientists, environmentalists, and fish enthusiasts supporting the plan. But the science is really piecemeal, the speculation is really rampant, and the rhetoric confusing to anyone who really is trying to get to the bottom of this and find out which plan will be most effective.

Approximately 70 percent of the suitable habitat for salmon is found in our state, indicating we've done pretty well at preserving fish habitat.

Every plan we have reviewed includes a more normative river, whatever that is, so that juvenile salmon can migrate to the sea more quickly. There is considerable disagreement as to which strategy will be effective in bringing back the numbers which once made up the Columbia/Snake salmon fishery. No study has been done to assess the other ecological impacts of returning this permanently modified area to a non-reservoir status.

We feel breaching the dams and tampering with the John Day pool guarantees the termination of the inland waterway and will destroy Idaho's only seaport, the Port of Lewiston. As an inland shipping state, Idaho needs the Port to remain competitive. Pacific Northwest exports 90 percent of its wheat. 200 million bushels of grain move through the port per year with a value of over $859 million. About 54 percent of the Idaho production moves through this inland waterway and the lower barge rates at less than one-half the cost of rail and one-third the cost of truck transportation, directly helps farmers.

Idaho exports of wheat and barley total $350 million per year and ending barging certainly would jeopardize a large portion of these exports.

If the barge traffic would be transferred to truck and rail transportation, as some suggest, the environmental impacts would be enormous. A 470 percent increase in emissions from rail and a 709 percent increase in emissions from trucks.

To meet the flow requirements, Idaho prominently figures in balancing the water needs of fish. This water will come at the expense of agriculture, recreation and other users. Idaho agriculture is the key to Idaho's economy and provides between 25 to 30 percent of our state's economy in any given year. This segment of the Idaho economy generates about $3.5 billion and we feel these drawdowns will put that entire agricultural production in jeopardy.

Breaching the four lower Snake dams and lowering the John Day pool will have a serious affect on our electric generation in the Pacific Northwest. We firmly believe that breaching the dams and lowering the John Day pool will cost the the Bonneville Power a full 10 percent of its revenues; with the current demands on dollars in the power system, the cost just about guarantees a failure of Bonneville Power, which would have to be bailed out by Congress. In addition, it increases the chances of massive power outages, large increases in food prices, and economic repercussions in about every segment of Idaho business and economy.

We guarantee no amount of fishermen coming to drop a hook in Idaho waters will begin to offset the economic chaos that the breach of the four dams will bring to our state.

We in the Farm Bureau believe that removing the dams is the most costly proposal being advanced for the recovery of salmon. We feel eliminating barging and breaching the dams produces the lowest survival rate of the smolt that we have studied. The 66 percent smolt survival rate of the dam removal scheme does not take into account the effect of increases in adult travel times to travel the river.

We do not believe the speculation in the plan and are convinced that if it's implemented it will have a disastrous effect on irrigated agriculture, Idaho economy, electric generation, Bonneville Power, and will lead to the need of large treasury bailouts to sustain the plan.

We are convinced that this plan will cost over three-quarters of a billion dollars per year and guarantees nothing to the fish, to the States or to the Tribes. And if the plan includes lowering the John Day pool, it will surely lead to floods in both Portland and Vancouver.

With that, I would conclude my testimony, and I thank you very much for the opportunity to come and discuss it.

[The prepared statement of Dr. Nelson may be found at end of hearing.]

Mr. DOOLITTLE. Thank you. Let me ask the three of you, Mr. Stelle acknowledged the clear benefits to salmon that barging provides, and yet nevertheless indicated that in-river fish passage was superior in the long run.

So, in your opinion, do you think there's a bias in the scientific community that is going to drive their decision toward permanent drawdowns?

Mr. CHAPMAN. Mr. Chairman, I'll take the first crack at it and let Mr. Lovelin have at me afterwards.

I have to believe that the way the debate has been structured, for the most part in the past, that there is a press at least toward moving toward in-river conditions; toward a restoration of a natural river. That's the philosophy of many people in the scientific community.

I won't go so far as to say that many of them are anti-dam. But I do know some people within that community personally, and they have that philosophy.

There seems to be, to me, a bias in the biological community that we ought to get back as close as we can to the natural conditions to recover the natural fishery. That may be the case.

But it's our position, as I think much of the public in the Pacific Northwest, is that we're not, probably not willing to give up what it would require to go back a hundred years.

I think once the people understand what the benefits are, what they have to give up, the decision will be clear.

Mr. LOVELIN. Mr. Chairman, I agree with Mr. Chapman.

I would say that Mr. Stelle is in a real tough spot. The honeymoon's almost over for him. He's come out to the Northwest, and now Northwesterners, they want more salmon. And he's been unable to deliver.

And I think that we're going to start seeing, yes, something in front of him which is hard, hard science, suggesting that barging

does work, despite our improvements on the river system, barging does work, and it works actually quite well.

And so he's been walking this tightrope, this political tightrope of one-half, or part of the Northwest, the vocal part of the Northwest saying, let's leave the fish in the river, let's remove the dams, and the other half saying, let's try to manage within the system we have, and if it works, let's enhance upon that.

And so ultimately the National Marine Fisheries Service is going to be called upon to deliver. And I think to some extent, that's why Mr. Stelle revised the state of Idaho's attempts to leave more fish in the river in this particular year, and put more in barges.

Mr. NELSON. Mr. Chairman, I agree. I think that the science that they are basing this on is in a continuous state of flux.

I really think they are finding that barging is pretty effective. But when the smolt actually reach the Columbia—the ocean estuary—what the food source is there at that time is more of a determining factor on whether they are going to survive or not.

And so if they were to use the barging and fine tune the science a little bit more as to when they should arrive and when they should barge and get the time sequence down, I think they would find that's very effective. And this bias for just knocking out dams would go away.

Mr. DOOLITTLE. I'd like to ask you other questions, but I think I'm going to recognize Mrs. Chenoweth.

Mrs. CHENOWETH. Thank you, Mr. Chairman.

Mr. Lovelin, I wanted to start out with you. Mr. Batt in his testimony claims that the Port of Lewiston is heavily subsidized. Do you agree that the Port of Lewiston is heavily subsidized?

Mr. LOVELIN. No, I do not.

Mrs. CHENOWETH. Would you care to elaborate on that?

Mr. LOVELIN. Yes. The Port of Lewiston is actually very much of a growing economic industry in itself. We had a tour of the facility yesterday. And the growth that they're having in both the container business and the grain export business has been just very astounding. From the recent Tri-Port Economic Impact Study that was just completed, suggests that businesses would lose about $35.6 million if we remove the transportation activities. There's also another $81 million of impact related to those tri-ports that would also be impacted by a river navigation drawdown.

But relative to subsidies, though, no, it's not our belief that there are the subsidies that some of the dam removal advocates have been suggesting.

Mrs. CHENOWETH. Do you think that the economic interests give a fair consideration in the current salmon decisionmaking process as it now stands?

Mr. LOVELIN. No, ma'am. We're not. Simply we're kind of a third class citizen, I would call it that.

I think you heard Mr. Stelle talk about the sovereigns. Well, we're not part of the sovereigns. That's the states, the Federal agencies and the tribal interests.

The second class citizen has basically been the environmental interest. They have been allowed to go to court and to ask for judicial review of Endangered Species Act issues. Not until, what, a month

or so ago with Bennett v. Spear, the Supreme Court decision, now we have that same ability.

Unfortunately, we're just called upon to pay the price. And it is very, very frustrating for us because we know that it's our economic livelihood is on the line, and it's important for us to get these salmon recovered at the least cost possible.

Mrs. CHENOWETH. Could you explain for me on the record how and when the Federal agencies become sovereign?

Mr. LOVELIN. Self-decree, ma'am.

Mrs. CHENOWETH. I wanted to ask Sherl Chapman, you state in your testimony that flow augmentation may continue under the permanent drawdown option and gives us a good idea of the impact on Southern Idaho. Does there also continue to be impacts on the operation of the Dworshak within that framework?

Mr. CHAPMAN. Yes. I would anticipate that under any drawdown scenario, that the water that is required, whether really required or not, will come from the Southern Idaho reservoirs, the upper Snake River system, above Brownlee Dam.

However, I don't see any willingness or assertions or even any suggestions by the Federal agencies that the pressure on Dworshak will be lessened or discontinued at all.

Mrs. CHENOWETH. I don't like to hear that.

For Mr. Nelson, do you think that salmon harvest levels need to be regulated more closely? Salmon harvest levels maybe out in the ocean?

Dr. NELSON. Absolutely. I think, from all that I can read, and certainly I'm not a fisheries expert, but the temperature of the ocean and the catch in the ocean has a vital impact on what returns to Idaho.

If it was only our river, we wouldn't be the only—we'd be the only place in the upper—well, on the West Coast that would be experiencing this factor of diminishing returns. But most of the rivers have experienced this. And many of them don't even have dams. So I think that the harvest and the conditions in the ocean are extremely critical to their survival.

Mrs. CHENOWETH. And finally, Mr. Nelson, in the closing paragraphs of your testimony, your written testimony, you made reference to the Bevan plan. Is this plan being seriously considered by any of the Federal agencies at this time? And why? What is it about the Bevan plan that your organization prefers?

Dr. NELSON. Representative Chenoweth, we feel that any plan that we've looked at that is strictly like what is being advanced now, one-dimensional, cannot work, and is the most costly. The Bevan plan actually retains the multiple uses, doesn't call for destroying Idaho. As near as we can tell, you can recover the salmon and also retain some economy in the area. And of course that would be the kind of plan that we would recommend and endorse.

Mrs. CHENOWETH. Thank you, Mr. Chairman.

Mr. DOOLITTLE. Thank you. Mr. Crapo is recognized.

Mr. CRAPO. Thank you, Mr. Chairman.

Mr. Chapman, currently—I'm going to followup the line of questioning that I went through with the earlier panel with regard to flow augmentation.

Currently we basically see Dworshak providing about 1.2 million acre-feet, Brownlee about 240,000 acre-feet of water, and the upper Snake about 427,000 acre-feet. That's status quo. Could you give me your opinion as to what the relative impacts on that demand for flow augmentation will be under the competing approaching for the salmon recovery that we are looking at?

And I'm talking about the natural river option, or drawdown approach, versus the current system with improvements in transportation and improvements in fish passage.

Mr. CHAPMAN. Based on the history, we have seen various proposals and plans that have been suggested in the past that range from the status quo of about a million out of Dworshak and then 600,000-plus out of the upper Snake River Basin, to as much as 1.9 million acre-feet of water out of the upper Snake River Basin, in addition to anything that was taken out of Dworshak.

Mr. CRAPO. Which would be about four-and-a-half times as much water?

Mr. CHAPMAN. Yes, sir. And the impact is fairly arithmetic. It's a straight line impact for some distance up above the million acre-feet, and I don't recall where the break point is, but as I recall, at about a million and three-quarters acre-feet of water taken out of the Basin above Brownlee and Hells Canyon, then you essentially take all of the water. The eight million acre-feet of water that we have in the Snake River Basin.

And so you eliminate agriculture. You just destroy it.

Mr. CRAPO. And under which approach?

Mr. CHAPMAN. This would be the full flow augmentation approach with the existing reservoirs in place. That was the most draconian of the plans that we had seen in the past, and they dropped down to somewhere in the neighborhood of the 427,000 acre-feet, which we've agreed to produce during the NMFS experiment that's going on until 1999.

Mr. CRAPO. And then what would happen if we went to a natural river flow?

Mr. CHAPMAN. We're not sure. As Mr. Stelle pointed out, generally he assumed that the request would lessen, or be less. To me, that means it may be something less than the one-and-a-half to 2 million acre-feet we are sending down now.

But the concern that I have is that we in Idaho, as you remember well, have recently gone through a 5-year drought. And in 1992 had NMFS demanded even a 427,000 acre-feet of water, we could not have provided it. All of our reservoirs were at rock bottom, and at that point in time we would have lost most of Idaho agriculture.

Mr. CRAPO. So it would be risky under that scenario.

Mr. CHAPMAN. It would be risky, even under the status quo.

Mr. CRAPO. Dr. Nelson, you picked up on the comment about good water that was made by Mr. Stelle. And to be honest, I am sorry that he had to leave, because I would like to talk to him about that, too.

But do you have any idea what that concept might mean? I noticed that you picked up on it. I am wondering what concerns it raised in your mind.

Mr. NELSON. I suspect, Congressman, that it's reservoir water that comes from the bottom that's colder than maybe natural flow water.

Mr. CRAPO. So you are talking a temperature issue, as opposed to the speed of the flow issue?

Mr. NELSON. I think so. And I think our water quality in Idaho is pretty good. And this makes good water.

Mr. CRAPO. If the two of us are correct, surmising that that is what he was referring to, let's just make that assumption, whether that is what he meant or not, with regard to that issue, what does that say about flow augmentation under the various approaches? Do you know? Do any of you know what that holds, what implications that holds for the amount of flow augmentation that would be required under the natural drawdown or a natural river system, as opposed to the current system with the operational transportation?

Mr. NELSON. We don't know. You know, if you take the natural flow in the spring, probably not much. But if we're going to talk about summer runs of Chinook, and try to get colder water and what have you, it may mean an awful lot of good water.

So, we're concerned. We don't know for sure what that means.

Mr. CRAPO. Just one last question. I notice my time is about up, and I would like to ask if any of you who want to respond quickly, and this question is, as you will recall, my comments to Mr. Stelle earlier about my concerns with regard to the process, there are already those pulling out of the process because they are unhappy with it, and there has been an expression on this panel of not being heard, or being a third class participant in the process.

Do you feel that the current process being operated basically by NMFS in this arena, is adequately bringing to the table all of the competing interests and letting them have a fair shot at having their interests represented, understood, and involved in the ultimate decisionmaking?

Mr. LOVELIN. No.

Mr. NELSON. No.

Mr. CRAPO. All right. Thank you very much.

Mr. DOOLITTLE. OK. We thank you, gentlemen, for your appearance today. We will have further questions. Please respond to them expeditiously. We will keep the record open for that point. And we will excuse you. Thank you very much for your testimony.

And we will call up our last, but not least, panel No. 3, why don't you gentlemen come up and remain standing. We will administer the oath here. As soon as you find out where you are sitting, if you would please raise your right hands.

[Witnesses sworn.]

Mr. DOOLITTLE. Let me welcome to the panel Dr. James Anderson, Columbia Basin Research, University of Washington; Mr. M. Steven Eldrige, General Manager of Umatilla Electric Cooperative; Mr. Charles Ray, Wild Salmon Director, Idaho Rivers United; and Mr. Mitch Sanchotena, Executive Coordinator, Idaho Steelhead and Salmon Unlimited.

Gentlemen, we're pleased to have you here, and I think you have heard the routine probably about the lights, and we will recognize Dr. Anderson for his testimony.

STATEMENT OF JAMES J. ANDERSON, COLUMBIA BASIN RESEARCH, UNIVERSITY OF WASHINGTON

Mr. ANDERSON. Thank you, Mr. Chairman. Mrs. Chenoweth, thank you, Mr. Crapo, thank you for inviting me to testify.

In my written testimony I have detailed information on information related to what we are finding in the PATH process, of which I am a member, on survival of fish down the river.

And some of the issues related to growth I've briefly addressed, and I've also briefly addressed some of the benefits we may gain by drawing down the reservoirs in terms of increased spawning area.

But what I want to do, though, right now is discuss very briefly some of the elements that I have in this one sheet that I gave you. And basically what we're trying to do in PATH is ask, if drawdown will give us something better than what we now have in the river system. And some of these answers, first order answers, are actually quite simple to obtain, and we have made some definite progress, as Mr. Stelle has indicated.

And I'd like to address these items, starting with item A. That we can make an estimate of what we will have with drawdown. And it's in terms of juvenile survival for spring Chinook. And it's about 66 percent.

We figure by comparison to other data, before we had the Snake River dams, there was about 90 percent survival through that part of the system. We know there's about 10 percent mortality in each dam. You put it all together. We would expect about 66 percent survival.

Now, the question then is, is this better than what we have right now or is it worse? Because that would be one of those clear definitive things that we could say about the system. We also believe from the pit tag studies, there's about 43, 40 percent survival, somewhere in that range, of fish going through the river.

We also know, that's the example B which I show, example C is we have an estimate of what we get with transportation in terms of the survival of collecting fish, putting them in barges and dropping them below Bonneville Dam. We know there's almost a hundred percent survival in the process of transportation itself. And so the survival down below Bonneville is about 70 percent.

If that was the issue, we would find—if that was the complete story, we would find no real need to draw down the reservoirs in terms of juvenile survival.

The issue then is, is there some additional mortality going on after we release the fish from the barges. And we have been arguing that for a number of years. With particularly the 1995 returns that comport very well with the survival studies, or the transport survival studies that we have done since 1968, we get more fish back in the barges than we do in the river.

And it appears to the best of our knowledge that there is no additional delayed mortality in barging.

So we might expect to find very high survival in the process of picking fish up and putting them in barges and letting them go through the river system. The fish have continued to decline, though, in the last few years. So if it's not in the barges, is there some mortality someplace else that might be affected by reservoir

drawdown? And that's one of the things that we're starting to address in PATH.

On the back page I have some of the issues that we're concerned with right now. And as we know, both climate and the hydro system have affected the fish over the last hundred years. And this is a diagram I put together, maybe you've seen this before, showing the catch in the Columbia River from the beginning of the century up to the present. Also with the step function right there showing the increase in generating capacity, showing, as the dams have been brought on, the stocks have gone down.

Now, we also know from a lot of recent information that climate, particularly the wet and the dry cycles that have about a 20 year period to them, through those cycles, that they appear to have a great impact on the fish.

And we know that in the early 1920's there was very high catch in the system and it was a very wet period, and there seemed to be a balance in the stocks for maintaining themselves. And about 1920 the weather shifted to a dry condition, the stocks started declining, and that was really about the time that we started the decline toward the ESA listings.

But it's interesting to me that in the 1950's, when the system was being developed, hydro system, there was a very wet period, and I think that that mitigated the impacts of that development. Unfortunately, in 1977, the time that the Snake River dams were finished, the times we started transporting fish, the weather turned dry again and all those elements together made us think that there was a problem with the system.

We now begin to think that maybe the transportation possibly was not the problem, but actually it was something which has kept the stocks from going extinct over the last few years.

But the issue is not solved then by transportation. The real question that we need to address is what is the impact of the hydro system on the response of, particularly the Snake River fish, to the weather conditions. It's something that we will be addressing in the next few years.

I think my final point would be that we are carrying these analyses out through this PATH process, which is not entirely unlike the rebellious British Parliament, I think. We go at the issues in a very rigorous fashion.

And I think that we should be held accountable to review all of the hypotheses and keep everybody at the table until we come up with some very definite conclusions in terms of the probabilities and risk analysis that science can then offer to the decisionmakers.

I will conclude my testimony with that.

[The prepared statement of Mr. Anderson may be found at end of hearing.]

Mr. DOOLITTLE. Thank you.

Mr. Eldrige, you are recognized.

STATEMENT OF M. STEVEN ELDRIGE, GENERAL MANAGER, UMATILLA ELECTRIC COOPERATIVE

Mr. ELDRIGE. Thank you. I would ask that you accept my written testimony into the record.

Mr. DOOLITTLE. Certainly.

Mr. ELDRIGE. And many of the things that I was going to say have been touched on, so I will be as brief as I can.

I would like to start out by mentioning that I'm unique on any of from people that you invited on the panel. Because I manage a private, independent business that happens to be owned by the people who we provide electricity to.

Now, while people like me are beginning to feel a little threatened; it remains to be seen if we will actually be listed as endangered.

When Bob Smith's staff called and asked me to speak, he asked if we would talk about the power impacts on energy supply and that kind of thing. So that is what I would like to do.

I have been in the utility business for 25 years. I remember about 20 years ago when there was a huge distortion in the Northwest system, started by an outage in Montana, and before it was all over, most of the Bonneville Power system was out of power.

And if you will remember, there was a major outage last summer, due to a number of different factors, but I believe generally due to a lack of capacity. Just as the outage that started in Montana years before, there was not enough generation available during an outage period to maintain load.

I will guarantee you, and I will say it as strongly as I can, if we take 4,500 to 5,600 megawatts of capacity out of our generation pool, and unless we replace it, we will have huge reliability problems and stability problems. It's a guarantee. It's not a question. It's just how much and how bad.

And the cost to replace hydro capacity has been way underestimated. It's not if it's going to cost more, it's order of magnitude of how much more.

And the reason is this. The way the system operates right now is a hydro generator can be brought on line in a matter of minutes. A thermal plant takes hours to bring on line. So we have this enormous peaking capacity instantaneously to meet load.

It makes economic these combustion turbine plants. You have maybe heard the term firm and non-firm energy. There is a vast amount of a kind of non-firm energy available. And it's the mix of the hydro system and the excess capacity and all of those kind of things that makes for the low-cost power.

And everybody relies on the Federal hydropower system to make their energy more valuable.

PacifiCorp in the Northwest is the single largest customer that Bonneville has. And they buy non-firm energy. And then through financial instruments and knowing the market, they sell that just like it was firm energy, and they make money on it.

Now, if you replace this hydro generation with thermal plants, and have the same kind of reliability and capacity, you've got to have thermal plants running unloaded, spinning reserve, so that when something drops off unexpectedly, there is still generation there. That is going to raise costs.

And the other thing is, those plants, those new thermal plants, because of where all our transmission plant is, have to be along the Columbia River.

Now, just to give you an idea, Jack talked a little bit about the environmental consequences. Let me tell you how bad it really is.

Now, these numbers I have a lot of confidence in, I can recreate them for you if you need me to, but they are from Bonneville's Business Plan Environmental Impact Statement, and the methodology we used is suggested by the EPA, and what you do is you take the emissions of the thermal plants and you make a carbon equivalent, and this is how the numbers come out.

On an average energy basis these new plants will put out eight million metric tons of pollutants each year. If you replaced capacity, it's at a rate of 16 million metric tons of pollutants each year.

You're going to see that in the air. That's like three million new cars driving 11,000 miles and at 20 miles a gallon. That's a lot of pollutant.

Now, I'm not here to make a value judgment on the rightness or wrongness. But we must not underestimate the value from electric prices to the kind of reliability we like, and to the environmental cleanliness for air quality and other things, global warming, that we get from our hydro system. Costs will go up very significantly, I believe.

That concludes my remarks.

[The prepared statement of Mr. Eldrige may be found at end of hearing.]

Mr. DOOLITTLE. Thank you.

Mr. Ray, you are recognized.

STATEMENT OF CHARLES RAY, WILD SALMON DIRECTOR, IDAHO RIVERS UNITED

Mr. RAY. Thank you, Mr. Chairman, Representative Chenoweth, Representative Crapo.

I want to pick a couple items out of my written testimony that haven't been covered very much today, and I think they do need, in the investigation of this subcommittee, need to be covered thoroughly and repeatedly.

The first one is subsidy. At the same time the Federal hydropower system was being developed, massive subsidies were being put into place. They have been well-identified. They include power rate discounts to irrigation, to the aluminum industry, to the Bureau of Reclamation, and foregone power sales due to irrigation water withdrawals, and the subsidy that's enjoyed by the navigation industry.

These embedded subsidies have crippled the Bonneville Power Administration, they have placed an undeserved financial burden on the region's ratepayers and taxpayers, and they have shifted enormous debt on the backs of the fish and the economies that depend on healthy fish runs.

I'm really surprised today that this subcommittee doesn't appear to be interested in taking a hard look, taking as hard a look at these massive subsidies that support some of the very industries represented here today, as this subcommittee appears to be interested in looking at whether there are real or imagined impacts from destroying these fish.

I think if the facts were openly presented, there is a real question of whether the lower Snake dams are really worth the fleecing of the taxpayers and the ratepayers that's going hand in hand with the decline of salmon and steelhead.

This subsidy issue is inseparable from the fish issue and it is inseparable from any study of economics. Fairness and good public policy demands as hard a look at the subsidies as the options to restore the fish are receiving.

I really find it hard to believe that this Republican Congress, this subcommittee and the members of this subcommittee really want to perpetuate these massive public subsidies at the expense of ratepayers, taxpayers, good public policy, the fish, and the economies that depend on the fish.

The second item I want to cover is honesty and promises. That's another issue that can't be separated from this issue. When this current system that we're talking about, the Federal hydropower navigation irrigation system, came into being, it came hand in hand with a whole bunch of promises. Some of them started a lot longer ago than that.

In 1855 our government, represented by representatives and Congressmen today, made a promise to the Indian nations that those fish runs would be perpetuated. That promise was reaffirmed in U.S. v. Oregon, a landmark law decision in 1976.

Each one of those Federal dams was authorized with the implicit promise that the fish runs would remain. In 1973 the Endangered Species Act promised that these fish would be preserved. 1976 the Northwest Snake River—lower Snake River Compensation Plan promised Idaho fishermen that the salmon would be there for them to catch. In 1980 the Northwest Power Act promised restoration of the fish.

These promises haven't been kept. And I think this breech of trust is probably the biggest tragedy that has befallen this region and its citizens.

The decline of these fish and the dependent economies and cultures is clear evidence of the failure of our government to honor and keep these repeated and clear and unambiguous promises. The citizens of this state, the region, and the nation, expect those promises to be kept. We're not going to forget about them and they're not going to go away.

The public expects the return of the biological and cultural and economical benefits that could be enjoyed from restored salmon and steelhead runs. Restoration promised all the way back to 1855.

It's far past time to correct the mistakes of the past, the lower Snake and Columbia River dams, and begin keeping those promises.

I think it's very clear that the real challenge facing the Federal Government, the Federal agencies, the Congress, and this subcommittee is not to go out and hunt up all the reasons that we can't do what's necessary to keep the promises and restore the salmon and steelhead.

The real challenge and what the public is looking for you to do is to recognize that it's time to keep the promises and to find the courage to do what it takes to restore these fish.

Thank you.

[The prepared statement of Mr. Ray may be found at end of hearing.]

Mr. DOOLITTLE. Thank you. Mr. Sanchotena, you are recognized.

STATEMENT OF MITCH SANCHOTENA, EXECUTIVE COORDINATOR, IDAHO STEELHEAD AND SALMON UNLIMITED

Mr. SANCHOTENA. Thank you, Mr. Chairman, Representative Chenoweth and Representative Crapo. It's been a long day.

On behalf of Idaho Steelhead and Salmon Unlimited and our 2000 members, we want to thank you, Chairman Doolittle, for coming to Idaho, and I want to compliment you on some of the questions I've heard you ask earlier. And if I may deviate from my testimony for a moment, I don't feel that they have been properly addressed.

You asked a question, what is the Northwest Power Planning Council's plan? And Mike, you have said we ought to have regional control over this issue. The 1994 strategy for salmon from the four Governors of this region said something to the effect that, their recommendation is to decrease barging of anadromous juveniles and to leave significantly more than half of the fish in the river, drawdown of John Day by 1996, and a drawdown of the lower Snake by 1999.

So that's the regional plan that this region has adopted. It has not been changed. I don't know whether the votes will be there to change it. We'll all be in that confrontation once again.

You also asked another very good question, Mr. Chairman, and that was the question, as citizens, would we do what, one of the alternatives being on the table, is to breach the dams.

And that question was asked by Greg Smith & Associates, and by the way, an ex-Senator of Idaho, he did a poll, and that poll confirmed 49 percent of the Idaho residents, and the question was asked, would you take out the dams to save salmon? 49 percent of the respondents said yes. 47 percent were opposed. And 3 percent was undecided.

So I think it was a very good question, and I am sorry they didn't give you that answer.

Mike, you asked a really good question along the lines of Mr. Stelle, and it is unfortunate that he has not done his homework and looked into this, would drawdowns take more Idaho water.

In 1992 an Army Corps of Engineers document—at that time we were doing, we had just finished Senator Hatfield's salmon summit, and we were looking at a spillway crest drawdown—that Corps document identified that the spillway crest, that the biological travel times of migrating juveniles from the lower Snake River could be met 96 out of 100 years, simply with in-flow from the Salmon, in-flow from the Clearwater and normal power generation from Brownlee Reservoir.

So it appears to me that if we go to natural river, which is below the spillway crest, it would alleviate any need for upper Snake River water.

So I think those are awful good questions, and I appreciate you giving me the time to respond to them.

One other thing I would urge the Committee to look into, I believe Mr. Chapman said that the 427,000 acre-feet of Idaho water taken during drought years impacted Idaho farmers.

I would like to make it perfectly clear, look at the Bureau of Reclamation records, there was no irrigation water used, not one drop

of Idaho irrigation water was used in the 427, it was Showdam water, it was Pocatello city water, and non-contracted.

So it's unfortunate some of the things we have heard here along those lines. But I think it ties in well with what I have to say, in prepared testimony. And that is that Idaho sports fisherman were the first to fall victim to the completion of the four lower Snake River dams that were completed in 1975, and by 1978 Idaho's once productive general statewide Chinook salmon and fishing seasons had been closed and they have never reopened as a result of that.

This is not about salmon, but it is also about wild steelhead, as well. Keep in mind that wild steelhead have never recovered since their simultaneous decline with Chinook salmon only 3 years after Lower Granite was built. In spite of the sport fishing closures since 1982 wild steelhead hang precariously near extinction and will possibly be listed for protection by the Endangered Species Act later this year.

There are 25,000 steelhead fishermen in Idaho that contribute over $90 million annually to Idaho's economy, and if salmon were restored, that figure would go to in excess of $150 million. That economy is seriously being threatened by the current operation of these dams.

But Idaho fishermen are not the only victims of the dams. The list has been expanded and it has been expanded in your state, Chairman Doolittle. Fishermen from California to Alaska are now also victims. This year the Pacific Fisheries Management Council shut down salmon fishing off the coast of California to save a few Snake River fall Chinook. Idaho ranchers and water users are also, or soon will become, additional victims of these dams.

It has become explicitly clear that these dams continue to kill so many salmon and steelhead this every wild spawner surviving to adulthood and making it back to Idaho is so valuable to perpetuation of this species that land use actions must be shaped to protect every one of the few that return.

I have two recommendations for how this committee, in focusing on the lower Snake dams, can help restore Snake River steelhead and salmon, as required by law and treaty.

My first recommendation concerns juvenile fish barging. For nearly 20 years, the primary steelhead and salmon management action undertaken at these dams have been the collection and artificial transportation of that fish in trucks and barges.

For nearly 20 years this action has been a failure. Finally, now one scientific finding after another, along with some of the region's most noted scientists, are finally admitting what Idaho fishermen have known over a decade, Idaho's anadromous fish returns as adults in far greater numbers when as smolts they are able to ride a good spring freshet downstream to the ocean.

No one is interested in preserving wild steelhead and salmon as museum pieces. Therefore, the Independent Scientific Advisory Board's peer review document, Return to the River, which states that a "normative river system" is needed to restore the runs must be the starting point for all discussions.

Those of you who have read the document will recall that the recent authoritative ISAB report called for the use of barging only experimentally and instead to focus on in-river migration.

Idaho Department of Fish and Game has very good documentation of this fact, and I would urge Idaho's Congressional leaders to rely more on the expertise of our own state's biologists for what is best for our anadromous fish resource.

Also I believe it is important to note that Governor Batt, Senator Kempthorne, and Representative Crapo have now all joined ISSU in calling or the feds. to wean themselves away from barging.

The administration currently plans to wait until 1999 to decide whether to focus our limited salmon and steelhead funds on returning fish to the river, or trying instead to improve fish barging. This delay will simply waste millions of dollars.

The scientific verdict is in, and the Idaho verdict is in from Governor Batt.

I urge this committee to recommend an immediate decision in favor of the in-river path and I urge you, Representative Chenoweth, to join Governor Batt, Senator Kempthorne and Representative Crapo in calling for an end to steelhead barging so we can get on with restoring these fish.

Our second recommendation concerns the future of lower Snake dams themselves. What Idaho fishermen already knew is reaffirmed by Dr. Don Chapman. Before a Senate Subcommittee hearing chaired by Idaho Senator Kempthorne in Washington D.C., Dr. Chapman stated we will not go back to the way it once was. Even if we want to go back to the harvest of the 1950's, only 45 years ago, there is only one way to do that, take out four Snake River dams and probably John Day, as well.

Those of you who know Dr. Chapman know that he is recognized by many as one of the region's leading anadromous fish experts and in the past he has primarily represented Columbia River hydropower benefactors. Mr. Chapman's honesty in making this statement must be admired and respected. It also must be taken seriously.

Dr. Chapman's statement along with the Independent Scientific Implementation Team's peer review document stating that a "Normative River System" is needed to restore the runs must be the starting point for many questions and subsequent decisions; i.e., to what point does society want to restore the runs and how much are they willing to pay. What are the societal, economic, and cultural values of restored runs? What are the assets and liabilities of the Four lower Snake River Dams and a drawdown of John Day?

All these questions, plus several others must be asked, and their findings reviewed.

Mr. DOOLITTLE. Let me just ask you, we're over time.

Mr. SANCHOTENA. Right. ISSU therefore requests that this committee request both the General Accounting Office and the Office of Management and Budget to conduct a thorough and unbiased audit of the assets and liabilities of the four lower Snake River dams and a spillway crest drawdown of John Day. We also request that until the results of that audit are made public, all further spending on these four dams which locks in the current failed management be suspended.

Right now the Army Corps of Engineers plans to spend literally hundreds of millions of dollars in the next 5 years to gold plate these dams and lock in the current failed fish barging program.

This committee can perform a real service to the taxpayers by urging that this spending cease until we decide as a region what the future of these dams should be.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Sanchotena may be found at end of hearing.]

Mr. DOOLITTLE. Thank you.

Well, Dr. Anderson, from your testimony, I gather, looking at these charts, particularly Exhibit 2, do you conclude, then, that clearly the presence of the dams on the river has resulted in a substantial decrease in the fisheries?

Mr. ANDERSON. I think it has been a mixed bag. I think the dams have been detrimental to the fish in different periods of time.

In all the work that we've done, that I've done, that NMFS has done, and the recent information suggests that we're doing better now with juvenile passage than any time in the past.

Mr. DOOLITTLE. So, what I find puzzling is, the graph you show us here clearly indicates that the juvenile transportation is working, and the survival is higher with it than without it. And yet there is intense opposition to it.

Our last witness here indicated apparently the Governor of Idaho and the other Governors of this Northwest Council signed onto a report that calls for these drawdowns.

Is that your understanding?

Mr. ANDERSON. I'm not fully aware of all of the political agendas.

I do know that Galileo had a similar problem, when he was saying that the earth revolved around the sun instead of the other way. And I think that eventually science, given a chance, will find its way to proper conclusions.

Mr. DOOLITTLE. Is science, in your opinion, being given a chance, or is it being replaced by pseudo science?

Mr. ANDERSON. My feeling is that within the process of PATH and some of the formal analyses, which are very vigorous, that we will get to some of these conclusions. What I worry about is when scientists present hypotheses and then they are taken as proven facts. And I think the scientific process should be allowed to consider all of the hypotheses and then come to conclusions on it.

Mr. DOOLITTLE. And that is a traditional process, but indeed there are some within the scientific community who feel the issues cry out for resolution, that it's time to move away from judicial science and on to projecting hypotheses.

Mr. ANDERSON. All we can do is state the numbers, look at the correlations and look at the ecological basis of things, and that's all we can do as scientists.

Mr. DOOLITTLE. I don't think you really got into it today, but I believe I've heard you testify before where you describe what appears to be an inverse relationship between the Alaskan salmon populations and those off the Pacific Northwest.

Is that right?

Mr. ANDERSON. That was 2 years ago, and there's been a considerable amount of extra, additional information that's been documented since then, some good reports out.

Mr. DOOLITTLE. And further validating——

Mr. ANDERSON. Further validating this inverse relationship. Ecological theories are being developed and I think will be available

at the end of this year to begin to test the mechanisms producing these decadal shifts in stocks.

Mr. DOOLITTLE. I wish our NMFS man was here, but he had to leave.

What does he say when you present him with your studies on these things, particularly about the inverse relationship? How do they deal with that?

Mr. ANDERSON. Well, the inverse relationship, which I presented a couple of years ago, was given to me by one of his employees. And so I just presented things that they have been understanding, and NMFS I believe, from my discussions with Mr. Stelle today, are moving forward to try to identify some of these hypotheses, and what types of research we need to do to further articulate where things are happening, where the mortality is occurring, and if there's anything that we can do about them.

Mr. DOOLITTLE. Well, you have developed some other things here. But if that hypothesis were indeed correct, as what data you have would seem to indicate, even if you did tear down all of the dams, there wouldn't necessarily be a restoration of the traditional salmon run.

Is that correct?

Mr. ANDERSON. The weather is always going to be a factor. And there's a difference between tearing out the entire Columbia River hydro system and tearing out part of the dams.

Mr. DOOLITTLE. Namely, the four they are talking about here.

Mr. ANDERSON. And the simple, straight forward analysis that we have done so far, is that we are not going to gain the benefits we now have just by taking out the upper Snake dams, or the Snake dams. That is the initial conclusion. We will consider this in greater detail, and hopefully we will have the information to you in time to make decisions.

Mr. DOOLITTLE. And that's the lower Snake dams you are talking about?

Mr. ANDERSON. The lower Snake dams.

Mr. DOOLITTLE. OK. I would like to ask some more questions, but it is Mrs. Chenoweth's turn.

Mrs. CHENOWETH. That's all right.

Mr. DOOLITTLE. Well, do we have time for that? Why don't you go ahead.

Mrs. CHENOWETH. I yield to you.

Mr. DOOLITTLE. Well, all right.

Gentlemen, how do you react to his graphs and then the testimony he had about the correlation between the wet—low population salmon runs with the warm and dry years and higher population runs with cool and wet years?

Mr. SANCHOTENA. Well, first I think we need to recognize that these weather patterns have been cycling for a millennium. They have come and gone. We have had wet and dry periods, and yet we have never had anadromous fish in the Snake River on the brink of extinction until four dams were completed in the lower Snake.

Second, I would like to point out, we have heard a lot today from Mr. Stelle and Mr. Anderson and others about in-river.

But keep in mind, in-river is not normative river. In-river today is likened almost to pouring these fish down, pardon a pun, down a toilet bowl.

We have an overworked river that the Federal Government by its own admission is admitting is lethal to juvenile fish. We have to take them out of the river to give them any chance of survival.

So if we go to where the Independent Scientific Survival Board is, we are making a fish friendly river, and that in-river migration that we are talking about at that point changes drastically from a river by the Federal Government's own admission, the Army Corps of Engineers, says we must take these fish out.

Second, the pit tag information I think is very immature, in fact this year's run is likened to the 1993 returns of adult salmon. That return was 30 percent wild fish component in the run. This year it was only 16 percent wild fish in the run, they listed species.

So in essence we will not even replace our 1993 population, and we go further toward extinction.

So I wouldn't buy into a lot right now on this pit tagging stuff. The PATH process, we have a lot of confidence in. We will track it and we would urge the Committee to track it. And let's see where this takes us as we get further down the road. But there's some real bogeymen hiding around here that I don't think we should right now base any information on what we've got and take it to the bank, that it would be a good investment.

Mr. DOOLITTLE. Mr. Eldrige, did you want to comment?

Mr. ELDRIGE. Well, what I guess I would say is I think we need to decide, are we really going to do this, no matter what the science says. Are we really going to tear apart the system?

If we are really going to do that, well, then let's start down that path.

If we're really not going to do it, the studies, the pit tags, all of this other stuff, spending millions and millions of dollars on that, you know, everybody knows it's going to cost a lot of money, everybody knows it's a question mark, but if we're really not going to go to natural river, I think we need to say so and get on with some other things so that we can make it as best as we can.

If we are really going to do it, then, fine.

But I begin to feel a little like, you know, if you're going to be bled out, it doesn't really matter if it's a vein or an artery, but let's get going on it.

Mr. SANCHOTENA. Mr. Chairman, I would like to add to that, I think Mr. Eldrige has a very good point. I think this really is a societal, economic issue. I hate to see us continue to argument about science. I really believe the science for the most part is in or nearly in.

Mr. DOOLITTLE. Is what? I'm sorry.

Mr. ANDERSON. Is in or nearly in. So many scientific reports.

Mr. DOOLITTLE. It is such a fundamental thing—is barging good or not? You are in disagreement here.

I mean, his graph shows that it works, and yet you are saying apparently no one has corroborated your statement, but they haven't disputed it either, that the Governors of this region have all signed off on eliminating barging.

Mr. RAY. If you would, Mr. Chairman, we have been barging fish for over 20 years, and NMFS, National Marine Fisheries Service, and the Corps of Engineers, up until about 4 years ago, caught every single fish they could catch, and put them in the barges.

Now, in that 20 year period of time that we have been barging nearly every single fish we could catch, the Idaho salmon season is closed, statewide season never to reopen, Idaho coho salmon were declared extinct in 1987, we had one Sockeye salmon come back last year, and in 1994 and 1995 we had consecutive record low returns of spring and summer Chinook, steelhead are now petitioned for ESA listing, returns, regardless of what returns of the barged fish to the dams do, returns of wild fish to the spawning ground, the true measure of the efficacy of barging, have consistently been low.

And for anybody to say that in the face of that indisputable evidence that barging works, I don't understand it.

Mr. DOOLITTLE. And I'm going to wrap up with this observation, that Dr. Anderson's testimony about the dry, warm years would account, as well, for a lot of that decline.

With that, let me recognize Mrs. Chenoweth, if you have further questions. Yes, you do. You are recognized.

Mrs. CHENOWETH. Mr. Chairman, I noticed, and I called attention to Mr. Stelle's testimony, that preliminary returns through 1995, which should be viewed with great caution at this time, said, showed transported fish returning at nearly twice the rate of in-river fish.

And so I join the Chairman in showing a certain amount of concern, because transported fish are returning at twice the rate, Mr. Stelle said.

So I just was hoping that we could have a consistent path here.

Mr. Sanchotena, you referred to Greg Smith's survey.

Mr. SANCHOTENA. Excuse me. Was I supposed to respond to that comment? I do have a response to that.

Mrs. CHENOWETH. Well, go ahead, please.

Mr. SANCHOTENA. As you said——

Mrs. CHENOWETH. Make it real short. I didn't anticipate that.

Mr. RAY. There is no data on the return of 1990 fish, there is zero data, not a single data in at this time on return of 1995 out migrants, wild fish to the spawning grounds, not a single data figure.

Mrs. CHENOWETH. Wild fish.

Mr. RAY. Wild fish. The ESA listed fish, the fish that are driving this entire process, not hatchery fish, not steelhead, ESA listed wild fish.

Mrs. CHENOWETH. Mr. Ray, I think the way the salmon was listed was by gene pool makeup, not whether they were wild or hatchery fish. And I think you know that, and I know you know that.

Mr. RAY. I don't know that.

Mrs. CHENOWETH. Now, Mr. Sanchotena, with regards to the Greg Smith survey, I think that survey question that you indicated read, would you be in favor of removing the dams to save the salmon?

Mr. SANCHOTENA. I believe that's the way it was referenced in the media.

Mrs. CHENOWETH. All right. I think that Mr. Smith's survey read, would you be in favor of removing a dam to save the salmon.

Mr. SANCHOTENA. I believe it was one or more, was the way it was worded.

Mrs. CHENOWETH. All right. Would you do me a favor, and would you please present us, send as an addendum to this hearing the actual questions? I would appreciate that very much.

And with that, due to the shortness of time, I want to thank all of the panel members here for their testimony, very, very valuable.

And, Mr. Eldrige, I would like to speak to you in person, or maybe you can supplement the record, with a comparison, not only to gas fired turbine alternatives, but also to nuclear power, because I think we are seriously looking at that.

Thank you.

Mr. DOOLITTLE. Mr. Crapo is recognized.

Mr. CRAPO. Thank you, Mr. Chairman, and I realize that we are almost an hour over, if I see the time right, and I know there is meetings we are supposed to be at, and I will just ask one question quick and I will forego my other questions.

But each of the members of the panel, and probably to Mr. Eldrige, Mr. Ray and Mr. Sanchotena, because you represent groups in the region, rather than a research perspective, my concern about the process, I'd like to just very quickly have you respond to, do you believe that the current process in which we are currently operating allows you to effectively present your information and you feel that you are part of the table, that your concerns are being taken into consideration, and that you have an opportunity to influence the outcome of the decisionmaking in a way that is satisfactory to you?

Mr. SANCHOTENA. No.

Mr. RAY. No.

Mr. ELDRIGE. No. And it is not collaborative either.

Mr. CRAPO. OK. I just wanted to be sure I let everybody who testified have a chance to get in n that. I won't ask any more questions, Mr. Chairman.

Mr. DOOLITTLE. Thank you. I would like to thank of the witnesses for your testimony. And we would like to keep the record open. We may have some additional questions that we would like to submit to you.

Mr. Ray, I'll just observe that I'm not, and this subcommittee really isn't big on subsidies. We had three major GAO reports about PMAs and cost of recovery, talking about how we get there.

So I would just share with you, that I'm fairly anti-subsidy.

Mr. RAY. Well, I appreciate that. And I think that the subsidy issue definitely demands, just as hard a look and just as intense of scrutiny as any other item within this issue that has received today.

Mr. DOOLITTLE. Thank you.

Mr. RAY. I hope you can stay on track.

Mr. DOOLITTLE. We certainly intend to do so.

With that, we will—oh. Mr. Eldrige.

Mr. ELDRIGE. Just real quickly, do you know what the unsubsidized cost of a fishing license is?

Mr. DOOLITTLE. OK. Thank you. We will excuse this panel, and the hearing is adjourned.

[Whereupon, at 6:30 p.m., the subcommittee was adjourned.]

[Additional material submitted for the record follows.]

STATEMENT OF ARTHUR M. TAYLOR, CHAIRMAN, FISH, WATER, AND WILDLIFE SUBCOMMITTEE, NEZ PERCE TRIBAL EXECUTIVE COMMITTEE

My name is Arthur M. Taylor, I am a member of the Nez Perce Tribe. Also, I am a member of the Nez Perce Tribal Executive Committee and the Chairman of the Fish, Water, and Wildlife Subcommittee. It is with the utmost respect and honor that I am allowed to submit written testimony on behalf of my people. From time immemorial, the Nez Perce People have utilized the fish, water, animals, and medicinal plants which have been produced by the Columbia River. All living creatures which have been created by the Creator are considered sacred to the Nez Perce People. It is simply for this reason during the springtime, we honor these gifts which have been bestowed upon the Nez Perce. We honor the return of the first salmon back to the river, as well as, honoring the first roots and berries in special ceremonies. The Nez Perce People are proud of their heritage in the Pacific Northwest and in particular our heritage along the Columbia River.

With the importance the Native Americans have played in helping restore the salmon population back to the Columbia River, the four Columbia River Tribes should have been invited to participate and give testimony to the Water and Power Subcommittee. The four (the Nez Perce Tribe, the Confederated Tribes of the Umatilla Indian Reservation, the Yakama Indian Nation, and the Confederated Tribes of the Warm Springs) Columbia River tribes have treaty reserved rights on the Columbia River and should be consulted when making decisions regarding our reserved rights. Government to Government consultation is necessary when making decisions concerning sovereign governments.

For the past several years, many federal agencies have completed several studies on the Columbia River. This would include the barging of salmon through the dams, using "flip" gates as a means of allowing fish to pass through the dam efficiently, in effect less mortality, and have set up programs to limit the predation upon the juvenile salmon while passing through the pool of each dam. These programs have blatantly failed and we are no closer to restoring the salmon back into the Columbia River Basin than we were several years ago; this has led to more species being listed as an Endangered Species or have the potential of being listed in the very near future. There are many factors which must be considered when restoring salmon back to the Columbia River Basin: the water temperature of the John Day Pool, the dissolved gas issues, the quality of the water, and above all else, the quantity or flow of the water. The flow of the water is extremely important for the migration of juvenile salmon on their way to ocean. Anadromous fish utilize the flow of the water in order to determine the direction of the ocean, however, man has taken away the flow of water, whereby the migrating juvenile salmon are left to predation.

In order to restore the salmon back to the Columbia River Basin, we need to restore the natural river flow back to the Columbia River, which in essence would lower the temperature of the John Day Pool making the habitat more sustainable for the salmon. This issue should not be an issue solely for the "irrigators" who utilize the water for their personal benefit, but for the entire northwest. Restoring salmon back to the Columbia River Basin would help to restore the economy and make the Pacific Northwest once again known for it's natural resources again. The Nez Perce Tribe deserves to be recognized as a sovereign government because we have inherent rights which are protected by Treaty, therefore, we should not be considered the "general public" such as all of these water user coalitions.

HOUSE RESOURCES COMMITTEE
WATER AND POWER SUBCOMMITTEE
FIELD HEARING
on
Lower Columbia/Snake River Drawdown Options

May 31, 1997—Lewiston, Idaho

Testimony of
BG Robert Griffin, Commander
Northwestern Division
US Army Corps of Engineers

Mr. Chairman, Committee members, and distinguished guests, I am Robert Griffin, Commander of the recently formed Northwestern Division. I am pleased to be here today representing the Assistant Secretary of the Army for Civil Works, Honorable H. Martin Lancaster, to discuss the Army Corps of Engineers activities related to the Columbia/Snake River drawdown proposals.

The Northwestern Division was formed from the North Pacific Division and the Missouri River Division, with headquarters located in Portland, Oregon and Omaha, Nebraska. The Division has five district offices in Seattle, Washington; Walla Walla, Washington; Portland, Oregon; Omaha, Nebraska; and Kansas City, Missouri.

My testimony will address lower Columbia/Snake River reservoir drawdown proposals and the potential effects of drawdown options. Specifically, I will discuss the following:

-- Corps facilities in the lower Columbia/lower Snake River system;
-- Drawdown options considered to enhance fish passage and survival;
-- Impacts of the natural river drawdown on Corps lower Snake River facilities;
-- Impacts of natural river drawdown on lower Snake River water and power users;
-- Coordination with the National Marine Fisheries Service (NMFS) and others on the proposals; and
-- Ongoing and future analyses of options and issues, specifically
- Lower Snake River Juvenile Salmon Migration Feasibility Study, and
- John Day Drawdown Advance Planning and Analysis: Status Update.

Corps Facilities in the Lower Columbia/Lower Snake River System

The Corps of Engineers has eight (8) major dams and reservoirs, with related structures, on the lower Columbia and lower Snake River system. They are Bonneville Dam, The Dalles Dam, John Day Dam, and McNary Dam on the lower Columbia River, and Ice Harbor Dam,

Lower Monumental Dam, Little Goose Dam and Lower Granite Dam on the lower Snake River. I have included a map showing the location of these facilities. These dams, associated reservoirs and related facilities are operated and maintained to provide hydropower, navigation, limited flood control, water supply, recreation and fish and wildlife benefits.

The Corps, in cooperation with other Federal and regional interests and the public, is currently carrying out a detailed study of long term system configuration alternatives including natural river level drawdown at the four Lower Snake River dams under the Lower Snake River Juvenile Salmon Migration Feasibility Study. This detailed engineering, biological, social and economic analysis is scheduled to be completed in 1999 as called for in the National Marine Fisheries Service (NMFS) March 1995 biological opinion on hydropower operations. The study is intended to provide the basis for regional and national decisions on whether drawdowns or some other alternative should be implemented on the lower Snake River. An Environmental Impact Statement (EIS) will be prepared with the feasibility study under the National Environmental Policy Act (NEPA).

Drawdown Options Considered to Enhance Fish Passage and Survival

Several reservoir drawdown options to enhance fish passage and survival on the lower Snake River were carried from the reconnaissance phase of study into the Feasibility Study. The options were mid-level drawdowns (including spillway crest level), annual natural river drawdown and permanent natural river drawdown. In December 1996, the Corps published an interim status report on the Feasibility Study, which provided the foundation for continuing evaluation of permanent natural river drawdown only, along with other non-drawdown alternatives: surface bypass collection systems for juvenile fish and improvements to the existing juvenile passage routes at the dams. It was determined that further study of mid-level drawdowns was not warranted since extensive fish passage system and other dam modifications would be needed (at a cost of over $1 billion and ten years time), and evaluations indicate that salmon survival would not be as high as under current conditions. Further study of seasonal natural river drawdown was dropped due to the high cost ($3.6 billion and 15 years) and considerable detrimental environmental and cultural resource impacts that would occur with each annual drawdown and refill of the reservoirs, with no chance for a stable habitat to establish.

Impacts of the Natural River Drawdown on Corps Lower Snake River Facilities

In general, implementation actions for permanent natural river level drawdowns would entail the total removal of the earthen embankment section which exists at each lower Snake River project along with some additional channel development and expansion. Under this alternative, the existing powerhouses, spillways and navigation locks would be decommissioned but remain in place and would require some type of protection. Essentially, these four dams would be mothballed. Implementation cost for modifications at the four dams is estimated at $530 million on a preliminary basis. That cost is for construction activities only and does not

reflect mitigation measures along the reservoirs, long-term maintenance costs, or other economic and social costs.

On the other hand, future costs for capital investments and operation and maintenance of the dams would be avoided with the permanent natural river level drawdown. These would include future powerhouse rehabilitation costs (which could be hundreds of millions of dollars over the life of the projects) and the annual operation and maintenance costs (around $30 million per year) for the existing dams. Future fish passage investments at these dams would presumably be avoided with drawdown as well.

I believe that it is too early to use these cost estimates to project economic impacts.

Impacts of Natural River Drawdown on Lower Snake River Water and Power Users

The implementation of permanent natural river level drawdown on the lower Snake River would radically change the current multi-purpose uses of the lower Snake River dams and reservoirs. Those changes would have both beneficial and adverse impacts. While the changes have been addressed in previous reports such as the System Configuration Study Phase I, the Columbia River System Operation Review (SOR) completed in 1995, and most recently in the Corps Lower Snake River Juvenile Salmon Migration Feasibility Study Interim Report published in December 1996, both beneficial and adverse economic impacts need to be fully identified. A summary of potential impacts follows:

Fish Passage - Qualitative and quantitative information relative to anadromous fish benefits associated with a natural river operation is very limited. The issue of the effects of juvenile fish transportation versus in-river migration is at the very root of the regional debate. With this in mind, it is fair to say that a natural river condition would provide better in-river conditions than currently exist for both juvenile and adult salmon migration. Juvenile travel times would be significantly reduced and current dam passage mortality would likely be eliminated. Predator/prey relationships are not well understood, but a reduction in predation may be possible. Not considered in these assumptions are the fish impacts that may occur associated with drawdown construction activities and near-term environmental disruptions following construction, such as high turbidity levels. What cannot be determined with high confidence at this point is the expected increased survival for both juveniles and adults out of the Snake River, and what contribution this would make to the overall salmon recovery effort. Analysis in the feasibility study should provide additional information but not a definitive answer.

Irrigation - A 1991 inventory identified a total of 31 water withdrawal facilities on the four lower Snake River Projects. All of these facilities would be rendered unusable without significant modifications.

Navigation - All commercial navigation on the lower Snake River from its confluence with the Columbia River, to Lewiston, Idaho would be eliminated.

Power Operations - Power production from the four lower Snake River Projects would be eliminated. The four Lower Snake River projects produce approximately 10 million megawatt hours of electricity on an average annual basis. BPA testimony explores the revenue impacts.

Flood Control - The four lower Snake River projects currently provide no flood control benefits, thus the implementation of natural river drawdown would have no adverse affect from a flood control standpoint.

Recreation - The net impacts on recreation are not clearly understood at this point. Obviously the type of recreation experience that the projects currently provide and the existing facilities on these projects would be significantly changed or eliminated. However, these perceived lost opportunities would likely be replaced by a different type of recreation experience. The overall impact these changes would have on total project visitation is unknown at this time and is a part of the feasibility analysis.

Other Impacts - Other potential impacts that have been recognized, but not clearly understood, include effects on resident fish, water quality (including sedimentation), and cultural resources exposure. Analysis on these is under way.

As part of the ongoing feasibility study, the Corps is engaged in a very intensive regional effort to accurately identify the economic impacts of the drawdown alternative, both beneficial and adverse. A draft Economic Analysis Project Study Plan for the Snake River Juvenile Salmon Migration Feasibility Study was developed by a newly formed Drawdown Regional Economic Workgroup which consists of several Federal agency, state, and tribal economists. The study plan is now under review by the Northwest Power Planning Council's Independent Economic Advisory Board. The hydropower analysis under this plan will be conducted jointly by the Corps and Bonneville Power Administration (BPA), along with a sub-group of interested members of the economic workgroup.

Coordination with the National Marine Fisheries Service and Others

The Corps is fully engaged with numerous regional entities, both public and private, on prioritizing and carrying out measures to improve salmon migration conditions at the lower Columbia and Snake River dams. Our primary coordination occurs both directly with NMFS and through the NMFS salmon recovery regional forum. The Corps Walla Walla and Portland Districts conduct monthly Fish Facility Design Review Work Groups where agencies and tribes are provided detailed technical information and are provided an opportunity to influence final design decisions. The Corps actively participates on the System Configuration Team which essentially identifies the priority items and levels of funding to those items on a fiscal year basis

and also attempts to resolve any technical issues. We also have representatives who participate on the Implementation Team--a policy-level group--and the Executive Committee. We also closely coordinate our activities with the Northwest Power Planning Council.

Recognizing the critical importance of painting a clear and accurate economic picture associated with drawdown, the Corps, in cooperation with NMFS and the Northwest Power Planning Council, have formed a Drawdown Regional Economic Workgroup as mentioned above. Participation in that workgroup has been opened to the states, other Federal agencies, the Tribes, and environmental groups and industry. The group is working to identify the scope of the socio-economic evaluations and the methodologies to be used. Evaluation of effects on anadromous fish will be worked through another of the teams under the NMFS regional forum, called the Plan for Analyzing and Testing Hypotheses, or PATH, work group.

Regarding direct agency coordination, we have requested NMFS, as well as other Federal agencies, to become cooperating agencies in preparation of the EIS. As a cooperating agency, NMFS would bring it's agency expertise in fish recovery into the NEPA process. Also, in accordance with the Endangered Species Act, NMFS will be requested to produce a biological opinion on the recommended plan prior to finalizing the feasibility study in 1999.

The Corps approach to this study has been one of collaboration with the region. Continued close coordination with NMFS, and a high level of regional participation will be critical to successful completion and acceptance of a final recommendation.

Ongoing and Future Analyses of Options and Issues

Lower Snake River Juvenile Salmon Migration Feasibility Study - The objective of the ongoing Feasibility Study/NEPA process for the Lower Snake River study process is to document the Federal decision for the long term operation and configuration of the lower Snake River projects. Integral to any NEPA process is a requirement to provide the general public an opportunity to understand the issues, alternatives, and environmental impacts, and to have a role in the formulation of a final decision. The Corps fully intends to honor that requirement throughout the study process. In conjunction with this study effort we will be conducting workshops and hearings throughout the region. We will also be providing periodic newsletters and special reports which will be made available to the public.

Recognizing the critical importance of this issue to the region, the Corps has expanded its efforts and is conducting periodic feasibility study round table/workshops. The purpose of these workshops will be to provide technical information and status reports as well as to seek public input on a more frequent basis than would be available in a more traditional study process. These workshops are intended to be very informal in nature and will be conducted primarily as a discussion group. The meetings will be open to the general public as well as Federal agencies, state agencies, Indian tribes and public interest groups.

Beyond the efforts described above, we will continue to participate in the regional forum addressing salmon recovery established by NMFS. In various committees of the forum, we provide real time status reports on work in progress as well as periodic information on expenditures. The forum provides an opportunity for virtually any other Federal, state, tribe or special interest group to influence the scope of our work as well as the use of information and expenditure of funds. Successful completion of this study and the regional decisions that will be a product of the effort are dependent on close coordination and active involvement of the citizens of the northwest as well as the agencies and tribes that represent them.

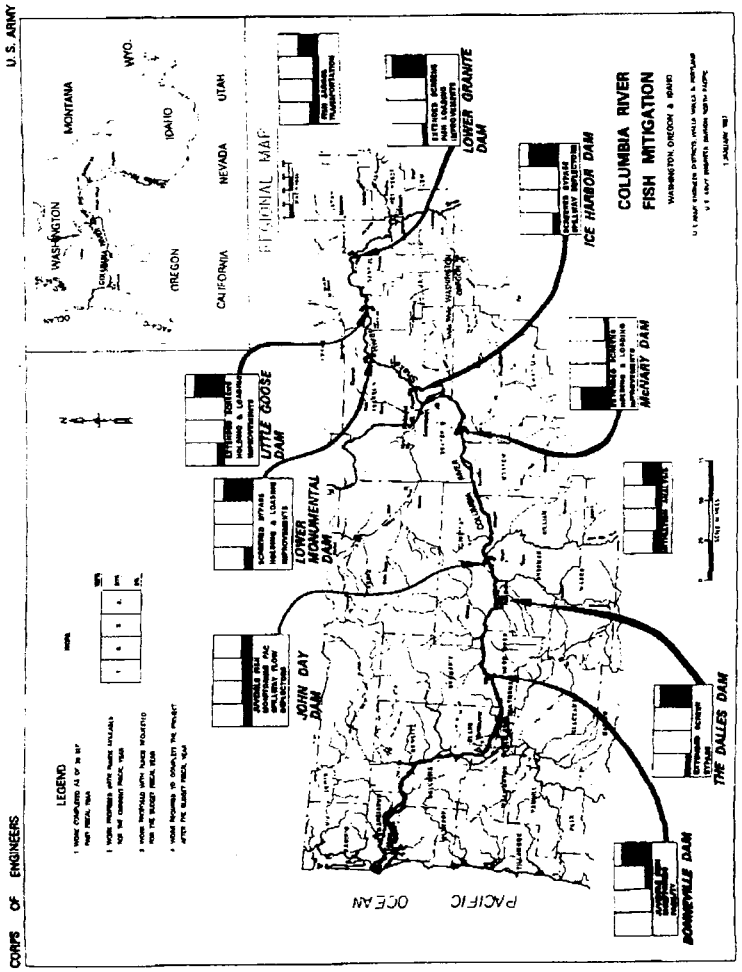
The current schedule for this study calls for a Draft Feasibility Report and EIS in the spring of 1999 and a Final Report and EIS in December 1999.

John Day Drawdown Advance Planning and Analysis: Status Report - In fiscal years 1993-1995, the Corps was proceeding with advance planning and design to implement mitigation for a drawdown to minimum operating pool (MOP) at John Day Dam as called for in the NMFS biological opinion. In response to Conference Report language (House Report No. 104-293) accompanying Public Law 104-46, Energy and Water Development Appropriations Act of 1996, this work was suspended pending development of further scientific justification of drawdown as a recovery measure. This justification, with a request for concurrence in funds reprogramming to begin further evaluation of drawdown in FY 1997, was sent to the House and Senate Energy and Water Development Appropriations Subcommittees by letter of February 25, 1997, from the Assistant Secretary of Army for Civil Works. The subcommittees are now considering this request. We have also requested funding to continue this work in FY 1998.

The reprogramming request does not specify the scope of technical studies nor drawdown levels that would be evaluated. Rather, it notes that the scope will be developed in coordination with the region upon concurrence of the committees. In view of the previous analysis of drawdown to MOP conducted under the System Configuration Study and the advanced planning and design for MOP implementation, it is not anticipated that additional funding is required for further analysis of MOP drawdown. We also understand that the Northwest Power Planning Council has recently recommended that no additional funding be allocated for further review of this alternative.

No evaluations or estimates of the impacts of drawdown below MOP at John Day have been conducted to date. No schedule has been established for John Day drawdown study at this time. The period of the study of John Day Reservoir drawdown would depend on the scope and level of detail which would be determined in coordination with regional parties.

Mr. Chairman, this concludes my testimony. I will be pleased to address any questions.


U.S. ARMY
CORPS OF ENGINEERS
COLUMBIA RIVER
FISH MITIGATION
WASHINGTON, OREGON & IDAHO
LEGEND
REGIONAL MAP
WASHINGTON
MONTANA
WYO.
IDAHO
UTAH
NEVADA
OREGON
CALIFORNIA
LITTLE GOOSE DAM
LOWER MONUMENTAL DAM
JOHN DAY DAM
LOWER GRANITE DAM
ICE HARBOR DAM
McNARY DAM
THE DALLES DAM
BONNEVILLE DAM
PACIFIC OCEAN

TESTIMONY OF WILLIAM STELLE, JR., REGIONAL ADMINISTRATOR
NATIONAL MARINE FISHERIES SERVICE -- NORTHWEST REGION

BEFORE THE HOUSE RESOURCES COMMITTEE
SUBCOMMITTEE ON WATER AND POWER RESOURCES

Field Hearing: Lewiston, Idaho May 31, 1997

Members of the Committee, thank you for the opportunity to appear before you today on the subject of the potential drawdown of John Day Dam as a measure to enhance the survival and recovery of Columbia and Snake River salmon. The NMFS role on this and related issues is to work with the affected interests to develop the best set of informed options for the region based upon the best science, and to determine whether and to what degree there may be a regional consensus or prevailing view on the course of actions for the long term in the Columbia River Basin. We are working hard to be in a position to say to the states and tribes "here are the options, here is our best estimate of the performance of each, what do you want to do?" Throughout, we will stick to the best science, whether popular or not.

My comments will address the background, rationale, current status, and desired future of this project from the perspective of the National Marine Fisheries Service. I will also describe other actions, investigations and decisions before the Region and the Congress to provide for the restoration of healthy and productive salmon runs in the Columbia River Basin. These include alternative approaches to addressing the continuing high mortality of adult and juvenile salmon as they migrate through the Columbia River dams. There are deep differences within the region on the optimum path. Finally, I will discuss the regional processes the National Marine Fisheries Service and the other affected Federal agencies are using to ensure regional coordination and to inform our decisions with the best available scientific knowledge.

The 1995 NMFS Biological Opinion on operation of the Federal Columbia River Power System concluded that the proposed operation posed jeopardy to Snake River salmon populations listed under the Endangered Species Act. Together with the action agencies, the Army Corps of Engineers, the Bureau of Reclamation, and the Bonneville Power Administration, the NMFS developed a reasonable and prudent alternative (RPA) that calls for interim measures to immediately improve salmon survival while additional information is developed on a long-term configuration of the mainstem dams. A decision on the long term is planned for 1999. The 1995 NMFS decision concluded that for a number of reasons (discussed below) this delay was necessary. It also concluded that despite this delay the affected salmon populations were likely to remain above survival threshold levels and to maintain an acceptable probability of recovery.

We are pleased that the Federal court recently concluded that both this opinion and its implementation meet the requirements of the Endangered Species Act. We have been and remain committed to a biologically sound and legally defensible approach to recovery, and the decision of the court was gratifying. We were furthermore impressed that Montana, Idaho,

Oregon, Washington and Alaska all argued in the litigation for the full and effective implementation of the Biological Opinion as the proper pathway. Given the substantial disagreements over salmon recovery in the Columbia River system, this is very real progress indeed. Concerns of some of the parties (the State of Montana and the four Lower Columbia River treaty tribes) notwithstanding, we hope to continue that progress.

Before I go on to describe more recent information and decisions and the current status of the John Day drawdown measure, I'd like to take this opportunity to more fully describe the big picture and the deep differences that exist in the views of those involved in salmon recovery in the Columbia Basin. Today, as at the time NMFS issued its biological opinion, there is a rift between supporters and opponents of juvenile fish transportation. One side argues that runs declined to the point of listing during two decades of relying on transportation, and it is time to conclude that transport cannot fully address this problem and to try something else. That something else is natural river drawdown, which would remove known mortality factors like slow- moving reservoirs that are habitat for predators, and turbines that are known to kill 10 percent or more of the fish passing through them. It also provides a more natural river ecosystem conditions. The other side argues that other factors besides the hydropower system have led to the fish's decline, that juvenile fish transportation provides about as much improvement in salmon survival as would removal of the Snake River dams, and that certainly given the present configuration of the dams, the best thing to do in the immediate term is to transport as many fish as you can collect.

In light of these alternative views, NMFS identified several areas of uncertainty and set about to address them. Questions included, what is the mortality rate of fish migrating in-river, what is the ability of transportation to mitigate for that in-river mortality, what is the survival rate needed to ensure the survival and recovery of the Snake River salmon, and will either of the two major options--continued transportation or natural river drawdown--provide that level of survivals.

Through the 1995 biological opinion, the NMFS attempted to establish an orderly process for generating additional empirical evidence and reviewing all available information on these critical uncertainties. The first part of this strategy involves providing sufficient flow and spill to significantly improve migration conditions for in-river migrants. These measures ensure that the studies done under the second part of the strategy provide a measure of the best the system can do in its current configuration. These measures also contribute to the immediate survival improvements during the interim period. We have been very fortunate to have relatively good runoff conditions since 1995. This will help us to estimate the very best that the system can do.

The second part of the strategy involves three principal research initiatives. They are juvenile survival studies, an improved evaluation of juvenile fish transportation, and feasibility studies on surface collection technology for juvenile fish.

The transport evaluation will tell us whether transported or in-river spring/summer chinook

survive to adult at a higher rate. Juvenile fish for this study were marked in 1995 and 1996. We are getting preliminary returns from the 1995 groups right now, and will get the remainder of the 1995 groups and the 1996 groups back in 1998 and 1999. Preliminary returns from the 1995 groups, which should be viewed with great caution at this time, show transported fish returning at nearly twice the rate of in-river fish.

The juvenile survival study data tell us the rate of juvenile fish survival through the hydro system. If these data are consistent with the transport evaluation data, it may provide important information about the expected benefits of a natural river drawdown compared with continued transportation. Some regional scientists argue there is delayed mortality unique to transported fish. If that is true, by drawing down the Snake River reservoirs, one would expect a survival benefit that is greater than the mortalities we actually measure for fish migrating through that stretch of the river. Results to date show that in-river mortality is lower than previously measured, about 50 percent for spring/summer chinook compared with rates as high as 70 to 80 percent in the 1970s. The rate of in-river mortality of juveniles is also consistent with the preliminary results of the transport study. Both results suggest that there is no differential delayed mortality of transported fish.

Finally, the initial evaluation of surface collection technology will tell us if there is a potential to develop improved facilities for handling juvenile salmon. If it works, this technology could be used to improve collection systems for transportation, or to improve bypass systems for in-river migrants. The Corps tested an initial prototype at Lower Granite Dam in 1996. Research on that prototype will continue in 1997. Results on this initial prototype were not good. However, on the basis of what has been learned, both with that prototype and through additional model studies, the Corps is preparing for installation and testing of an improved prototype design in 1998 and 1999.

The third part of the strategy is to refine the analytical tools available for estimating the results we can expect with each of the major alternatives, drawdown versus refinements to facilities and operations within the limits of the dams as they currently exist. With funding from the Bonneville Power Administration, and with the cooperation of scientists from within the region and beyond, we have been working on a process called "Plan for Analyzing and Testing Hypotheses," nicknamed PATH. This process includes the best analytical minds the region has to offer. It is ably and independently facilitated to ensure objectivity and improve effectiveness. It includes an internal independent peer review process, and provision for certain questions to be subject to a second level of peer review through the Independent Scientific Advisory Board established by NMFS and the Northwest Power Planning Council.

Thus far the PATH group has completed a retrospective analysis of spring/summer chinook salmon, reviewing what we know already on the basis of existing data. Additional information from part two of the strategy will be incorporated as it becomes available. The PATH group is currently working on a retrospective analysis of fall chinook data and moving on to a prospective

analysis of spring summer chinook. Analysis of steelhead is planned for 1998. The prospective analyses will be used to project what will happen with salmon runs under the various alternatives over 25, 50 and 100 year time horizons.

The prospective analyses will also provide the hypotheses about management alternatives that will be the yardstick against which the success of recovery measures will be evaluated in a true adaptive management process. We will never be able to know for certain in advance whether a particular set of modifications to the system will be "enough" to provide for recovery. Through the PATH process, however, we hope to get as close as possible to an answer and to an understanding of the risk inherent in the remaining uncertainty. Through implementation of the preferred alternative in an adaptive management framework, we will also assure that we learn as we go and can make necessary assessments and corrections.

This three part strategy under the NMFS 1995 Biological Opinion is scheduled to come to a major decision point in 1999. The additional information available at that time will be the specific results of transport, juvenile survival and surface collection studies noted above. We will also have five additional years of operating experience, improved analytical tools, and, hopefully, a functioning regional intergovernmental process to help us make sense of it all. The intended decision in 1999 is whether any or all of the strategies will, in the opinion of the NMFS, avoid jeopardy and ensure the recovery of listed Snake River salmon. As I mentioned at the beginning, one overlay that the NMFS assumed for this whole approach was that a decision could wait until 1999. There are some in the region, however, who feel that delaying the decision is a mistake. They are concerned that if we do not decide soon, we will have invested sufficient resources in the status quo, that the more significant changes, such as drawdown, will no longer be affordable.

Since it is our hope to be able to address and make decisions on issues such as this through regional coordination, this is a good point to move on to a discussion of the process for coordination among the regional sovereigns.

We are firmly committed to an orderly, intergovernmental process for implementation. Since completing the Biological Opinion in 1995, the NMFS and the other federal agencies have been attempting to develop and employ an intergovernmental forum for regional discussion and decision on operation and system configuration of the Federal Columbia River Power System (FCRPS). Such a forum was informally implemented soon after the opinion was signed. This informal process is still in place. Through the evolution of this informal forum and through discussion in a variety of venues the Federal government developed, and recently distributed, a proposal for a regional agreement that would more formally establish principles and procedures for decision-making.

The goals of the proposed regional forum are

1. To promote fulfillment of related treaty trust responsibilities to Columbia Basin Indian tribes.
2. To ensure the broadest possible technical and policy participation in federal planning, funding, and implementation decisions regarding operation and configuration of the FCRPS.
3. To develop agreement and resolve disputes on operations to be implemented by the federal hydropower operating agencies and other actions related to FCRPS operations and system configuration.
4. When agreement is not reached, to ensure the bases for federal decisions are fully explained.
5. To ensure that the decision-making process for operations and system configuration is open and that decisions of the Forum are fully explained.
6. To promote coordination between implementation of the NMFS and USFWS biological opinions and actions taken under related regional plans and fora to restore Columbia Basin fish.

The proposed forum would include a tiered committee structure comprised of multiple technical committees, overseen by an implementation team of senior managers, who are in turn supervised by an executive committee of the members. Membership would include the states of Oregon, Washington, Idaho, Montana and Alaska; the Indian Tribes of the Columbia River Basin; the Corps of Engineers, Bureau of Reclamation, Bonneville Power Administration, National Marine Fisheries Service, Fish and Wildlife Service, and Bureau of Indian Affairs; and the Northwest Power Planning Council. Each participating member would retain the full range of its authorities and obligations, but would commit to strive for consensus among the other members on its decisions. Our view of NMFS' role in this process would be to develop a range of options for salmon restoration, ensure the development and analysis of the best available scientific and economic information to project the outcomes for each option, then solicit the advice of each of the state and tribal sovereigns on the best path to pursue.

We have recently been informed that the State of Montana and the four Lower Columbia River treaty tribes have decided not to continue participation in the current informal process. We are hopeful that the efforts to develop a more formalized structure for implementation decisions will address their concerns and allow them to resume participation to represent their interests and contribute to more informed federal decision-making.

Drawdown of John Day is one of the federal decisions that the NMFS is attempting to coordinate through this process. The NMFS biological opinion includes it as an interim measure to improve survival. Specifically, it includes the operation of John Day pool at minimum irrigation pool

(MIP) in 1995, and the planning, design and construction necessary to operate John Day pool at minimum operating pool (MOP) by March 1996, but "only after appropriate mitigation measures have been assured." Longer term investigation of the feasibility of operation at spillway crest is also included. The NMFS decision to include this measure was made amid a great deal of controversy including support from State, Tribal and environmental interests, and the Northwest Power Planning Council, and opposition from NMFS' own recovery team. Much of the controversy centered on the high cost (greater than $150 million) of the measures needed to mitigate the effect of the MOP operation on irrigators pumping water from the reservoir and other reservoir interests. An analysis done by the Corps of Engineers together with migration data showed that fish would move more quickly through the reservoir thereby reducing their exposure to predation, which is known to be very high in John Day pool. The Council estimated that the difference between MIP and MOP was the equivalent of 3 million acre feet of additional water. Like the Power Council, the NMFS concluded that while the difference in fish survival may be small, the project was an important component in an overall strategy to improve fish migration through the Columbia River, particularly in light of the difficulty and expense of obtaining equivalent volumes of flow augmentation from the upper Columbia and Snake rivers.

Currently, John Day is being operated at MIP and, for a variety of reasons, there are no immediate plans for drawdown to MOP or other deeper drawdown options. One reason for the delay is the conference committee report on the 1996 Energy and Water Appropriations Bill (H.R. 1905), which limited funding beyond limited advance planning in 1996 pending review of additional information on the costs of and justification for the measure. Additional information on the justification was provided to the Corps by me in December 1996, and has been forwarded to the Committee. That letter supported the Corps' 1997 implementation of preliminary studies developed through a technical committee of the interagency implementation forum. Those studies were not to be directed at the immediate implementation of MOP, but rather at further investigation of the feasibility of spillway crest and a natural river drawdown. The limitation on funding for these studies has yet to be lifted.

Another reason for the delay, and one that will very likely result in additional delay before any change in John Day reservoir elevation, is consideration of a different approach for John Day drawdown based on new information. That new information, discussed in my December 1996 letter to the Corps, includes the conclusions of the Northwest Power Planning Council's Independent Scientific Group (now the NPPC/NMFS independent Scientific Advisory Board) in their September 1996 *Return to the River* report. They concluded as follows:

> "The possibility of restoring historical, but presently inundated, production areas in the mainstem should be evaluated, including permanent drawdown of John Day and, perhaps, McNary pools. Peak spring scouring flows then could be used to restructure and revitalize habitat in these currently inundated areas. Potential advantages are great in the John Day pool because: the large alluvial reach drowned by John Day pool was a key spawning and rearing area prior to inundation, the upstream part of the reservoir is not

developed, and the existing reservoir is a source of high mortality from predation."

The potential benefits suggested in this conclusion go well beyond the reduction in juvenile fish migrant mortality that was the basis for NMFS' inclusion of the measure in the Biological Opinion. However, these additional potential benefits would be expected to accrue to species other than the listed Snake River chinook and sockeye that are the basis of the NMFS opinion (most notably Hanford Reach fall chinook). They are also dependent on a drawdown much deeper (to natural river bed) than the near term drawdown to MOP required by the biological opinion.

On the basis of this information NMFS currently believes that the appropriate course of action is to hold off on MOP implementation to allow investigation of a broader range of alternatives for John Day, including natural river level. We have added this alternative to the prospective analysis planned in the PATH process. It will also be important to include an assessment of the potential effects on salmon populations other than listed Snake River salmon. In an April 15, 1997 letter to the Executive Committee, I alerted the other members that NMFS intends to reassess the MOP requirement at John Day through the regional implementation forum.

I hope this information is helpful. I would be happy to answer any questions you may have.

TESTIMONY OF
SAMUEL N. PENNEY, CHAIRMAN
NEZ PERCE TRIBAL EXECUTIVE COMMITTEE
on behalf of the
COLUMBIA RIVER INTER-TRIBAL FISH COMMISSION
before the
UNITED STATES HOUSE OF REPRESENTATIVES'
SUBCOMMITTEE ON WATER AND POWER
COMMITTEE ON RESOURCES

FIELD HEARING
LEWISTON, IDAHO
May 31, 1997

Mr. Chairman, on behalf of the Columbia River Inter-Tribal Fish Commission (Commission), thank you for the opportunity to present the Commission's views on various drawdown proposals that are currently under consideration for certain dams on the on the Columbia/Snake River system.

My name is Samuel N. Penney. I am Chairman of the Nez Perce Tribal Executive Committee, the governing body of the Nez Perce Tribe.

Welcome to Nez Perce Country. The Nez Perce Tribe originally occupied a territory encompassing more than 13 million acres in what is today known as northeastern Oregon, southeastern Washington and northern Idaho. In 1855, the Nez Perce Tribe entered into a treaty with the U.S. government. In that treaty, we were promised a permanent homeland for our people and we maintained the right to maintain our culture and way of life. In that treaty, we reserved, among other things, the right to take fish. As the Supreme Court has recognized, "The right to resort to...fishing places...was a part of larger rights possessed by the Indians, upon the exercise of which there was not a shadow of impediment, and which were not much less necessary to the existence of the Indians that the atmosphere they breathed. (U.S. v. Winans, 1905).

Before presenting testimony on behalf of CRITFC, I must note, as Chairman of the Nez Perce Tribe, that I am extremely concerned that the U.S. House of Representatives Committee on Resources chose to invite the Columbia River Inter-Tribal Fish Commission to appear at this hearing, and not the individual sovereign tribal nations. I believe that when issues, such as the ones that are being addressed today, have such a significant and direct impact on the Basin's tribal sovereigns each sovereign should be offered the opportunity to be heard.

Moreover, I am deeply troubled that this Committee has chosen to place me, as a representative of four tribal sovereigns, not on a panel with representatives of federal and state sovereigns, but on a panel with "interest groups."

Today, I am speaking on behalf of the Columbia River Inter-Tribal Fish Commission (CRITFC). The Columbia River Inter-Tribal Fish Commission was formed by resolution of the Nez Perce, Umatilla, Warm Springs and Yakama Tribes for the purpose of coordinating fishery management policy and providing technical expertise essential for the protection of the tribes' treaty-protected fish resources. The Commission's primary mission is to provide coordination and technical assistance to the member tribes to ensure that outstanding treaty fishing rights issues are resolved in a way that guarantees the continuation and restoration of our tribal fisheries into perpetuity. The tribes' *Wy-Kan-Ish-Mi Wa-Kish-Wit* (Spirit of the Salmon), is a framework plan for Columbia Basin salmon restoration that documents threats to fisheries, identifies hypotheses based upon adaptive management principles for addressing these threats, and provides specific recommendations and practices that must be adopted by natural resource managers to meet their treaty obligations and restore the resource. The tribes' plan, which is in many respects similar to plans developed by the Northwest Power Planning Council (NPPC) and the National Marine Fisheries Service (NMFS), calls for significantly increasing the survival of salmon during their juvenile and adult migrations through the basin's hydroelectric system (FCRPS). The tribes' ultimate goal is to restore a sustainable fishery resource for the benefit of all peoples in the Pacific Northwest and Alaska.

In developing a framework for restoring salmon, we have provided policy direction, as well as conservation actions, that must be acted upon by the federal government and the states. The tribes have identified the need to insure that the burden of conserving these salmon stocks is allocated fairly across those land and water uses responsible for their decline. Consistent with this need, the Commission has identified changes that harvest management, hatchery programs, hydroelectric development, and habitat management activities (e.g., forestry, irrigation, mining and other development activities) must make in their operations to ensure the recovery of salmon stocks and fisheries.

Our framework recovery plan covers all the areas that must be addressed in order to protect salmon stocks and insure their restoration to levels consistent with the international obligations of the United States and with its trust obligation to the tribes; *but that will be the easy part: the most difficult obstacle facing the restoration of the salmon runs is the lack of political will to tackle the issues head on.* We will do everything necessary to insure that these runs will be rebuilt. The focus of our testimony today is the actions that must be taken to correct the damages caused by the hydropower system.

As a preliminary matter, to sustain the renewable salmon resource, the system of reservoirs and dams that provide power for industry and water for irrigation must be managed to provide flows and passage for migrating juvenile and returning adult salmon. The tribal approach is founded on hydrosystem objectives and measures in the *Spirit of the Salmon* and is consistent with the ecological and scientific principles expressed in the Independent Scientific Group's *Return to the River*. The tribal plan prioritizes funds to 1)

drawdowns, 2) actions to meet water quality standards, 3) measures to increase spill efficiency and surface bypass at lower Columbia dams, and 4) measures to assure juvenile and adult passage performance standards are met.

Legal Basis for Tribal Drawdown Proposal

Tribal fishing rights are as valuable to the Columbia River treaty tribes as the air we breathe. In the Columbia River Treaties, our tribes reserved to themselves a right they have practiced since time immemorial: the right to fish at all usual and accustomed fishing sites regardless of where these sites are located. This right is vital to Columbia River tribes' subsistence, culture, religion and economy. The following summary is drawn from the paper, "Columbia River Treaty Fishing Rights," that I have provided to the committee in order to provide you and your staff with a better understanding of the legal and moral obligations of the United States in its relationship with our tribes.

The United States stands in a trust relationship to the Columbia River treaty tribes. All federal actions, by all federal agencies, affecting Indian people must be judged by the most exacting fiduciary standards. The trust responsibility imposes an affirmative duty on all federal agencies to protect tribal resources. Canons of construction unique to Federal Indian law are an example of the trust relationship. These canons require treaties to be interpreted as the Indians negotiating them would have understood them and any ambiguous expressions are to be liberally construed in favor of our people.

The right to fish that our people had reserved under those treaties is meaningless if all or most of the fish are killed by the hydro-electric system and environmental degradation before they return to tribal fishing grounds. The Stevens treaties off-reservation fishing rights are the principal component of the Columbia River tribes' treaties. These rights were expressly reserved to allow our tribes to preserve our traditional way of life, which is centered around the river and its resources. These rights are to be respected by the States and by the United States government. In *Winans* the Supreme Court established the reserved rights doctrine; a treaty is not a grant of rights to the Indians, instead it is a reservation of those rights not granted away. Pursuant to the Constitution, treaties with the tribes are the supreme law of the land.

State and federal government regulation of treaty fishing is permissible only when the government shows that the regulation is reasonable and necessary for conservation. Before regulating treaty fishing the government must first demonstrate that adequate conservation cannot be achieved by regulating non-Indian activities. Treaty rights may not be restricted in a manner which discriminates against Indians. The courts have clarified that tribal fishermen have an absolute right to a fair share of the fish produced by the Columbia River system. In *Passenger Fishing Vessel* the Supreme Court made clear that treaty fishermen were entitled to more than an equal opportunity to take fish with non-treaty

fishermen and upheld lower court determinations that a fair share was up to fifty percent of the fishery resource. The Court found that the Indian tribes are entitled to harvest sufficient fish to insure "a moderate living," up to the fifty percent ceiling. Currently, the Columbia River fisheries are providing the tribes with far less salmon than is necessary to meet the moderate living standard. This deficiency is preventing ceremonial and subsistence fishing, as well as commercial fishing.

Since both the government and the tribes assumed the fishery resource was inexhaustible, and because treaties are to be liberally interpreted in favor of the tribes, a strong argument can be made that fisheries should be reserved for the exclusive use of our tribes when exclusive use is necessary to insure a "moderate living" for our people. It is inequitable for the federal government to require the tribes to bear the burden of resource conservation when non-treaty development activities are the principle cause of the decline of the fishery resource. This view is consistent with federal trust obligations which require the federal government to protect and enhance treaty fisheries.

The Commission's member tribes ceded millions of acres of land to the federal government. In exchange for this land the tribes received an express guarantee that they would maintain the exclusive right to take fish on their reservations, as well as the right to take fish at their usual and accustomed places off the reservation. The tribes believed that there would always be fish to take. By guaranteeing ourselves the right to take fish, the tribes thought that they were protecting their livelihood and their culture. It was inconceivable to our peoples in the mid 1800s that settlers could exploit the Columbia River ecosystem in such a way that there would not be enough salmon in the future to satisfy both Indian and non-Indian needs. The Columbia River tribes' treaty fishing rights mean more than the right to hang a net in an empty river.

The intent of the treaties has been subverted. Despite its sovereign treaty commitments to secure the tribes' fishing rights, the United States has destroyed, or acquiesced in the destruction of, Columbia Basin anadromous fish resources by means of hydropower development. Because the diminishment of the tribes' treaty reserved fisheries in the Columbia River basin has occurred as a result of these actions, and inadequate attention to trust obligations to the tribes, the allocation of the conservation burden to protect the runs must not further deprive the tribes of their treaty rights to take fish. The means for salmon recovery must be consistent with the treaty secured tribal rights and coordinated with tribal natural resource management programs. In other words, the proportion of the salmon resource losses caused by the hydropower system must be addressed in proportion to the magnitude of the effects; the drawdown of the John Day Dam to spillway crest and the lower Snake River Dams to the normative river level must be undertaken by the U.S. in order to meet its trust obligations to the tribes.

Biological Rationale for Draw Downs

The tribes' *Wy-Kan-Ush-Mi Wa-Kish-Wit* anadromous fish restoration plan calls for a halt of the declining trends of anadromous fish stocks in seven years, and increasing the existing 0.5 million adults above Bonneville Dam to 4.0 million in 25 years. With respect to mainstem passage and habitat improvements, the tribes' plan in the draft Multi-Year Implementation Plan (MYIP) provides the technical details, scope and schedule to support the implementation of the *Wy-Kan-Ush-Mi Wa-Kish-Wit* anadromous fish restoration plan.

The tribes' MYIP plan is supported by other Basin tribes and calls for the majority of capital construction funding during the federal Memorandum of Agreement (MOA) period (1997-2001) to be applied to major tasks that include surface flow bypass systems and spill efficiency, drawdowns, dissolved gas abatement and temperature control, adult passage, and several other measures. These tasks are necessary to meet regional juvenile passage performance objectives of 80-90 percent fish passage efficiency and 95 percent survival per dam by 2001. These tasks are also necessary to meet the tribal adult passage performance objective of reducing adult delay and prespawning mortality by 50% by 2001. Further, these tasks will promote substantially improved water quality by reducing total dissolved gas and temperature through the mainstem Snake and Columbia Rivers. Our plan calls for specific prioritization of appropriate measures and funds toward dams that currently have the poorest ability to meet regional ecological and passage performance standards.

Snake River Draw Downs

The tribal plan's highest priority is to immediately begin preparations for implementing sequential drawdowns of the four lower Snake River reservoirs to natural river levels by 2002, with completion of three dams to natural river drawdown by the end of the MOA period. The tribal plan calls for all engineering and biological plans, NEPA compliance and the federal report to Congress to be completed by the middle of 1998 to allow Congressional appropriations for drawdown for fiscal year 1999. The tribal plan allocates $350 million, or about 55% of the MOA capital construction budget, to this task.

John Day Spillway Crest Draw Down

Another key priority of the tribal plan is to complete preparations to implement a spillway crest drawdown of the John Day pool by 2004-5. The tribal plan allocates $22 million, or about 3.5% of the MOA capital construction budget, to this task. Based upon cost figures provided by Harza, and contingency estimates to remove Condit Dam on the White Salmon River in Washington State, the tribal plan estimates that about $650 million would be necessary to implement John Day drawdown to spillway crest. This figure includes construction costs, modifications for the navigation lock, modification to irrigation withdrawals and mitigation for other impacts. A proposed plan to accomplish this task has

been presented in a feasibility report by Harza. Essentially, the John Day pool would be lowered to spillway crest level by opening the spillgates. Modifications to the adult fishway exits at John Day and to the spillway entrances at McNary would be necessary, and some modifications to the powerhouses may be necessary.

With the restoration of about 40 miles of river for spawning and rearing habitat and reduction of chronic periods of high water temperatures and water particle travel times, the tribes, Harza and the Independent Scientific Group believe this measure could be among the most beneficial available to restore anadromous fish in the Columbia River Basin.

Ecological Benefits of Draw Downs

As noted by the Northwest Power Planning Councils' Independent Science Group's Report, *Return to the River*, reservoir drawdowns will reestablish ecological functions of the river necessary to achieve anadromous fish restoration. For example, without reservoirs and dams that act as heat sinks, temperature regimes will moderate. Further, substantial and critical spawning areas will be restored in the mainstem and at junctions between the mainstem and lower tributaries. CRITFC estimates that if the four lower Snake River dams are drawn down to natural river levels and John Day is drawn down to spillway crest, some 186 miles of spawning habitat will be restored to the Basin. Based upon estimates for Hanford Reach fall chinook adult production, this restored spawning habitat has the potential of producing over 69,000 adult fall chinook.

Juvenile Passage Benefits with Draw Downs

For juvenile passage, USFWS estimates that under low flow conditions natural river drawdown of the four Snake River dams will reduce water travel time by 92% over that when the reservoirs are at minimum operating pool. USFWS estimates that this would reduce juvenile salmon migration time through the lower Snake River by nearly 50%. Reduction of migration time is critical for juvenile salmon that must reach saltwater at the proper time and size. Scientific analyses have demonstrated that this is among the most important criteria for influencing overall stock production. Further, natural river drawdown will eliminate very high levels of juvenile mortality from passage through lethal turbines and screen systems. Recent estimates of mortality through these routes by NMFS indicate that only 37% of juveniles fall chinook survive from above Lower Granite Reservoir to Lower Monumental Dam.

Adult Passage Benefits with Draw Downs

Reservoir draw downs will reduce or eliminate the substantial bioenergetic expenditures and delays and injuries suffered by adult salmon as they must find and climb

over fishways and other passage facilities. Even if adults are successful in passing a dam at the first attempt, delays are substantial. WDFW research has documented that more than 5,000 steelhead annually fall back over the dams through screen systems and turbines.

Solid evidence exists that drawing down impoundments or removing dams to restore natural river systems has substantially increased or enabled anadromous fish production to occur to areas above where the former dams partially or fully blocked anadromy. For example, removals of Harpster Dam on the south fork of the Clearwater River, Idaho, and Lewiston Dam on the north fork of the Clearwater River, Idaho, restored adult chinook passage and increased steelhead passage to upstream areas, which resulted in seeding of available upstream habitat. Steelhead have benefitted from removal of Sweasy Dam on the Mad River, California.

Even though conventional passage methods such as screened bypass systems and fish ladders were considered to restore five species of anadromous fish above two dams in the Elwha River, Washington, considerable analysis and review by tribal, state, and federal fishery managers resulted in recommending removal of the two dams as necessary to fully restore all of the river's stocks. In addition, studies of juvenile chinook passage through the Brownlee Reservoir, Idaho, indicated that substantially more juveniles survived reservoir passage when the reservoir was drawn down.

Economic Rationale for Tribal Drawdown Proposal

The tribes propose removing the four Snake River dams and drawing the John Day Dam down to spillway crest. A preliminary analysis finds that there will be no significant reduction in the reliability of the electrical generation or transmission system *while the proposal will meet or exceed the flow targets in the Biological Opinion.* The proposal will also add significant amounts of spawning habitat for fall chinook *(increasing production capability in the Basin by more than three times that of the long term average output of the Hanford Reach)* and improve resting and feeding habitat for all migrating salmon and steelhead. These stock productivity increases will result in substantial economic and cultural benefits in the Pacific Northwest and Southeast Alaska.

The estimated annual costs to the Northwest power system would be $200 million, due to decreasing the regional energy output by approximately 2,250 average megawatts (compared to 840 average megawatts under the Biological Opinion), most of which would fall on the BPA. In one instance, alternative power marketing techniques could increase revenues by $333 million per year to offset these costs, while other alternatives involving cost cutting measures, while also increasing revenues, could provide $290 million per year. Finally, if the other alternatives could not be implemented by the BPA, a stranded cost charge of one cent per kilowatt hour over the next five years could cover the stranded

costs of the Washington Public Power Supply System, other costs of the tribal drawdown proposal (construction and mitigation costs, e.g., for irrigation system modifications), and would keep the BPA competitive. This stranded cost charge is less than one-half of the competitive and stranded cost charges being imposed in other parts of the United States, such as California and Rhode Island, a measure of how fortunate we are in the Pacific Northwest to enjoy such low cost hydropower.

On the other side of the ledger, the estimated benefit to Southeast Alaskan, Washington and Oregon Coastal and in-river fisheries, as well as Idaho fisheries, remains to be calculated. But, in light of the potential for quadrupling the output of fall chinook alone (without calculating increased benefits for other stocks) from the Columbia River system, the coastwide benefits (direct and in-direct) would be large. For example, in Southeast Alaskan troll fisheries, access to abundant coho stocks are limited by restrictions to protect far-north migrating chinook stocks (Snake River fall chinook). Under the U.S. Chinook Agreement reached last year, the chinook harvest in Southeast Alaska is now sensitive to changes in stock abundance, based upon the aggregate abundance of chinook stocks. An increase in fall chinook production from the Columbia and Snake River system would provide for increased harvest opportunities, not only for chinook stocks but for Alaskan origin coho stocks as well. Under the U.S. chinook agreement, meeting domestic in-river allocation requirements under U.S. v. Oregon and Yakama v. Baldrige is also assured. Increased fishing opportunities would provide economic and cultural benefits to commercial, sport, and tribal fisheries and would have a economic multiplier effect for small communities from Southeast Alaska to the headwaters of the Snake River in Idaho.

Our preliminary analysis shows that the tribal proposal compares favorably with flow regimes provided for under the NMFS Biological Opinion. McNary Dam flows would average 389,000 cubic feet per second during the spring migration, compared to a flow target of 220,000 cubic feet per second under the Biological Opinion. In July, the tribes' proposal would average 237,000 cubic feet per second compared to the 189,000 average provided under the Biological Opinion. In August, both alternatives provide an average equivalent to 142,000 cubic feet per second. With additional analysis, it may be possible to increase August flows closer to the 200,000 cubic feet per second target in the Biological Opinion.

In the Snake River, under the Biological Opinion, Snake River flow targets are set at 95,000 cubic feet per second in the spring and 50,000 cubic feet per second in July and August. The tribal proposal provides flow equivalents of 1,130,000 cubic feet per second in the spring, 505,000 cubic feet per second in July and 256,000 cubic feet per second in August.

One variation of the tribal proposal could reduce adverse impacts at Dworshak, Grand Coulee, Libby, and Hungry Horse Reservoirs. The potential benefits would be to

improve recreation and the survival of resident fish in those reservoirs. Under this variation, pool levels at each of these reservoirs would be greater than those provided in the Biological Opinion. The limitation on this proposal is ensuring that there are adequate flows of appropriate quality and quantity in the mainstem Columbia River.

Under our preliminary analysis, the BPA will bear most of the added costs associated with replacing the lost electricity from the dams that are removed or drawn down. We recommend that the three sovereigns undertake additional analysis that would determine the revenue that could be generated by the BPA from the revised configuration of the power system. This revenue should be compared to the costs and savings associated with dam modification. The modifications would add costs, but there would also be offsetting savings, such as the elimination of fish protection facilities and new or modified turbines at those dams. Comparing net costs and revenues would allow the Administration and Congress to evaluate the true impact on BPA and determine which combination of the strategies the three sovereigns tribes are reviewing would be needed to implement our drawdown proposal.

Conclusions and Recommendations

Critical adult and juvenile passage and mainstem habitat measures at the Lower Snake River dams and the Lower Columbia dams are being precluded because capital construction funds are being directed to development and installation of more screen and transportation systems. These measures would be inoperable under draw downs, thus, would be wasted investments. Further, studies have shown that these systems are no better or may be worse for juvenile salmon than turbine passage. Considering the merits of other fish mitigation such as draw downs, spill and adult passage improvements under the MOA and the increasing proportion of capital construction reimbursements and operation and maintenance costs for years to come, funding the more development of screen and transportation systems appears even more misplaced and should not go forward.

Natural river draw downs of the Lower Snake River dams and draw down of John Day pool to spillway crest are critical to 1) greatly increase spawning areas and production potential, 2) insure that adults reach spawning areas by reducing migratory energy demands, 3) reduce temperatures and total dissolved gas, 4) significantly decrease juvenile travel time and reduce substantial juvenile mortalities through dams. Drawdown is supported by *Return to the River* and is necessary to meet ecological, juvenile and adult objectives of the federal, NPPC and tribal plans. Evidence exists from the Columbia, the Fraser and other basins that drawing down impoundments or removing dams can restore salmon runs to areas above these areas that previously partially or wholly blocked passage of salmon.

If capital construction funds from the federal Memorandum of Agreement are appropriately utilized, and existing subsidies to other river users are modified, the tribes believe that enough funding exists in the MOA to accomplish natural river draw downs of the four Lower Snake River dams. Further, if existing MOA capital construction funds and future funding obligations of the federal government to restore Columbia Basin anadromous fish after the MOA are fulfilled, the tribes believe that spillway crest drawdown of John Day pool can be realized. As the tribes' trustee, the federal government must do no less to uphold and restore tribal treaty trust resources.

WE ENCOURAGE YOU TO PROVIDE LEADERSHIP AND SUPPORT FOR A PROCESS THAT COMPREHENSIVELY ADDRESSES FISH AND WILDLIFE RESTORATION

As the United States and the Pacific Northwest addresses anadromous fish restoration in a manner which ensures the United States will honor its treaty obligations and trust responsibility to the Basin's tribal sovereigns and ensures compliance with applicable resource protection, mitigation and enhancement statutes, the Federal Columbia River Power System and the Bonneville Power Administration face the challenges of adapting to a deregulated utility environment.

There is a critical need for an intergovernmental decision making process that will protect and restore fish and wildlife while allowing sustainable use of the river, including power, irrigation, and navigation. At a recent meeting facilitated by Jim Waldo, federal, state, and tribal representatives agreed that "The region needs to discuss a common set of values for the Columbia River system. Constructing a common view will require hard decisions on long term river operation, fish and wildlife, and funding. The status quo is unacceptable." (Summary points from that meeting is attached.)

Neither the limited process fashioned by NMFS for deciding which major structural modifications must be made to the hydroelectric system nor the Transition Board sanctioned by the region's governors to discuss energy issues have been structured to accomplish this. These processes, by the very structure, separate the interrelated river operation, fish and wildlife, and funding issues preventing a comprehensive decision-making forum.

However, we are hopeful that a forum to address these issues may be emerging at the regional and national level. Specifically, we have been discussing these interrelated issues with the states of Idaho, Washington, Oregon and Montana, the federal agencies, and the Administration. As the federal, state, and tribal participants agreed at the meeting facilitated by Jim Waldo, "The next 6-12 months are critical to achieving a comparable level of regional progress on fish and wildlife issues as on energy issues. Failing to make significant progress will result in a chaotic regional and national battle over energy

deregulation."

We are looking forward to engaging the sovereigns in a discussion of these issues at a high level government-to-government level of consultation. We are encouraged that the states, federal government and tribes are participating in a meeting on June 3 among the sovereigns to discuss committing to work together to assure fish and wildlife restoration in the face of energy deregulation.

A high level government-to-government consultation forum would allow the sovereigns to deal with issues such as hydrosystem reconfiguration in a comprehensive way that is based on the best science, is geared toward restoration of all stocks and species of fish, and assesses the implications of these decisions. A comprehensive effort such as this will require the sovereigns to consider aligning a number of conflicting decision tracks, such as the prospect of federal and state energy deregulation legislation, Bonneville Power Administration's subscription process, the National Marine Fishery Service's 1999 decision date for what major structural modifications must be made to the hydroelectric system, a proposed extension of the fish and wildlife budget memorandum of agreement and the Snake River Basin Water Rights Adjudication.

Significant leadership will be required from federal, state, and tribal governments to make progress in comprehensively approaching these issues. We are willing to rise to this challenge, and urge you to provide leadership and support to this effort.

Mainstem Spawning Production Potential for Fall Chinook

River Reach	Estimated Redds	Number of Adults
Hanford Reach (56 miles)	8,600	21,500
John Day Reservoir at Spillway Crest (40 miles)	6,143	15,350
Four Lower Snake Dams to Natural River (140 miles)	21,500	53,750

Assumes 2.5 adult salmon per redd

CRA
Columbia River Alliance *For Fish, Commerce and Communities*

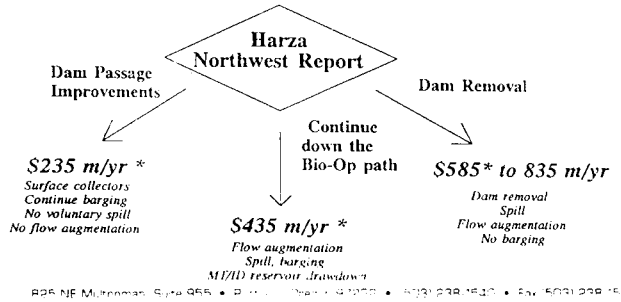
Testimony of
Bruce J. Lovelin, Executive Director
Columbia River Alliance for Fish, Commerce and Communities
before the
U.S. House of Representatives Subcommittee on Water and Power
May 31, 1997

Summary

Residents of the Pacific Northwest have been embroiled in a quest to recover salmon in the Snake and Columbia rivers. At $435 million per year, Northwesterners are funding the most expensive federal recovery program in the history of the Endangered Species Act, and today regional resources are becoming strained while results prove dismal. Although the 1997 salmon run appears to show a dramatic rebound, it is an anomaly as salmon continue their general decline throughout this basin and throughout the western United States. Now, an ever-increasing disenchantment pervades the Northwest with the leadership of the National Marine Fisheries Service, the U.S. Fish and Wildlife Service and our state fishery agencies, and some advocacy groups are calling for the dismantling of four Snake River Dams and the recreation of a free-flowing river.

The Columbia River Alliance for Fish, Commerce and Communities believes the historical uses of the river: hydroelectric generation, navigation, irrigation, flood control, and recreation, can co-exist with healthy salmon runs. Dam removal advocates lack scientific support for their idea and the resulting economic impact would be great. CRA members believe we are at a crossroads and it is time to make a decision on the way to recover endangered salmon. Once the relevant scientific data and economic and societal impacts are considered, the region will adopt a path recommended by two blue-ribbon, independent scientific groups, a program that reduces recovery costs while providing the highest survival rate for salmon.

The Northwest Salmon Recovery Crossroads



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3 OVHEADS

Testimony

My name is Bruce J. Lovelin. I am the Executive Director of the Columbia River Alliance for Fish, Commerce, and Communities, an association of agriculture, navigation, electric utility, labor, forest products, manufacturing, and community organizations. (Enclosure 1--membership list) Our membership believes that a multi-purpose Columbia and Snake River system can co-exist with healthy salmon runs. We believe salmon recovery must be scientifically based, cost-effective, and economically affordable. Our membership supports a salmon recovery plan proposed by the National Marine Fisheries Service (NMFS) Snake River Salmon Recovery Team (the Bevan Team) and endorsed by the National Research Council. This plan includes continued development of improved salmon barging and dam passage, and curtailment of spill and flow augmentation. The resulting recovery plan would cost far less than the current NMFS $435-million-per-year plan, provide the best chance for salmon recovery, and preserve our use of one of the greatest renewable resources in our nation: the Columbia and Snake river system.

Pacific Northwest Dams are Vital to Regional, National Interests

The Columbia and Snake river hydropower dams are the single most important economic and societal asset in the Pacific Northwest and is a $30 billion annual economic engine. Linking the four states of Oregon, Washington, Idaho, and Montana, and to a lesser extent even the nation of Canada, the series of federal dams on these rivers provide many benefits to the citizens, communities and businesses of our region.

A vocal minority have called for the removal of several large dams, hoping a "more natural" system would lead to higher salmon populations. But the opinions of some of our nation's finest scientific minds agree natural river level reservoir drawdowns, essentially dam removal, may do more harm than good, would devastate the surrounding ecosystems, and could detract from more meaningful, helpful salmon recovery efforts.

I. Dams are Important to the Pacific Northwest

Columbia and Snake river dams are engineering feats built at great expense to benefit future generations throughout the Pacific Northwest. They provide benefits to all Northwest citizens, benefits that ripple through every sector of the population. They provide:

Protection of our Region from Floods

Before the construction of dams, flooding was routine throughout the Columbia Basin's low-lying areas. Even after Bonneville and Grand Coulee dams were constructed, the 1948 Vanport flood created massive property damage and loss of human life. In 1997, the basin's runoff forecast is anticipated to exceed that of 1948. Last week, high water runoff levels in the Columbia and Snake rivers triggered flood warnings throughout the Northwest, prompting Idaho Governor Phil Batt to call on the state's National Guard to help communities prepare for flooding. Despite this high runoff, dam operations prevented flooding of the region.

Although the current system of dams provides confidence against floods, it is not highly regulated; the system can only store 20 percent or 42 million acre feet of its 198 million acre feet annual runoff (System Operation Review (SOR), Power, 2-1,2).

The four lower Snake River dams are considered "run of the river" dams that are generally operated within a very limited range that passes river inflow. Traditionally, these dams do not have flood control capability. In 1997, however, the Corps of Engineers prepared a contingency operation of Lower Granite Dam that would have lowered the reservoir below its Minimum Operating Pool elevation under certain high river flow conditions to prevent flooding over the Lewiston levees. This is an example of how the lower Snake River system's multi-use dams and the integrated system of hydroelectric projects can be flexibly operated to prevent catastrophic harm to property, wildlife, and humans.

Annual Commercial River Navigation of More Than $10 Billion

The dams created a water highway that stretches from inland Idaho to Portland and transports billions of dollars in agricultural products and other commodities each year. This system benefits not only the Pacific Northwest but the entire U.S. and the world, and helps our nation maintain its balance of trade. More export cargo moves through the river than through any other port system on the west coast. More than 12 million tons of wheat, corn and forest products are shipped each year to Japan, for example.

Elimination of commercial navigation to Lewiston and Clarkston would have severe economic consequences to these local communities. The ports of Lewiston, Clarkston, and Whitman County and associated businesses would lose $35.6 million annually from river transportation activities and a portion of an additional $81.3 million in other port industrial activities. Job losses include 1,580 jobs from the water transportation sector and many of the 3,249 jobs from other port industrial activities (Tri-Port Economic Impact Study, May, 1997). For the tri-port area of Washington and Idaho, these losses would be significant.

The success of grain exports to international markets from lower Columbia ports is due to the reliable and affordable delivery of products from the 26 elevators along the Columbia and Snake rivers. Elimination of one important part of this system could have dire economic consequences because international grain sales are highly competitive and require timely delivery at affordable costs. The availability of barging from the Lewiston/Clarkston area gives Idaho and Washington farmers a cost-effective means to ship grain to market. Transportation of a bushel of grain costs 18-19 cents by barge, 30-38 cents by rail, if available, and 42-54 cents by truck.

Barging is also a fuel-efficient way to move these goods. An entire ton of commodity can be barged 514 miles on one gallon of fuel, compared to 202 miles by rail and 59 miles by truck. If barge navigation were halted, an additional 120,000 rail cars would be required, the equivalent of 700,000 semi trucks. Barging produces only a fraction of the air pollution emitted by trucks and trains. Transporting goods by rail would increase vehicle emissions by 470 percent; transporting goods by truck would raise vehicle emissions by 709 percent.

Turning Desert to Income-Producing Irrigated Farmland

The development of irrigation has transformed interior Idaho, Washington, and Oregon from deserts to some of the most productive farmland in the world. There are currently 7.3 million acres of irrigated farmland in the region, and dams provide the water for about one-half of these acres as well as affordable power for required pumping. In 1991, crop and livestock sales amounted to $9.7 billion in the region, providing countless jobs not only in production but in processing, shipping and sales.

Thirty-one active municipal, irrigation and industrial water supply stations use Snake River water. A drawdown would cost $35.1 million in capital costs for modifications and an additional $2.1 million annually for operation and maintenance (System Configuration Study (SCS) - Phase II, 6-9). Thirteen farms pump from the Ice Harbor reservoir to irrigate approximately 35,000 acres in eastern Washington. In addition, the affordable power rates provided by the Bonneville Power Administration over the last 60 years has been a major factor in the development of Northwest irrigated agriculture. Loss of the lower Snake River dams would push electric rates higher and reduce the economic viability of irrigated agriculture.

Hydropower: A Reliable, Affordable and Renewable Energy Source

About 75 percent of the electricity used in the Northwest is provided by the federal Columbia and Snake river hydropower system. Hydropower is an efficient, renewable source for energy production, and does not produce the unwanted environmental effects of coal, natural gas and nuclear power plants.

Drawdown of the lower Snake River dams would reduce annual hydropower generation by 945 average megawatts (SOR, Power, 5-1). When combined with the capacity losses, drawdown would result in higher regional energy costs of $248 million per year. The lower Snake dams produce power at 5 mills per kilowatt hour (½ cent) and is resold at 23 mills per kwh, providing revenue to support BPA's fish and wildlife and other social programs and supply system nuclear debts. Without the revenue of these projects, BPA's future becomes doubtful.

Recreational Opportunities Add to the Northwest Quality of Life

River-related recreational activity created by the dams' reservoirs adds hundreds of millions of dollars to our region's annual economy, and includes reservoir boating, waterskiing, fishing, swimming, camping and picnicking. In 1991, a regional population of about 9 million made more than 21 million "visits" to the Columbia and Snake river recreation sites, a 35 percent increase over the number of visits four years before. The lower Snake River system would lose about $23 million annually in reduced recreational opportunities if a lower Snake River natural drawdown is implemented (SCS-Phase II, 6-8).

II. Why Lower Snake River Drawdowns are Unnecessary

1. Deep reservoir drawdowns would devastate the ecosystems built on current reservoirs.

Reservoirs are alive with fish, wildlife and an environment that is dependent on the maintenance of the reservoir elevation levels. Suddenly instituting deep reservoir drawdowns would displace the fish and wildlife dependent on the reservoir and the water channel below the dam. Sediments from potentially toxic compounds would be displaced and redistributed throughout the river system. Furthermore, large dams have never been deactivated and it is unknown how long it would take for a new, stable ecosystem to be created.

2. Deep reservoir drawdowns to recover endangered salmon are not necessary.

Implementing holistic measures that improve survival in each of the salmon's life stages can produce better benefits than those hoped-for through reservoir drawdown. Even if this approach is determined to be the best for the region, it would take much time and money to implement. According to the Bevan Team, "these precious resources could be put to better use by immediate implementation of other recovery measures with a high probability of biological payback and without the political and social costs of dam removal."

3. Dam operations are vastly improved

Operation of the lower Snake River and Columbia River dams have improved since the 1970s, when high salmon mortality rates were associated with hydropower generation. Today the dams are operated within a 1 percent "peak efficiency" level, causing relatively little harm to salmon that do travel through the turbines. In addition, deflector screens aid in pushing juvenile migrating salmon away from turbine intakes, so few salmon actually go into the turbines. Much of the criticism regarding the dams focuses on the survival of salmon in what has been described as "stagnant, slack water pools." But scientific studies indicate that survival through the reservoirs is very high, upwards of 98-99 percent. The Corps of Engineers is currently examining spill abatement facility construction and prototype of more "fish friendly" surface collector systems to improve survival past the dams.

4. What is unproven remains unfunded

Congress, the Bonneville Power Administration, Northwest electric ratepayers and the public have been unwilling and/or unable to dedicate the necessary resources to the idea's enormous costs and unproven benefits. Again as the Bevan Team stated, this is a contentious issue that will result in moving immediately beneficial measures to a lower priority. The CRA concurs and has asked the Clinton Administration and Congress to eliminated this proposal from further consideration and move the region toward more meaningful, scientific based solutions.

5. Drawdown would eliminate salmon transportation

Deep reservoir drawdown would eliminate one of the most effective and important tools for salmon survival: smolt transportation or barging, which has demonstrated survival rates of 2 to 1 over in-river migration in all 13 scientific studies deemed statistically significant ("Return to the River," 1996, Enclosure 2). Even partial 1997 wild adult salmon returns to Lower Granite dam have given a 2.7 to 1 ratio of transported fish over in-river migration. This means wild fish transported in barges as juveniles survived at a rate 170 percent greater than those juvenile fish that migrated in river. No scientific group says deep reservoir drawdown could provide the 170 percent survival increase necessary to bring salmon survival to the current level provided by the transportation program. Both the Bevan Team and the National Research Council endorse the continuation of salmon smolt barging.

6. Flow/survival relationship uncertain

The principle justification for drawdown has been improved (reduced) travel time to the ocean for juvenile salmon. But both past and recent studies conclude that the flow/survival relationship is uncertain and has been misinterpreted. The current theory proposed by the Northwest Power Planning Council's Independent Science Group's report, "Return to the River," is that a "normative" river that would recreate habitat more conducive to salmon population growth. The Independent Science Group does not, however, call for Snake River reservoir drawdown.

7. Salmon suffer high natural mortality, drawdowns can't improve upon nature

The salmon's decline is a result of many factors, both natural and human caused. The sustained drought, El Nino ocean conditions, and high numbers of salmon predators create high natural mortality. This mortality, combined with flawed hatchery and harvest management strategies, failure of government officials to deal with marine mammals and gill net harvest, habitat impacts and dam operations have created the current depressed state of Idaho salmon. Factors within our control need to be addressed, while factors outside our control need to be better understood. Until then, the region is simply "shooting in the dark" by pursuing the draconian proposal of deep reservoir drawdowns.

III. A John Day Reservoir Drawdown Provides Few Benefits for Salmon

In a December 23, 1996, letter to Brigadier General Robert Griffin, NMFS Regional Director Will Stelle said advance planning and design for a John Day reservoir drawdown should occur as quickly as possible. A drawdown to spillway crest of the John Day reservoir would reduce its elevation by 59 feet. A natural river drawdown would reduce the reservoir's elevation by 106 feet. A drawdown of the John Day reservoir to spillway crest or natural river level would affect every segment of our region and most of its population. The impacts are great.

Biological Impacts

A John Day pool drawdown would dry up 95 percent of the marsh and riparian habitat in the mid-Columbia region. It would destroy the wetlands of the Umatilla National Wildlife Refuge and all its wildlife, including resident and anadromous fish rearing and feeding habitat. The drawdown would impact aquifer levels for the Umatilla and Irrigon fish hatcheries, hatcheries left unable to raise fish.

> ***While drawdown will reduce the cross-sectional area of the reservoir, it will also reduce the shoreline and reduce the area of wetlands. Several major wildlife refuges (Umatilla Wildlife Refuge, Willow Creek and Irrigon wildlife areas) will be impacted by lowering the ground water levels in areas adjacent to the river, drainage of water from established marshes, and exposure of shallow water habitat areas due to drawdown.***
> --Bevan Team, the NMFS Snake River Salmon Recovery Team

Flood Control Impacts

John Day is used each year to regulate flooding in the Portland/Vancouver area. John Day is the closest flood control project to the Portland/Vancouver area, and its proximity to Portland makes it able to impact Portland's Columbia and Willamette river levels in only 12-18 hours. Without John Day, flood control could not be impacted for an additional 380 miles upriver at Grand Coulee. During the February, 1996, flood, the John Day reservoir was used to hold back about 70,000 cubic feet per second, which kept Portland's river levels lowered by 1-1.5 feet. The river level in Portland peaked at a stage of 28.6 feet at 5 p.m. on February 9, 1996, within only inches of flowing over the retaining wall (28.9) feet and flooding downtown Portland.

> ***"Storing water in the John Day reservoir during the February, 1996, flood event stopped the flooding of the City of Portland and many square miles of the surrounding areas."***
> --Technical Memorandum, "Impacts of Natural River Operations at John Day by Russell George, water management consultant

Economic Impacts

The cost of a five-foot drawdown of John Day reservoir exceeds $170 million, a deeper drawdown to spillway crest $713 million to $966 million. The drawdown's costs would include those to water users, including irrigated farming, navigation, recreation and power production so severe that federal river managers rejected the option outright in its assessment of river system operations alternatives. Even in its own biological Opinion, NMFS states that the "expected impacts of spillway crest drawdown, as compared to existing passage conditions, have more potential to be negative than positive."

Recreational Impacts

Ninety percent of the reservoir's recreational use would be eliminated. A John Day drawdown to spillway crest or natural river level would eliminate the recreational uses of the reservoir and decrease by over 90 percent the reservoir's 196,000 annual recreation visits.

> ***"Virtually none of the existing water-based recreation facilities, including boat ramps, marinas, boat docks and swimming beaches, would be useable at any time of the year."***
> --System Operation Review, Final Environmental Impact Statement, p. 4-37

Navigation Impacts

More than $10 billion in commerce and up-river navigation would be eliminated. A drawdown below Minimum Operating Pool elevation would render river transportation above Portland impossible. It would threaten $10 billion in annual regional commerce and impact one-third of U.S. wheat exports. It would increase regional transportation costs by $25-30 million per year, creating impacts on regional farmers and the region's river-dependent communities from Portland to Lewiston.

> ***"Because John Day pool would be below MOP (minimum operating pool), only intra-pool transportation would be possible."***
> --SOR, Final EIS, p. 4-38

Irrigation Impacts

Irrigation from the John Day pool would be rendered almost impossible by a spillway crest or natural river drawdown, and would leave 150,000 acres of precious and productive farmland useless, threatening $400-600 million in annual farm value. Drilling wells to aquifers may be necessary because modifying the existing pumping structures would not be possible.

> ***"A buy out of the irrigated farms could be considered...the buy out would range from $83.7 million to $125.5 million."***
> --SOR, Final EIS, p. 4-40

Power Impacts

The region's power generation ability would be reduced significantly and require acquisition of 8,500 average megawatts from combustion turbines. The John Day power house is the third largest hydroelectric project in the Pacific Northwest. If the Columbia River at John Day is lowered to natural river level, the energy and capacity produced by its power house would be reduced to zero. The Northwest would lose 1,214 megawatts of annual energy and about 24,000

megawatts of annual capacity, equating to an annual loss to the Bonneville Power Administration of more than $255 million.

> ***"Capacity costs could run...hundreds of millions of dollars, leading to a total regional cost...in excess of $1 billion per year."***
> --SOR, final EIS, page 4-30

IV. The Northwest Salmon Recovery Crossroads

In its October, 1996, report to the Corps of Engineers, independent consultant Harza Northwest provided valuable information to help federal and state officials decide the future path of salmon recovery. Harza suggests the region is at a salmon recovery crossroads. So does the CRA; we believe the time to make a formal decision is now because sufficient information exists to choose the path that provides the best hope for the salmon while maintaining our region's economic health. Enclosure 3 illustrates the possible paths of Snake River salmon recovery and the anticipated resulting impacts.

Path A: Dam Removal Provides Few Benefits

While advocates believe lower Snake River dam removal as the "silver bullet" for Idaho's declining salmon, no scientific body supports it. Of the three paths, Harza predicts this option would produce the lowest juvenile salmon survival rate, a rate of 66 percent from Lewiston to Bonneville Dam. In addition, adult travel time to spawning grounds increases from 10-30 percent.

At a cost of $585 to 835 million per year, excluding commercial navigation economic impacts, this plan is well beyond the region's ability to fund. Removal of the lower Snake dams would result in the Bonneville Power Administration's wholesale power rates increasing by 3-4 mills per kilowatt hour to 25 to 26 mills per kilowatt hour. BPA's wholesale customers will look to other more competitive power suppliers leaving BPA and the federal government to fund the current debt.

Irrigation water supplies are eliminated and the upriver ports, and the people dependent on a navigable river, become landlocked.

Path B: The "Spread the Risk" 1995 Biological Opinion Path is Risky for Salmon

The path prescribed by the NMFS, the 1995 Biological Opinion, requires continued flow augmentation from Idaho, Montana, and Canada reservoirs, dam spills, and reduced barging of juvenile salmonids. Harza calls this approach "biological inefficient" as it funds programs that lead the region in opposite directions, promoting both in- river migration and juvenile salmon barging. This plan costs the region $435 million per year and creates a decision point in 1999 when NMFS will decide a future salmon recovery path: dam removal/drawdown or continued barging.

The 1999 decision point is too late for BPA customers to decide their post-2001 power supplier and, given this uncertainty, customers will look beyond BPA to other power suppliers for predictable power costs and supply. "Spread the risk" may be the easiest political approach for the NMFS, but it is economically and biologically inefficient.

Path C: Dam Passage Improvements: Higher Survival at the Least Cost

Harza suggests the construction of surface collectors and continued barging would result in twice as many adult salmon. Also, it would cost northwesterners the least cost of $235 million per year because costly spill and flow augmentation measures would no longer be necessary. This approach would improve BPA's competitiveness, renew customer confidence and provide more reliable long-term salmon program funding. Harza estimates that the resulting juvenile salmon survival would be 80 percent from Lewiston to Bonneville Dam. Traditional uses for the Columbia and Snake River system would be retained.

V. Where Do We Go From Here? Bennett v. Spear

Litigation has been used as a tool by environmental activists to pursue their agendas on Endangered Species Act issues. Several endangered Snake River salmon lawsuits have been filed by environmental and commercial fishing groups and the states of Oregon and Idaho. CRA members have repeatedly been denied standing by the courts, allowing NMFS to implement a strategy barren of scientific and economic accountability.

On March 19, 1997, the U.S. Supreme Court overturned a Ninth Circuit Court of Appeals decision denying economic interests standing in ESA lawsuits. The Supreme Court decision in *Bennett v. Spear* now means economic interests can participate in ESA lawsuits. In the most recent round of Northwest salmon litigation, *American Rivers v. NMFS*, U.S. Department of Justice attorney Fred Disheroon acknowledged the Supreme Court's ruling in discussing the NMFS' duties when formulating "reasonable and prudent alternatives" in ESA decisionmaking: "...as Justice Scalia recently pointed out, when they are doing that they are to take into account not only the needs of the fish, but [also] the economic effects that may be a result."

We believe the ESA and the federal regulations implementing it have always called for federal fish and wildlife officials to make decisions that consider economic interests and strike a reasonable balance between the needs of endangered species and human needs. It has always seemed senseless to CRA and its members, for example, to pursue theories about the impacts of flow on salmon that require the expenditure of millions of dollars per fish, while allowing the same salmon to be caught and sold for a fraction of their value to the region. So long as economic interests were locked out of court, federal fishery officials were free to cause what Justice Scalia termed "needless economic dislocation produced by agency officials zealously but unintelligently pursuing their environmental objectives."

Unfortunately, NMFS continues to refuse to acknowledge the *Bennett v. Spear* decision or a sensible interpretation of the ESA. It continues efforts to exclude affected interests from ESA decisionmaking, using the excuse that only "sovereigns" with management responsibility over salmon should be allowed to participate directly in crafting salmon recovery plans. In

practice, however, this means the fishery agencies are given free rein over economic sectors without regard to the cost effectiveness of recovery measures, leaving litigation as economic interests' only opportunity to participate.

Economic interests can bring practical intelligence to the salmon recovery table, and determine prioritization of scarce salmon recovery resources, maximizing the benefits to salmon. Refusal to consider cost-effectiveness and quantification of benefits to salmon sets the stage for legal struggles to come. CRA has filed a 60-day notice of intent to sue the federal government for its refusal to allow Northwest economic interests, CRA members, to participate in the river operations/salmon recovery process.

VI. Conclusion

The Pacific Northwest is poised to leap down one of these two salmon recovery paths: reservoir drawdown/dam removal or improved salmon passage. Biologically, the choice is clear: no credible scientific body advocates the extreme measure of reservoir drawdown or dam removal as the means to move juvenile and adult salmon up and down the river system. Scientists do, however, advocate improved collection and barging of juvenile migrating fish. Economically, the choice is again clear: while deep reservoir drawdowns and dam removal would unravel the economic engine of our region, improved salmon passage measures would actually save Northwest residents millions of dollars per year and preserve the multi-use river system.

Thank you for the opportunity to provide testimony.

Enclosure 1

CRA

Columbia River Alliance *For Fish, Commerce and Communities*

CRA Membership

Agricultural Interests
Agri Business Council of Oregon
Agriculture Coop Council of Oregon
Columbia/Snake River Irrigators Assn.
East Columbia Basin Irrigation District
Eastern Oregon Irrigation Association
Greater Wenatchee Irrigation District
Idaho Wheat Commission
J. R. Simplot
Ochoco Irrigation District
Oregon Cattlemen's Association
Oregon Farm Bureau Federation
Oregon Grains Commission
Oregon Water Resources Congress
Oregon Wheat Commission
Oregon Wheat Growers League
Pacific Grain Exporters
Pacific Northwest Grain and Feed Assn.
Pomeroy Grain Growers, Inc.
Potato Growers of Washington
Quincy Irrigation District
South Columbia Basin Irrigation Dist.
USA Dry Pea & Lentil Council
Washington State Farm Bureau
Washington State Water Resources
Washington Wheat Commission
Water for Life

Community Groups
Big Bend Econ Development Council
Clearwater Resource Coalition
Columbia Basin Development League
Hermiston Econ Development Corp.
Oregon Lands Coalition
Oregon State Grange
Oregon Water Coalition
Orofino, Idaho, Chamber of Commerce
Washington State Grange

Forest Products
Northwest Forest Resource Council

Labor
Oregon AFL-CIO
Washington Labor Council, AFL-CIO

Industries
Direct Service Industries
Industrial Customers of NW Utilities
Inland 465
Northwest Food Processors Assn.
Tri-City Industrial Development Council

Navigational Interests
American Waterways Operators, Inc.
Columbia River Towboat Association
Foss Maritime
Inland Boatmen's Union of the Pacific
Pacific Northwest Waterways Assn.
Pioneer Ports River Alliance
Port of Portland

Utilities
Benton County Public Utility District
Benton Rural Electric Association
Clallam County PUD
Clearwater Power Company
Columbia Basin Electric Cooperative
Columbia River PUD
Columbia Rural Electric Association
Flathead Electric Cooperative
Franklin County Public Utility District
Grand Coulee Hydroelectric Authority
Harney Electric Cooperative
Inland Power and Light
Klickitat County PUD
Lincoln Electric Cooperative
Okanogan County Electric Coop.
Okanogan PUD
Oregon PUD Association
Oregon Trail Electric Cooperative
Pacific Northwest Generating Coop.
Peninsula Light Company
Ravalli County Electric Cooperative
Salmon River Electric Cooperative
Springfield Utility Board
Tanner Electric Cooperative
Umatilla Electric Cooperative
Vigilante Electric Cooperative
Wasco Electric Cooperative
Washington Rural Electric Coop. Assn.

Table 7.2. Percentage of yearling chinook returning as adults after having been either transported or released as controls from dams on the Snake River as yearling juvenile salmon during the emigration seasons of 1968 - 1990, and the ratio of transport to control, T/C. Data and commentary provided by Dr. John Williams, Coastal Zone and Estuarine Studies Division, NMFS, January 6, 1995.

			Percent return			NMFS
Species	Dam	Year	Trans	Contr	T/C	comments
Yr. Chin	IHR	1968	0.30	0.15	2.1*	
Yr. Chin	IHR	1968	0.16	0.15	1.1	A.
Yr. Chin	IHR	1969	0.24	0.19	1.3*	
Yr. Chin	IHR	1969	0.13	0.19	0.7	A.
Yr. Chin	IHR	1970	0.29	0.20	1.5*	
Yr. Chin	IHR	1970	0.07	0.20	0.4	A.
Yr. Chin	LGO	1971	0.38	0.25	1.6*	
Yr. Chin	LGO	1971	0.42	0.25	1.7*	B.
Yr. Chin	LGO	1972	0.08	0.08	1.1	
Yr. Chin	LGO	1972	0.09	0.08	1.1	B.
Yr. Chin	LGO	1973	0.31	0.02	13.8*	
Yr. Chin	LGO	1973	0.42	0.02	18.4*	B.
Yr. Chin	LGO	1976	0.04	0.02	1.8	C.
Yr. Chin	LGO	1976	0.03	0.02	1.2	C.; D.
Yr. Chin	LGO	1976	0.02	0.03	0.9	E.; D.
Yr. Chin	LGO	1976	0.03	0.01	3.9	D.; F.
Yr. Chin	LGO	1976	0.03	0.03	1.0	E.
Yr. Chin	LGO	1976	0.05	0.01	6.1	F.
Yr. Chin	LGO	1978	0.01	0.01	0.7	
Yr. Chin	LGO	1978	0.00	0.01	0.2	
Yr. Chin	LGR	1975	0.64	0.31	2.0*	
Yr. Chin	LGR	1976	0.02	0.04	0.6	C.
Yr. Chin	LGR	1976	0.04	0.04	1.0	C.; D.
Yr. Chin	LGR	1976	0.03	0.04	0.8	E.; D.
Yr. Chin	LGR	1976	0.08	0.04	2.1	D.; F.
Yr. Chin	LGR	1976	0.02	0.04	0.4	E.

Table 7.2. continued.

Species	Dam	Year	Percent return Trans	Contr	T/C	NMFS comments
Yr. Chin	LGR	1976	0.04	0.04	1.0	F.
Yr. Chin	LGR	1977	13 total returns to all recovery sites from transported fish --- no controls recovered			
Yr. Chin	LGR	1978	0.12	0.01	8.5*	Barge
Yr. Chin	LGR	1978	0.07	0.01	5.3*	Truck
Yr. Chin	LGR	1979	0.04	0.01	3.4*	Barge
Yr. Chin	LGR	1980	none	none	---	
Yr. Chin	LGR	1980	0.00	none	---	
Yr. Chin	LGR	1983	0.28	no controls released		
Yr. Chin	LGR	1984	0.16	no controls released		
Yr. Chin	LGR	1985	0.22	no controls released		
Yr. Chin	LGR	1986	0.16	0.10	1.6*	
Yr. Chin	LGR	1987	0.18	no controls released		
Yr. Chin	LGR	1989	0.06	0.02	2.4*	
Yr. Chin	LGR	1990	0.37	no controls released		

* Statistically significant difference between adult return rates of transported versus inriver migrants.

IHR is Ice Harbor Dam; LGO is Little Goose Dam; and LGR is Lower Granite Dam.

A. Released transported fish at John Day Dam. These fish had much lower return rates than transported fish released below Bonneville Dam. It is highly unlikely that the difference was due to mortalities between John Day Dam and Bonneville Dam as control fish which transited the same area had overall return rates equal to the transported fish.

B. Fish released at Dalton Point rather than the normal release site into the tailrace of Bonneville Dam downstream from the frontroll.

C. These numbers represent data that was combine from releases made at the Washington shore boat launch in April with releases at the normal Bonneville Dam tailrace release site in May and June.

D. These fish were hauled in a 10ppt salt-water solution. The solution was made by adding normal table salt to the water in the tank truck. This is not a procedure in use at this time.

E. Releases were made at the Washington shore boat launch in April. Because of wave action and the location of the ramp, the release hose did not go very far into the tailrace. Fish were washed up on the shore as they were released. (The same thing occurred with the 1987 releases for the Bonneville II survival studies.)

Enclosure 3

Columbia River Alliance

The Northwest Salmon Recovery Crossroads

	Salmon to Idaho	Pct. Barged	Cost	Flow Augmentation
1991	over 10,000	80%	*$100 m/yr*	3.45 MAF
	80% reduction			(w/spill and MT & ID reservoir drawdown)
1996	under 2,000	50%	*$435 m/yr*	13-16 MAF

Harza Northwest Report

Dam Passage Improvements

$235 m/yr *

Surface collectors
Continue barging
No voluntary spill
No flow augmentation

Continue down the Bio-Op path

$435 m/yr *

Flow augmentation
Spill, barging
MT/ID reservoir drawdown

Dam Removal

$585* to 835 m/yr

Dam removal
Spill
Flow augmentation
No barging

Juvenile Salmon Survival from Lewiston to Portland

80% Survival *
Produces twice as many adult salmon

72% Survival *
Biologically inefficient

66 Percent Survival *
No guarantees
Adult travel time 10-30% more

Economic Impacts to Northwest River Uses

Enhances BPA's competitiveness
Continued irrigation development
: and navigation expansion
Montana and Idaho reservoir uses

Long-Term Sustainable Plan

BPA future uncertain
Irrigation moritorium
Continued navigation
Reservoir drawdowns

Continued Loss of BPA Customers

BPA non-competitive
Irrigation moritorium
No river navigation
Reservoir drawdown
Impact to resident fish

Treasury Bailout

Idaho Water Users Association, Inc.

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TESTIMONY ON DRAWDOWN PROPOSALS
COLUMBIA/SNAKE RIVER SYSTEM
PRESENTED TO THE
SUBCOMMITTEE ON WATER AND POWER
OF THE
COMMITTEE ON RESOURCES
U.S. HOUSE OF REPRESENTATIVES
MAY 31, 1997
BY
SHERL L. CHAPMAN
EXECUTIVE DIRECTOR
IDAHO WATER USERS ASSOCIATION, INC.

Mr. Chairman:

Thank you for providing me the opportunity to testify before this Subcommittee today. My name is Sherl L. Chapman, and I am Executive Director of the Idaho Water Users Association, a non-profit, educational Association in Idaho representing 180 irrigation districts and canal companies, 95 agri-businesses and several hundred individuals throughout the State of Idaho. As directed by Committee staff, I have attached a current vitae to this testimony along with my responses to the disclosure form provided by your staff.

The issue before you today is one that we have discussed at length in Idaho for some years. Most of us sincerely desire recovery of the Snake River and other stocks of salmon as a part of our heritage. However, as often happens, the debate

begins to center on what society is willing to give up to achieve this goal and what really is the benefit. Certainly there are many that place tremendous value on restoration of the salmon stocks and would argue that they should be recovered at any cost or sacrifice. I suspect, however, that is not the case with most of the general public, particularly if they were informed as to what really needed to be sacrificed and for what return. It is my belief that society is not yet ready to give up inexpensive hydropower, recreation, a thriving economy and most of the other benefits we now receive from the Columbia/Snake River system to recover salmon.

The issue before us today is to discuss the potential impacts to Idaho from the various drawdown proposals that now exist. There have been many studies, compilations and data acquisition efforts made to advance these proposals and others, often without sufficient data to support the conclusions drawn. The most recent of these reports titled "Salmon Decision Analysis – Lower Snake River Feasibility Study" prepared by Harza Northwest, Inc. is probably one of the better efforts relating to this issue. However, even this report is severely lacking in quantifiable data regarding fish survival. The drawdown proposals that are considered for Idaho and the mid-Columbia River include drawdowns to various reservoir elevations of one to four reservoirs on the lower Snake River and drawdowns of varying river elevations of both McNary and John Day pools. Obviously the impact to Idaho's seaport, Lewiston, would be tremendous if the water surface elevation behind the dams was lowered to less than minimum operating pool (MOP). To do so would eliminate the barging industry that Lewiston depends on and cause severe economic

hardship across the board. However, I will leave quantification of those issues to others more familiar with Lewiston.

My concern is for the irrigation community and economy in southern and eastern Idaho. I believe Harza was correct when they stated that "permanent dam removal is the only "drawdown" option that is worthy of further study". They point out that while this option is significantly more expensive than other options, it maximizes biological benefits and minimizes construction costs and schedules. However, they point out further that the four dam removal is not only designed to recover salmon which is within the scope of the Endangered Species Act (ESA) but also to restore **ecological integrity** which I believe is beyond the scope of the ESA and imposes a more significant burden on the region than is otherwise required. In fact, they point out that permanent drawdown or removal of the dams would take about five years to affect and is the highest cost alternative. The impact to the region would be approximately $150 million annually which would continue in perpetuity. They also point out that by the time the dams are removed and the system achieved some equilibrium that all of the Snake River stocks could be extinct.

While the Harza report seems to promote the four dam removal, other sections of the report suggest that perhaps Harza is not totally committed to this path. The Executive Summary in discussing some of the options, including the "in-river path" states that "by waiting until 1999, data will more clearly define if the in-river path is superior" (to drawdowns). This option would require abandonment of barging of the fish and move more toward juvenile by-pass modifications to the existing dams without removal. The report also suggests that the major issue

needing resolution by 1999 is the quantification of the survival rate of transported juveniles. They state that "if transport survival is high, (80%) then none of the other paths, including four dam removal, increases juvenile survival above the rate possible with transportation." From this statement and my review of other studies, it is clear that little quantification of other options has been achieved, particularly transportation survival and return. This report and others, including the independent science advisory group report sponsored by the National Marine Fisheries Service, all suggest that transportation may be the most efficient tool for restoration of Snake River stocks of salmon, at least for the near term. It is our recommendation that sufficient data be acquired by the National Marine Fisheries Service and the U.S. Army Corps of Engineers to quantify the survival rate of transported juveniles and their returns in order to determine the cost effectiveness of the program and whether or not modification, improvement or other transportation options are far better than the Draconian drawdowns and flow augmentation programs that are now suggested.

A major concern for Idaho water users and agricultural interests is the issue of flow augmentation. While many assume or suggest that drawdowns will replace flow augmentation scenarios and demands for Idaho water, little assurance has been received by the State of Idaho and its citizens that this is the case. In fact, many suggest that with drawdowns or dam removal that additional water from Idaho will be needed in order to shape the flows in a so-called "normative" river. Idaho has agreed, in the past, to assist shaping flows in the Snake River system as a goodwill gesture to assist National Marine Fisheries Service in an

experiment to help recover the salmon. The statute authorizing the use of Idaho water for that experiment expires in 1999 and is not likely to be renewed. Other entities have tried to obtain Idaho water for flow augmentation, some times suggesting volumes of water as high as 1.0-1.5 million acre feet from the upper Snake River basin. An analysis of the impacts of those acquisitions has been made by a number of investigators. Generally, it has been determined that if one million acre feet of water were to be obtained for flow augmentation from Idaho, direct and indirect losses to the economy in southern Idaho would range from $500 to $670 million in income and from 10,514 to 14,000 jobs. Producing the one million acre feet annually by acquiring irrigation rights would require fallowing 440,000 to 592,000 acres of irrigated ground. Idaho cannot tolerate these impacts, particularly if they are combined with dam removal or drawdowns that further effect Idaho's agricultural and industrial economy.

In summary, I recommend the following:

1. Drawdowns and/or dam removal of any or all dams on the Snake River and Columbia River should be carefully analyzed to determine the survival benefits to salmon. Much has been done with regard to economics but little to accurately quantify the real benefit to the fish. Until we know those benefits, it is inappropriate to ask the citizens of the Pacific Northwest to make the sacrifices necessary to implement drawdown proposals.
2. Additional studies need to be initiated to accurately quantify the survival and return rates of transported juveniles. Too little has

been done on this issue and speculation has guided the debate on this issue for too long.

3. Flow augmentation should no longer be considered an option for salmon survival. The work that has been done to quantify the benefits to fish from flow augmentation indicate that massive amounts of water are required to effect even a one-tenth of one percent change in salmon survival rate. The entire Idaho agricultural economy could be destroyed without significant benefit to salmon survival.
4. The National Marine Fisheries Service and the U.S. Army Corps of Engineers should be directed by Congress to remove themselves from the issue of water allocation within the respective states. The federal government has no business in determining who can or cannot divert water from a state administered waterway whether it is a small stream or the Snake River.

Mr. Chairman, I thank you for the time that you've allocated me and I wish you well in your congressional review of this issue.

Respectfully submitted,

Sheri L. Chapman
Executive Director

SLC:kje

FOR THE RECORD

TESTIMONY BY

W. GREG NELSON
PUBLIC AFFAIRS DIRECTOR
IDAHO FARM BUREAU FEDERATION

Before the

SUBCOMMITTEE ON WATER AND POWER
COMMITTEE ON RESOURCES
U.S. HOUSE OF REPRESENTATIVES
Field Hearing
Lewiston, Idaho
May 31, 1997

Mr. Chairman, Congressman Chenoweth, Congressman Crapo and members of the committee. I am Dr. Greg Nelson, Public Affairs Director of the 47,000 member Idaho Farm Bureau Federation. I am a Doctor of Veterinary Medicine and in addition have had considerable experience in all fields of agriculture having served as the State Veterinarian of the State of Idaho for 10 years and as Director of Agriculture for the State of Idaho for over 4 years. I truly appreciate the opportunity to appear before the committee and we are particularly pleased that our two congressmen, Representative Helen Chenoweth and Representative Mike Crapo are here at the committee hearing to personally hear our concerns with drawdown of the Snake River.

Idaho Farm Bureau Policy is very clear and precise in this issue: WE BELIEVE ALL WATER IN IDAHO SHOULD BE USED BENEFICIALLY. We oppose use of water for fish flush unless there is scientific evidence that proves it is worthwhile. We support the following salmon recovery alternatives:

1. Physically modify the dams rather than tearing them down or lowering water levels.
2. Improvement of barging such as net barge transportation
3. Privatize salmon fisheries for stronger fish
4. Eliminate or control predators of salmon like squaw fish, seals etc.
5. Utilizing a new fish friendly turbine developed by INEEL having 3 goals:
   a. Increased power production
   b. Reduce hazards to fish passage
   c. Reduce hazards to fish killing
6. Study of the Kevlar Tube and other bypass systems
7. Regulate harvest of off shore and in stream fish

Agriculture is concerned with the drawdown alternatives being proposed. The science which is being cited as reasons for success of these plans is weak at best and contains a high element of speculation. It is noted that all plans are solely focused on fish with

no consideration for the effects of such drawdowns on humans or economic activity in the entire region. Not being fish scientists, it is hard for us to assess the value of various plans being advanced. Each plan has a variety of scientists, environmentalists and fish enthusiasts supporting the plan, but again, the science is piecemeal, the speculation rampant and the rhetoric confusing to anyone who really is trying to determine what plan is best for the salmon and which plan might include with it some elemental hope for economic survival of the region. Idaho has a great deal at stake, since our state has the largest percentage of suitable habitat necessary for natural spawning of the salmon. Approximately 70% of suitable habitat is found in Idaho indicating we have done well as a state in preserving fish habitat. Every plan we have reviewed seems to have in its proposals a move to take the lower Snake River to a more normative flow so that juvenile salmon can migrate more quickly to the sea. None of the plans however, focus on the affects on anything but salmon. Even on the salmon there is disagreement as to which strategy will be effective in bringing back the numbers which once made up the Columbia/Snake salmon fishery. In addition, no study has been done to assess the other ecological impacts of returning this permanently modified area to a non reservoir status.

We feel breaching the dams and tampering with the John Day pool guarantees the termination of the inland waterway and will destroy Idaho's only seaport – the Port of Lewiston. As an inland shipping state, Idaho needs this port to remain competitive in the world market. The world market is particularly important to the Pacific Northwest, 90% of the wheat produced in the region is exported. The region is a major wheat and barley producer and this export is important to the balance of payments for the United States and as such, critical to the economies of the four pacific northwest states. 200 million bushels of grain move through the port per year with an annual value of over $850 million dollars. Idaho, as the 3rd largest producer of barley and 7th largest producer of wheat in the United States is in part tied to the port. About 54 % of our production moves through the inland waterway and the lower barging rates (at less than one-half the cost of rail and one-third the cost of truck transportation) directly helps farmer producers particularly the wheat and barley growers in the grain producing counties of north Idaho. The port also helps keep rail and truck shipping costs more competitive throughout the state. Idaho exports of wheat and barley total over $350 million dollars per year and ending barging certainly would jeopardize a large portion of these exports. If this barge traffic would be transferred over to truck and rail transportation the environmental impacts would be enormous. Translating as an 470% increase in emissions from rail traffic and 709% increase in emissions from trucking alone.

The direct impact of jobs in the Lewiston area that would be lost if the port was closed, is 1,335 jobs and I might add these are not minimum wage jobs, these are jobs that support families and increase economic vitality for a region. The economic impact study which was commissioned by the Northwest Power Planning Council further reports that if the closure of the Lewiston Port was tied with a closure of the tri-ports of Lewiston, Clarkston and Whitman then the job loss (both direct and indirect) would be

4,830 jobs. The economic impact of such a massive layoff would be devastating to the entire region and particularly to Lewiston.

Part of the drawdown strategies seems to be a call for Idaho water. To meet flow requirements, Idaho prominently figures in balancing the water needs of fish. This water will come at the expense of agriculture, recreation and other beneficial uses. It appears considerable amounts of Idaho's irrigation water is necessary to make these drawdown plans effective. Irrigated agriculture is the backbone of Idaho's agriculture and we are concerned that the water needs of fish could jeopardize the entire water needs of irrigated agriculture. Idaho agriculture is the key to Idaho's economy and provides between 25 to 30 % of the state's economy in any given year. This segment, of the Idaho economy, generates about $3.5 billion dollars per year and the drawdown plans we have reviewed puts this entire economic section of Idaho in jeopardy.

Breaching the 4 lower Snake dams and lowering the John Day pool will have a serious affect on electricity generation in the northwest. We have read the claims, by those who can only talk fish that state the dams are not necessary and produce a measly 4% of the regions electrical generation. Which, they state, will be made up by a glorious new day of fish enthusiasts pouring into the region and dropping many millions of dollars to sweeten the economy. We do not believe the figures being touted by these enthusiasts. We do firmly believe that breaching the dams and lowering John Day pool will cost Bonneville Power a full 10% of its revenues. With the current demands for dollars from the federal power system this cost just about guarantees a failure of Bonneville Power which would have to be bailed out by Congress. In addition, it increases the chances of massive power outages, increased costs, large increases in food prices and massive repercussions in about every segment of Idaho business and economy. We guarantee no amount of fishermen coming to drop a hook in Idaho waters will begin to offset the economic chaos that the breach of the 4 dams will bring to our state.

We in the Idaho Farm Bureau firmly believe that removing the dams is the most costly proposal being advanced for the recovery of salmon. We note that the plan eliminates barging of smolt. In the past this has been an effective way to move large numbers of smolt and guarantee survival. We feel eliminating barging and breaching the dam produces the lowest survival rate of smolt that we have studied. The 66% smolt survival rate of the dam removal scheme does not take into account the effect of increase in adult travel time to travel the river. There is no account on effect of ocean conditions, fishing, predators, etc., but speculates that it will somehow increase numbers of salmon. We do not believe the speculation in the plan and are convinced that if it is implemented it will have a disastrous affect on irrigated agriculture, Idaho economy, electric generation, Bonneville Power and will lead to the need of large treasury bailouts to sustain the plan. We are convinced that this plan will cost over 3/4 of a billion dollars per year and guarantees nothing to the fish, to the states or the tribes. And if the plan includes the lowering of the John Day pool it will lead to floods of both Portland and Vancouver and should be shelved by Congress.

The Idaho Farm Bureau feels strongly that the best plan for salmon recovery is the plan recommended by the Bevan Team and National Resource Council. It involves the expanded use of surface collectors, a continuation and possible expansion of barging smolt, and reduced voluntary spills or flow augmentations. This plan guarantees continued multiple uses of the Columbia River System, provides highest survival benefits to the salmon and is the lowest in cost. We are convinced that the other plans are economic disasters for our state and particularly for Idaho agriculture. We feel drawdown theories are long on rhetoric, short on science, are speculative and massive in cost. We would urge the committee to cut through the rhetoric and speculation and eliminate any consideration of drawdowns.

We thank the committee for the opportunity to address the issue and for bringing the hearing to the State of Idaho. We truly appreciate your concern and willingness to listen to our concerns and are particularly thankful of Congressman Helen Chenoweth and Congressman Mike Crapo's efforts to bring field hearings to our state on issues of such vital concern to the welfare of our citizens.

Testimony of
James J. Anderson
Associate Professor
School of Fisheries
University of Washington, Seattle Washington

before the
U.S. House of Representatives
Subcommittee on Water and Power

in
Lewiston Idaho
May 31, 1997

Summary

I discuss my views on the scientific evaluation of drawdown as a measure to improve juvenile passage survival and growth and to expand the salmon spawning area in the Snake River basin. The primary question in each issue is: will reservoir drawdown improve conditions over the existing system?

Juvenile passage survival in a drawn-down river is expected to be about 66%. The estimated spring chinook transportation survival, including direct and delayed mortality associated with barging, is above 66% indicating drawdown is unlikely to improve smolt passage survival.

It is unclear how drawdown would affect the post-hydrosystem survival of Snake River stocks. Two hypotheses have been proposed to explain the recent stock declines. One assumes that the hydrosystem has a negative impact on the ocean survival of fish. The other hypothesis assumes that climate conditions have impacted stocks independently of the hydrosystem effects. My view is that the climatic effect hypothesis is the most ecologically viable and that drawdown will not significantly alter the response of fish to climate.

It has been proposed that drawdown will increase juvenile salmon growth by improving the food web. Although the food web will be altered with drawdown there is no clear evidence that migrating juvenile salmon are food limited so the actual benefit of an improved food web can not be quantitatively assessed at this time.

Drawdown may also increase the spawning area of fall chinook. A rough estimate suggests that spawning area would increase about 12% in the lower Snake River and may support an additional 5000 spawning adults.

In my scientific opinion, no clear evidence indicates that reservoir drawdown will significantly benefit endangered Snake River salmon. Although a scientific evaluation of the issues is being conducted through the Plan to Test and Analyze Hypotheses (PATH), the PATH process must be held accountable to conduct a complete and definitive analyses of all competing hypotheses.

Testimony

My name is James J. Anderson. I am an associate professor in the School of Fisheries at the University of Washington. I have studied Columbia and Snake River salmon for fifteen years and my research group, (currently with five students and fourteen staff) is engaged in both field studies and quantitative analyses of the environmental and hydrosystem factors affecting the decline of salmon and the actions being taken to recover the runs. In particular, we are actively involved in evaluating the biological and physical consequences of reservoir drawdown through funding from the Bonneville Power Administration and the Army Corps of Engineers. I am a member of the PATH group (Plan to Analyze and Test Hypotheses) which was formed by the National Marine Fisheries Service and the Northwest Power Planning Council to evaluate, in detail, the scientific issues involved salmon recovery. Its members are drawn from state, tribal and federal fisheries agencies, regional universities, and private consultants. In addition, I am participating in the Army Corps of Engineers Dissolved Gas Abatement Study (DEGAS) which is evaluating efforts to reduce dissolved gas generated by hydrosystem spill. My group developed the Columbia River Salmon Passage model (CRiSP) which is one of the analytical models being used in PATH. Finally, my students have produced theses on the migration of fish through the hydrosystem, factors controlling emergence of salmon fry, the ocean distribution of salmon and the evolutionary strategies of ocean and stream type chinook.

In my testimony I will discuss scientific studies related to drawdown and in particular the analyses to assess how drawdown will alter juvenile passage survival. I will also briefly discuss the impacts of drawdown on juvenile salmon growth and the increase of adult spawning area.

In the PATH process to evaluate for drawdown we are asking three questions:

1. What will be the impact of the construction phase?
2. What will be the effect as the river adjusts to drawdown?
3. Will the river at the new equilibrium level improve fish conditions over the current hydrosystem?

We can consider these questions in reverse order since there is no need to consider the first two questions if the answer to the third is that drawdown does not improve upon the current system.

The effect of drawdown on fish survival

To address question three, PATH scientists are considering the potential survival of juvenile migration under drawdown and then will compare this to the estimate of survival that can be obtained with fish transportation. Estimating the potential smolt survival in drawdown is actually straightforward. Using studies through the undammed portions of the system prior to the construction of the hydrosystem, and recent estimates of survival through tributaries, dams and reservoirs, we can estimate the total survival of juvenile fish traveling first through a drawndown river system stretching from Lower Granite Dam to John Day Dam and then through the three remaining dams on the lower Columbia. Assuming 90% survival through the natural river and 90% survival through each of the three remaining dam/reservoir complexes, the combined passage survival is 66%. For drawdown to benefit juvenile survival the existing transportation system survival, including any delayed survival associated with transportation, must be under 66%.

PATH scientists are currently evaluating the total survival expected from fish passing through the combined in-river and barge passage routes. The scientists have concluded that the direct survival in barging is over 95%. If this were the only source of mortality in transportation then there would be no benefit to drawdown since juvenile passage survival would decrease considerably with drawdown. The

analysis is not this straightforward though because PATH scientists have also shown that life cycle mortality, determined from the relationship of adult spawners to recruits, increased significantly in the 1980's and is coincident with the development of both the hydrosystem and the transportation program. Since studies of the direct juvenile passage survival cannot account for this increased mortality, the PATH group has concluded that the increase is likely due to post-hydrosystem mortality. An important question then is whether this recent mortality increase is associated with the Snake River hydrosystem and fish transportation or whether it is the consequence of other factors such as the 1977 climatic regime shift, changes in habitat, or differences in the seasonal flow patterns resulting from storage reservoir regulation. Many of these possible factors have had significant changes coincident with completion of the Snake River hydrosystem in 1976. Thus, ascribing reasons for this additional mortality is difficult yet critical to deciding the fates of the mutually exclusive actions: the fish transportation program and reservoir drawdown.

The current analyses in PATH are focused on assessing the contributions of climate and the hydrosystem to the additional mortality. Clearly, the contributions of each have varied over the past hundred years. Favorable ocean conditions prior to 1920 sustained high harvest rates of Columbia River fish. In 1920 a shift to a dry climate regime was coincident with the beginning of the decline in the stocks, which has brought us to the ESA listing of the Snake River stocks. In the 1950s and 60s the weather shifted to a wet pattern which was favorable to fish but masked the detrimental effects of the hydrosystem under development. In 1977 the climate regime shifted back to a dry pattern and both Columbia Basin and coastal stocks decline with a temporary increase coincident with the strong El Nino effect in the early 1980s.

Realizing that both climate and hydrosystem changes have contributed to the variations in Columbia Basin stocks over a hundred year period, the immediate problem confronting PATH scientists is to assess the contributions of the climate regime and the changes in hydro operations before and after 1977. To resolve this issue PATH scientists are incorporating a variety of information including estimates of salmon productivity between 1952 and 1990, estimates of in-river survival extending from 1966 through 1996, and a handful of estimates of the effectiveness of transportation based on adult returns of tagged salmon that were either barged or migrated in-river as juveniles.

The first PATH task was to assess the level of additional mortality. The approach was straightforward and used the stock recruitment data between 1952 and 1990. The analysis showed that mortality increased in the late 1970s, decreased in the 1980s and then increased again through 1990. In addition, based on the large number of returning spring chinook adults this year, we expect that the post-hydrosystem mortality in the 1995 outmigration was low.

Ascribing causes for the variation in additional mortality is a more difficult task because the information from adult returns alone is not sufficient to disentangle the effects of climate and the hydrosystem. One of the few approaches is to include information from the transport studies, which allows us to determine if the additional mortality of barged vs. in-river passage fish are different. That is, the approach allows us to assess if there is a "delayed mortality" associated with barging that fish migrating in-river do not experience. This question is germane to determining whether or not barging works, which then reflects on the value of drawdown as a replacement action.

Essentially all statistically significant transportation studies from 1968 through 1995 indicate that survival to adult was greater for barged fish than for in-river fish. In recent years, which best reflect the expected future hydrosystem operation, the ratio of adult survival of barged to in-river fish was about two to one. We can determine if post-hydrosystem mortality of barged and in-river fish are different with a simple calculation. Noting that two barged fish return for every one in-river fish, and with a barge

survival of 100% and an in-river survival of 50% then the observed 2 to 1 ratio is achieved without a difference in the post-hydrosystem survival of the passage routes. The existing passage and barge survival data support these estimates and provide compelling evidence that there is no significant post-hydrosystem mortality from fish transporation. Thus, the additional mortality as a result of the development of the transportation program is likely the result of other factors. This evidence also suggests that the fish transportation is a viable program and drawdown will not improve upon the existing juvenile passage conditions.

It still remains to be determined why the Snake River fish have experienced a significant increase in mortality in the last decade. Eliminating transportation delayed mortality does eliminate the possibility that other hydrosystem factors may affect both in-river and barged fish. Nor does it eliminate the possibility that the decline was the result of climate factors acting outside the hydrosystem. A number of competing hypotheses of varying complexity can, and have been considered, but so far they are all vaguely articulated at an ecological level.

One hypothesis is that the hydrosystem has made the Snake River stocks more susceptible to climate changes, although no mechanism has been proposed for how this might occur. A second hypothesis is that the Snake River stocks, being further up-river than the more stable lower Columbia stocks, are naturally more responsive to climate changes. There is some support for this hypothesis: in the Fraser River, which has no dams, the up-river stocks have declined more than the down river stocks. Again, a hypothesis for how climate affects fish in this manner has not yet been detailed in ecological terms.

My personal scientific belief is that changes in climate and ocean conditions are primarily responsible for both the recent decline in Snake River spring chinook and the large increase in returns from the 1995 outmigrants. I am advocating that this scenario receive close scrutiny in the PATH process.

The effects of drawdown on fish growth and spawning area

Finally, although the discussion of the benefits and detriments of drawdown to juvenile fish survival has been PATH's first consideration there are other issues to address, including the possible benefits to juvenile growth and increased spawning in the lowered reservoir. Again many uncertainties exist with these issues but the same process used to address the survival issues can be applied. That is, we need to assess first what is the potential end state of the system with drawdown and second how different is the state from the current river system.

Concerning fish growth benefits from a natural river drawdown, the Independent Scientific Group postulated in "Return to the River" that natural river drawdown may significantly improve juvenile growth, especially for ocean type fall chinook which feed as they migrate through the river system. This claim, although qualitatively reasonable, has not been supported by actual measurements of fish food limitations. If a justification for drawdown is based on the claim that fish growth will be improved, it must first be determined that fish growth is limited in the existing system.

Drawdown can potentially increase the spawning area of ocean type fall chinook. A first order assessment of this benefit can be made using historical estimates of spawning numbers. J. Williams of NMFS has estimated (personal communication) that prior to the dams, the lower Snake River contained about 5000 adults while the total Snake River contained about 40000. Thus, a four pool Snake River drawdown is expected to increase the spawning area by about 12%. Estimates as to how long it will take for the fish to actually populate the lower river have not been developed.

TESTIMONY TO THE
COMMITTEE ON RESOURCES
U.S. HOUSE OF REPRESENTATIVES
MAY 31, 1997

M. Steven Eldrige
General Manager
Umatilla Electric Cooperative
Hermiston, Oregon

Thank you for inviting me to testify on the electrical power impacts from drawdowns, "natural river" or dam removal on the Snake and Columbia Rivers.

The various drawdown or dam removal scenarios we are aware of are:

1. Minimum operating pool for John Day Pool
2. Year-round natural river drawdown (breaching) of John Day Project
3. Year-round natural river drawdown (breaching of the four dams) on the lower Snake River
4. Year-round spillway crest drawdown for the John Day Project
5. A combined option with the lower Snake projects at natural river and the John Day Project at spillway crest

I am confining my remarks to electrical power impacts and will not address navigation, flood control, ecological damage to river habitat or whether or not these proposed actions are correct in any sense (Chart 1 provided by the Public Power Council illustrates the cost of BPA fish and wildlife programs 1996-2006 for scenarios Nos. 2 and 3).

The issue of minimum operating pool for the John Day Reservoir has a small power impact but is without merit from a scientific, political or economic viewpoint. No further discussion on minimum operating pool for John Day Reservoir is warranted.

All projects which may be involved in natural river or breaching would have to be reauthorized by Congress since one of the authorized purposes, power production, would no longer be possible. Spillway crest reduces John Day power production by more than 50 percent and is 50 percent more expensive to construct than natural river. I will focus the rest of my remarks only on natural river. There is $800-$900 million of remaining debt to retire with the present lower Snake projects. Without power production, this debt certainly should not be a Bonneville Power ratepayer obligation but rather a U.S. taxpayer obligation. Additionally, why would BPA ratepayers be obligated to pay for construction costs of $100 million per year for 50 years to breach dams when this construction eliminates power production? Chart No. 2 illustrates the estimated annual debt service for new debt and lost power revenue (existing debt service is in addition to the numbers on Chart 2).

System stability is another overarching issue in the natural river concept. You may be aware of the west coast electrical power outages during high levels of spill (high spills mean that water is going through the spillway rather than through the turbines) at The Dalles, John Day and McNary Dams when McNary Dam tripped off line during an otherwise routine transmission line outage. The huge outage that resulted was due principally to inadequate generation (or Var support) at the north end of the Northwest intertie. With John Day Dam at natural river or even spillway crest, the AC-DC intertie will be severely derated year round. This intertie derating has substantial consequences for Canada, the Pacific Northwest, California and the Southwest.

The various natural river proposals would result in a loss of electrical power capacity of 2,400 to 3,483 MW for the four Snake River projects and 2,200 to 2,480 MW at John Day (spillway crest at John Day results in 1,157 MW lost power capacity). Most of the discussion about lost hydrogeneration seems to focus on the cost of replacement energy and how much cheaper it presently is than BPA energy. The loss of 4,600 to 5,963 MW of capacity will be very significant in its affect on firm energy prices and the ability to instantaneously meet electrical load requirements for our region. Replacing this lost capacity would require as many as 25 new 250 MW combustion turbines preferably located along the Columbia River (this is where the transmission lines are). Without debating how much more expensive new thermal generation is compared to hydrogeneration, should we be concerned about air quality, global warming or CO_2 emissions? These new gas turbines would release 8,000,000 metric tons of pollutants into our Pacific Northwest air shed each year in replacing the approximate 2,440 average MW. When all the new combustion turbines ran for capacity replacement of 4,600 MW, emissions are at a rate of 16,000,000 metric tons per year. According to the EPA and BPA business plan EIS this is equivalent to about 3,300,000 more cars traveling 11,000 miles at 20 miles per gallon.

If BPA is required to pay $1 to $2 billion for the breaching of Ice Harbor, Lower Monument, Little Goose and Lower Granite Dams, their rates would increase 12 to 15 percent. This would put BPA's wholesale rate at 2.2 cents per kilowatt hour where non-federal energy is at 1.6 cents per kilowatt hour. Who will subscribe to BPA power that is 37 percent above other wholesale suppliers?

In summary, the capital costs for natural river on the lower Snake and John Day Projects are expected to be at more than $100 million per year for 50 years plus payments on the existing debt; the Northwest intertie will be severely limited; system stability would be significantly diminished unless the lost generation was replaced with new thermal generation on the north end of the intertie; BPA electric rates will increase. I believe all Pacific Northwest energy costs will escalate swiftly if we begin replacing our hydropower with thermal generation.

The natural river concept for portions of the Columbia and Snake Rivers would end the Pacific Northwest's competitive advantage for low-cost energy and low-cost food supply. The natural river concept could well help some salmon but would do nothing toward improving ocean conditions; or changing harvest levels; or improving mainstream habitat; or making hatcheries work. If we finally break the BPA bank, what do we replace it with? Will sports fishing actually

provide hundreds or thousands of $10/hour jobs?

Isn't it time we acknowledge that we are not going to remove or breach dams--that we are not going to do deep drawdowns and that we are not going to drain Montana and Idaho for salmon? Isn't it time to accept that we have a system in place that is not going to be dismantled? We have, through the development of the Columbia and Snake Rivers, given up annually abundant, naturally occurring salmon runs for the foreseeable future. A Columbia/Snake River system is the reality we have. We can and should improve our system for humanity as well as the other elements and creatures in our ecosystem. The existing system can be improved.

It is time for decisions to be made by our region and not solely by a federal agency. It is time to decide what we in the Pacific Northwest want our future to be.

Testimony provided by:

M. Steven Eldrige
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CHART 1

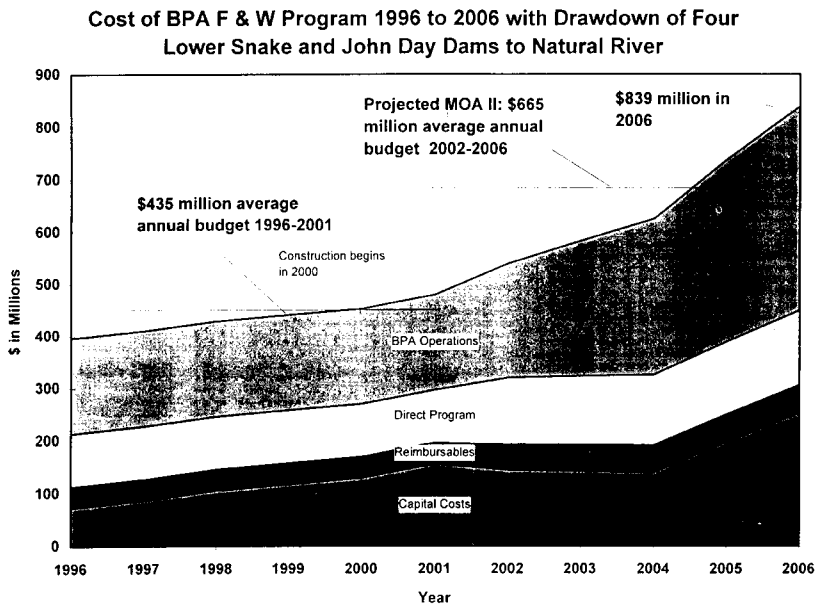

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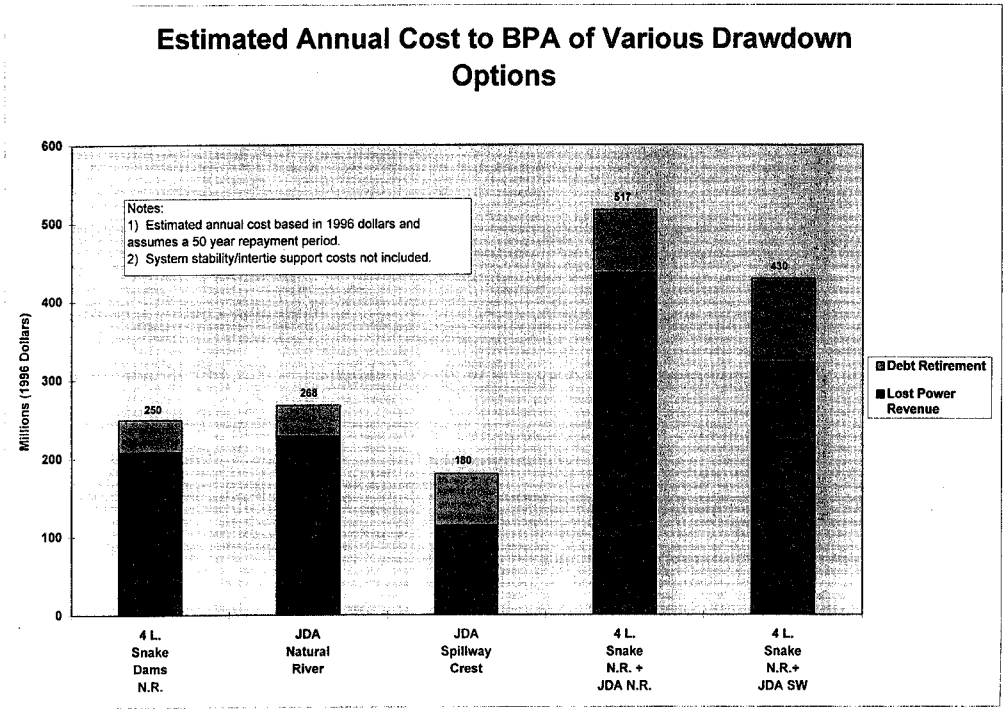
CHART 2



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Testimony
of Charles Ray
Idaho Rivers United

before
The Subcommittee on Water and Power
of The U.S. House of Representatives
Committee on Resources

May 31, 1997
Lewiston, Idaho

My name is Charles Ray. I am a resident of McCall, Idaho. I represent the members and Board of Directors of Idaho Rivers United, a private, non-profit conservation organization.

Idaho Rivers United is working to restore Idaho's salmon and steelhead populations and the ecosystems on which they depend, along with the economies, cultures, and traditions that depend on healthy, self-sustaining, harvestable runs of these fish.

I appreciate the opportunity to represent our members' and the public's interests before this subcommittee.

The Columbia River Basin was once home to the world's largest population of salmon and steelhead, with annual returns of adult fish as high as 16 million individuals, representing 300 million pounds of virtually free protein coming back from the sea every year. A sizable portion of those fish were destined for Idaho.

Today, less than 100 years after large-scale development began on the Columbia and Snake Rivers, Idaho's salmon and steelhead are almost gone. Snake River coho salmon were declared extinct in 1987. In 1991 and 1992, Idaho's remaining salmon species were put under the protection of the Endangered Species Act (ESA). In 1994 and 1995, wild spring and summer chinook returns were the lowest in history. Last year, a single sockeye salmon returned to Idaho. Today, Idaho's steelhead are due for ESA listing.

The loss of this tremendously valuable resource is an ecological, cultural, and economic tragedy.

The decline of salmon and steelhead and the economies and cultures that depend on them is the direct result of a corresponding human-caused disruption of the ecosystems that the fish inhabit. This disruption is most severe and apparent in the fish's migratory habitat - the lower Snake and Columbia Rivers.

There, eight federal dams have turned 350 miles of free-flowing river into 350 miles of slack water reservoirs. Despite federal promises, these dams were not designed or constructed to safely pass juvenile fish. Nearly all scientists not in the hire of industrial interests agree that the critical limiting factor in the survival and recovery of Idaho's salmon and steelhead is the operation of the federal hydropower/navigation/ irrigation system on the lower Snake and Columbia Rivers.

For the past 20 years, the federal government's response to a lethal river system has been relatively minor, but very costly, tinkering with the dams and the juvenile fish barging program. By the only true measure of the efficacy of these approaches - return of wild fish to the spawning grounds and to the creels of Idaho fishermen - both are proven failures.

Healthy fish runs require healthy rivers. The Independent Scientific Advisory Board recently made this clear in its report, Return to the River (incorporated here in its entirety by reference).

At the same time this massive federal system was being developed, an equally massive system of subsidies to the very same industrial beneficiaries of the river system came into being. In its 1994 Majority Staff Report (incorporated here in its entirety by reference), the U.S. House Committee on Natural Resources Task Force on the Bonneville Power Administration identified hundreds of millions of dollars in annual subsidies paid out to the industrial beneficiaries of the Federal Columbia

River Power System. These subsidies include power rate discounts to the aluminum industry, irrigation pumping power rate discounts to the Bureau of Reclamation and private irrigators, and foregone power sales revenue due to irrigation water withdrawals.

The subsidy handed over annually to the navigation industry was outside the scope of the Task Force Report, but it too represents a very real burden on taxpayers, electricity ratepayers, and salmon and steelhead. For example, the Port of Lewiston isn't even self-supporting after 20 years of operation. The Port still relies on a property tax levy for almost half its annual budget. And at the same time the Port is taxing property owners in Nez Perce County, the Port pays no property tax on its real estate, much of which is rented out in direct competition with private businesses that pay property tax and receive no taxpayer subsidy.

These embedded subsidies have crippled the Bonneville Power Administration, placed an undeserved financial burden onto the region's ratepayers and taxpayers, and shifted an enormous debt onto the back's of the fish and dependent economies.

I'm surprised that this subcommittee doesn't appear to be interested in taking a hard look at the massive subsidies that support some of the very industries represented at this hearing today. I think that if the facts were openly presented, there is a real question as to whether the lower Snake River dams are really worth the taxpayer and electricity ratepayer fleecing that is going hand-in-hand with the decline of salmon and steelhead.

The subsidy issue is inseparable from the fish issue. Fairness and good public policy demand as hard a look at the subsidies as the options to restore the fish are receiving. I find it hard to believe that this Republican

Congress, this subcommittee, and Representative Chenoweth would really want to perpetuate these massive public subsidies at the expense of ratepayers, taxpayers, good public policy, the fish, and the economies that depend on the fish.

The current federal hydropower/navigation/irrigation system came to us with a series of promises. Beginning in 1855, our government promised the sovereign Indian nations that we would protect harvestable populations of salmon and steelhead. The federal dams between Idaho and the ocean were authorized with the implicit promise that the fish runs would be saved. The Endangered Species Act of 1973 promises that the species and their habitat will be preserved. Another act of Congress, the 1976 Lower Snake River Compensation Plan explicitly promises that Idaho fishermen would have harvestable runs of salmon. The 1980 Northwest Power Act promises restoration of salmon and steelhead runs to the extent they were affected by the development of the federal hydropower system.

These promises haven't been kept, and I think this breach of trust is probably the biggest tragedy that has befallen the region and its citizens. The decline of these fish and the dependent economies and cultures is clear evidence of the failure of our government to honor and keep repeated and clear promises.

The citizens of this state, the region, and the nation expect the promises to be kept. The public expects a return of the biological, cultural, and economic benefits that could be enjoyed from restored salmon and steelhead runs. It's far past time to correct the mistakes of the past - the lower Snake and Columbia River dams - and begin keeping the promises.

The real challenge facing the federal government, the federal agencies, the Congress, and this subcommittee is not to find all the reasons we cannot do what is necessary to keep the promises and restore salmon and steelhead. The real challenge is recognizing that it is time to keep the promises and finding the courage to do what it takes to restore these fish.

IDAHO STEELHEAD & SALMON UNLIMITED

Committed to Recovering Idaho's Anadromous Fish Runs

ISSU Testimony House of Representatives' Field Hearing, Lewiston, Idaho May 31,1997

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Mr. Chairman, Representative Chenoweth, and members of the committee, on behalf of Idaho Steelhead and Salmon Unlimited's Board of Directors and the approximately two thousand steelhead and salmon anglers belonging to ISSU, we thank you for including Idaho sport fishermen on your witness panel.

First let me briefly review what construction of the Lower Snake River federal dams has meant to Idaho's Fishermen and fishing businesses.

Idaho's sport fishermen were the first to fall victim from the completion of the four Lower Snake River dams in 1975. Idaho's once lucrative and productive general statewide chinook salmon and steelhead fishing closed after 1978 and has never reopened as a result of these federal dams. This is not just about salmon, but about steelhead as well. Wild steelhead have never recovered since their simultaneous decline with chinook salmon only three years after Lower Granite dam was built. In spite of sport fishing closures since 1982 wild steelhead hang precariously near extinction and will possibly be listed for protection by the Endangered Species Act in August of this year. There are 25,000 steelhead fishermen in Idaho that contribute over $90 million dollars annually to Idaho's economy. These fishermen...many in Representative Chenoweth's district.. and this $90 million dollar a year economy is being seriously threatened by the current operation of these dams.

Also the list of victims from operation of these dams has expanded. Fishermen from California to Alaska are now also victims. This year the PFMC shut down salmon fishing off the California coast to save a

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few Snake River Fall chinook. Idaho ranchers and water users are also...or soon will become....additional victims of these dams. It has become explicitly clear that these dams continue to kill so many salmon and steelhead that every wild spawner surviving to adulthood and making it back to Idaho is so valuable to the perpetuation of this species that land use actions must be shaped to protect every one of the few that return.

Present configuration of the dams, combined with minor tinkering on salmon improvements continue to require huge drawdowns of Dworshak Reservoir and threaten even greater amounts of water from the Snake River above Brownlee.

I have two recommendations for how this committee, in focusing on the Lower Snake dams, can help restore Snake River steelhead and salmon, as required by law and treaty.

My first recommendation concerns juvenile fish barging. For nearly twenty years the primary steelhead and salmon management action undertaken at these dams has been the collection and artificial transportation of fish in trucks and barges. For nearly twenty years this action has been a miserable failure. One scientific finding after another, along with some of the region's most noted scientists, are finally admitting what Idaho fishermen have known for over a decade...Idaho's anadromous fish return as adults in far greater numbers when as smolts they are able to ride a good spring freshet downstream to the ocean.

No one is interested in preserving wild steelhead and salmon as museum pieces. Therefore the Independent Scientific Advisory Board's peer review document, "Return to the River" which states that a "Normative River System" is needed to restore the runs must be the starting point for all discussions. You will recall that the recent authoritative ISAB report called for the use of barging only experimentally and instead to focus on in-river migration.

Idaho Department of Fish and Game has very good documentation of this fact and I urge Representative Chenoweth to rely more on the expertise of her own state's biologists for what is best for Idaho's anadromous resource. Also I believe it is important to note that Governor Batt, Senator Kempthorne, and Representative Crapo have now all joined ISSU in calling on the feds to wean themselves away from barging.

The Administration currently plans to wait until 1999 to decide whether to focus our limited salmon and steelhead funds on returning fish to the river, or trying instead to improve fish barging. This delay will simply waste millions of dollars. The scientific verdict is in and the Idaho verdict is in from Governor Batt. I urge this committee to recommend an immediate decision, in favor of the in-river path. And, I urge you, Representative Chenoweth, to join Governor Batt, Senator Kempthorne and Representative Crapo in calling for an end to steelhead barging so we can get on with restoring these fish.

Our second recommendation concerns the future of the Lower Snake dams themselves. What Idaho Fishermen already knew was further reaffirmed by Dr. Don Chapman. Before a Senate Subcommittee hearing chaired by Senator Kempthorne in Washington D.C., Dr. Chapman stated: " We will not go back to the way it once was. Even if we want to go back to the harvests of the 50's, only 45 years ago, there is only one way to do that - take out four Snake River dams and probably John Day as well. " Mr. Chapman is recognized by many as one of the region's leading anadromous fish experts and has represented many of the Columbia River's hydro-system benefactors. Mr. Chapman's honesty in making this statement must be admired and respected. It also must be taken seriously.

Dr. Chapman's statement along with the Independent Scientific Implementation Team's peer review document stating that a "Normative River System" is needed to restore the runs must be the starting point for many questions and subsequent decisions. I.e., to what point does society want to restore the runs and how much are they willing to pay? What are the societal, economic, and cultural values of restored runs? What are the assets and liabilities of the Four Lower Snake River Dams and a drawdown of John Day? All these questions, plus several others must be asked, and their findings reviewed and disseminated before an informed societal decision can be made.

For nearly twenty years the scientific battle raged over whether fish really do need water for their survival or can the Army Corps of Engineers dry up the river and haul them like cattle around an over-worked river system. Now all scientists...but for a few bought and paid-for holdouts... agree that fish really do need water. This decision was finally confirmed by the peer review document produced by the Independent Scientific Advisory Board

This region and this nation must now come to grips with the societal issues

confronting restoration of harvestable sustainable populations of salmon and steelhead. Society recognizes the economic and cultural values of a Native American society and their treaties. Before the dams were built promises were also made to the citizens and fishermen of the Northwest that harvestable sustainable runs of steelhead and salmon would continue. In spite of many federal and state laws guaranteeing this, harvestable runs of salmon and steelhead have not occurred. Society now must confront itself with whether we are prepared to honor those laws and treaties. Society also needs to know of the assets provided by eliminating the many subsidies burdening ratepayers and taxpayers if these four dams were retired. Society needs to know the benefits of restored economies of harvestable salmon runs all the way from California to Alaska.

But just as society needs to know the benefits of retiring these dams they also need to know the liabilities. I don't mean trumped up economic studies paid for by interests trying to protect their own turf and I say that for both sides of the salmon and economic debate.

Northwest congressional leaders should come together to protect taxpayers and ratepayers by legislating a hold on further dam tinkering to aid anadromous fish until a final determination has been made on what society wants done with these dams... either fully restore the runs, or allow them to go extinct. After all, that is the debate, is it not?

ISSU therefore requests that this committee request both a General Accounting Office and the Office of Management and Budget to conduct a thorough and unbiased audit of the assets and liabilities of the four Lower Snake River dams and a spillway crest drawdown of John Day. We also request that until the results of that audit are made public, all further spending on these four dams which locks in the current failed management be suspended. Right now the Army Corps of Engineers plan to spend literally hundreds of millions of dollars in the next five years to gold-plate these dams and lock-in the current failed fish barging program. This committee can perform a real service to taxpayers by urging that this spending cease until we decide as a region what the future of these dams should be.

As an example, the Army Corps is seeking $14 million in FY 1998 to continue with a boondoggle project at Lower Granite Dam, the so-called "Surface Collector". This is just one more improvement in fish barging which will do nothing for steelhead and salmon but will keep federal bureaucrats employed. This committee should oppose

this appropriation and I urge you, Representative Chenoweth, to join Idaho fishermen in opposing it

ISSU is very serious about the restoration of harvestable, sustainable runs of wild steelhead and salmon, and would welcome the opportunity to work with this committee and other stake holders within the region to help shape an honest question for the GAO and OMB to assess.

Again, thank you for inviting us to this hearing, and we stand ready to assist this committee in this very serious matter.

I will be glad to try and answer any questions you may have.

DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY
CIVIL WORKS
108 ARMY PENTAGON
WASHINGTON DC 20310-0108

REPLY TO
ATTENTION OF

03 SEP 1997

Honorable John T. Doolittle
Chairman
Subcommittee on Water and Power
Committee on Resources
House of Representatives
Washington, D. C. 20515

Dear Mr. Chairman:

This is in response to your letter of June 20, 1997, to Brigadier General Robert H. Griffin, Northwest Division Commander, providing additional questions for the record for the hearing on May 31, 1997, on the Columbia/Snake River Drawdown Proposals.

Thank you for the opportunity for the Army Corps of Engineers to testify on this important subject. As requested in your letter, I have enclosed the responses for the record for the questions for Brigadier General Griffin.

Sincerely,

Steven Dola
for John H. Zirschky
Acting Assistant Secretary of the Army
(Civil Works)

Enclosure

Responses to Questions for the Record
Requested by Chairman John T. Doolittle
House Subcommittee on Water and Power of the
Committee on Resources
Field Hearing of May 31, 1997 on
Columbia/Snake River Drawdown Proposals

QUESTION 1. Your testimony refers to the continued evaluation of other non-drawdown alternatives. How seriously are these non-drawdown alternatives being pursued? Can you give us more details on these non-drawdown alternatives?

ANSWER 1. Sir, the Corps is pursuing three potential alternatives for long-term configuration of the Lower Snake River. One of the alternatives is drawdown, the other two involve non-drawdown conditions. All three alternatives are being pursued with equal aggressiveness. The non-drawdown alternatives include:

a. Surface Bypass Systems. The objective is to collect fish at the face of the dam near the surface of the reservoir where the juvenile salmon tend to migrate. This would eliminate delays and reduce stress/injury when smolts must dive deep down into the existing turbine intakes. The surface bypass system concept has been very effective at Wells Dam on the mid-Columbia River. The Corps initiated testing of a prototype system at Lower Granite Dam in fiscal year 1996. These tests are continuing this year and in 1998. The goal is to develop a system that is capable of passing more than 80% of the juvenile salmon. This type of system could be used in combination with barge transportation or to maintain in-river migration.

b. Improvements to Existing Fish Bypass Systems. The installation of extended (longer) guidance screens in the turbine intakes has been proven to increase the number of juvenile salmon guided away from the turbines. These screens have been installed at McNary Dam (on the lower Columbia River) and Lower Granite and Little Goose Dams on the lower Snake River. We are evaluating the installation of these new screens at Ice Harbor and Lower Monumental Dams. In addition, there are potentially a number of ways that the hydraulic flow patterns into the turbine intakes can be improved, which could result in dramatic improvements in the efficiency of the existing guidance systems. The Corps plans on testing these hydraulic improvements in fiscal years 1997 and 1998.

In addition, there is significant work being conducted to develop more efficient turbine designs that would improve survival of juvenile salmon that pass through turbines. The Corps is conducting research to develop this technology in coordination with research being conducted by Idaho National Engineering and Environmental Laboratory and other regional hydropower operators. This technology, if proven to be effective, could eventually be applied to the powerhouses on the lower Columbia and Snake Rivers.

Responses to Questions for the Record (cont'd)
Requested by Chairman John T. Doolittle
House Subcommittee on Water and Power of the
Committee on Resources
Field Hearing of May 31, 1997 on
Columbia/Snake River Drawdown Proposals

QUESTION 2. You refer to the cost savings in the future if the permanent drawdown is implemented at the lower Snake River dams by avoiding future powerhouse rehabilitation costs and the annual operation and maintenance costs of the existing dams. Has the Corps done any preliminary estimates of the cost of maintaining the powerhouses, spillways and navigation locks in essentially a mothballed condition?

ANSWER 2. Sir, the Corps is in the process of inventorying all the operation, maintenance and security requirements for the four lower Snake River dams in a mothballed condition. The associated cost estimate cannot be developed until this inventory is completed. This cost estimate is currently scheduled to be available by the end of 1997. It is anticipated that the operation and maintenance cost for mothballing the dams will be significantly less than the current average annual operations and maintenance cost of $20,000,000. Another impact of mothballing these projects is the loss of approximately $53,000,000 in annual power revenues (FY 1990-95 average) to the United States Treasury. This revenue represents recovery of the O&M expense incurred each year ($20,000,000 average), plus a portion of the capital cost repayment. The Bonneville Power Administration collects these funds and deposits them in the Treasury on behalf of the Corps of Engineers.

Responses to Questions for the Record (cont'd)
Requested by Chairman John T. Doolittle
House Subcommittee on Water and Power of the
Committee on Resources
Field Hearing of May 31, 1997 on
Columbia/Snake River Drawdown Proposals

QUESTION 3. Isn't it true that until PIT-tag detectors are installed at the Lower Columbia dams, and particularly at the Bonneville Dam, we have no effective way to measure the survival of juvenile salmon migrating through that stretch of the river? The Biological Opinion calls for installation of interim PIT-tag detectors at Bonneville by this spring -- has this been completed? Why didn't the Corps insist on installing these detectors sooner, so that we could have measured the effects of the enormously costly operational changes that have been instituted since the endangered Snake River salmon were listed?

ANSWER 3. Sir, fish survival data have been obtained over the years through use of gatewell sampling and through marked fish releases through powerhouse units, spillways and fish bypasses. Using those techniques, survival has been estimated at the lower Columbia River projects. PIT-tag monitoring facilities will greatly enhance the capability to accurately measure survival through the system. An interim PIT-tag detector, using experimental flat-plate detector technology, was installed and tested at the first powerhouse at Bonneville in 1996. An interim flat-plate detector was subsequently installed and employed at the second powerhouse for the 1997 migration season, thus providing the interim capability at Bonneville called for in the NMFS Biological Opinion. These detectors are providing data for the study of spillway survival out of The Dalles Dam. The Corps has long recognized the importance of the smolt monitoring capability, and has been on a fast track to install monitoring facilities at our projects, including Bonneville and John Day. The monitoring facility at John Day will be operational later this year, in time for the 1998 migration season. The permanent facility at Bonneville's second powerhouse is scheduled to be operational by 1999.

Responses to Questions for the Record (cont'd)
Requested by Chairman John T. Doolittle
House Subcommittee on Water and Power of the
Committee on Resources
Field Hearing of May 31, 1997 on
Columbia/Snake River Drawdown Proposals

QUESTION 4. Is the Corps continuing to evaluate the use of surface collectors, dam by-pass systems and other non-removal or drawdown options to improve fish passage efficiency? If so, when will those studies be completed?

ANSWER 4. Yes sir, we are studying structural bypass system improvements at our eight projects on the lower Snake and lower Columbia River dams. These efforts are consistent with the NMFS biological opinion. The schedule for completion of the bypass improvement studies and any follow-on implementation activities varies from dam to dam. For example, we have successfully completed our evaluation of adding extended length screens at John Day Dam and have included funding in our FY 1998 budget request to begin installation across the powerhouse. Surface bypass testing at Lower Granite Dam on the lower Snake River is scheduled for completion in 1998. A recommendation for further action will be made after those tests are complete.

Department of Energy
Washington, DC 20585

August 25, 1997

The Honorable John T. Doolittle
Chairman
Subcommittee on Water and Power Resources
Committee on Resources
U. S. House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

On May 31, 1997, Jack Robertson, Deputy Administrator, Bonneville Power Administration, testified regarding the Columbia/Snake River drawdown proposals.

Enclosed are the answers to 7 questions submitted by you and Congressman Miller, to complete the hearing record.

If we can be of further assistance, please have your staff contact our Congressional Hearing Coordinator, Valerie Adams, on (202) 586-2032.

Sincerely,

J. Gary Falle
Acting Assistant Secretary
Congressional, Public, and Intergovernmental Affairs

Enclosure

Printed with soy ink on recycled paper

QUESTIONS & ANSWERS FROM THE

BONNEVILLE POWER ADMINISTRATION

UNITED STATES DEPARTMENT OF ENERGY

BEFORE THE

SUBCOMMITTEE ON WATER AND POWER

OF THE HOUSE COMMITTEE ON RESOURCES

MAY 31, 1997

QUESTION FROM CONGRESSMAN DOOLITTLE

Q 1: Will Bonneville need an extension of the current fish cap in order to negotiate power contracts for purchases after 2001, when most of the current contracts expire?

A 1: Bonneville faces significant revenue and cost challenges in the restructuring of the electric utility industry. Bonneville is competing in a marketplace where current energy prices are less than our present wholesale firm rate. Significant investment decisions directed toward salmon recovery and maintenance of the hydro system are forthcoming. It is critical that we pursue policies which result in both healthy salmon stocks and a financially healthy Bonneville.

To meet these challenges, Bonneville needs to develop a mechanism, as was accomplished with the original Fish Memorandum of Agreement (MOA), to assure that the needs of fish are satisfied within Bonneville's financial means. This is particularly critical as we approach 2001, when the current MOA and most of Bonneville's power contracts, which represent about 75 percent of our revenues, expire.

As has been discussed in various forums and as suggested in a recent letter from all Northwest Senators, the development of a successor MOA should not happen through the subscription process (the process for replacing power contracts after 2001), but through a separate series of discussions. On June 12, 1997, Bonneville testified before Congress of the Administration's desire to engage in such discussions to create a successor to the MOA. As stated in that testimony, "The Administration believes that a successor to the MOA, which is based on sound science and Bonneville's ability to attract customers and cover its costs, is a worthy goal and is willing to work with the region to this end."

QUESTION FROM CONGRESSMAN DOOLITTLE

Question 2: Has Bonneville prepared any studies which would suggest the current $435 million annual cost is actually necessary for salmon recovery?

Answer 2: It is difficult to answer with any certainty the implicit biological question that is imbedded within this question. That is, will the actions being taken to foster salmon recovery actually result in salmon recovery? Although science is beginning to provide us with more information, it is difficult to answer this question given the complex impacts and interrelationships of ocean harvest conditions, hatchery practices, habitat degradation, and hydro operations. Presently, the chance for recovery with the current actions can not be accurately predicted.

Bonneville has examined future scenarios costing less than $435 million. Bonneville has looked at various packages of capital improvements to aid fish passage with concurrent adjustments to system operations. For example, if prototype surface bypass systems prove successful in guiding fish away from turbines, then installation of permanent systems could be made, a capital investment, and the amount of spill could be reduced, an operational expense reduction. Similar combinations or options involving other technological improvements and various drawdowns have been identified on a preliminary basis. For some options, the annual costs total less than $435 million. For others, the annual costs exceed $435 million. The exact estimate is very dependent on the timing of the investment and the operational tradeoff that is assumed. Deciding on a single direction or approach for fish recovery would help focus the expense and improve Bonneville's ability to forecast future costs. It should also be noted that Bonneville has not reviewed these options for their biological benefit.

Rather, we have assembled a wide range of possibilities using all of the tools that support fish recovery.

QUESTION FROM CONGRESSMAN DOOLITTLE

We understand that Bonneville demonstrated that Fish Passage Efficiency targets set by the NMFS could be met with lower levels of spill, yet the Service has arbitrarily insisted on high spill levels.

Question 3: What position has Bonneville taken with NMFS, particularly when Bonneville biologists believe that lower spill levels would make migration easier for returning adults?

Answer 3: During the pre-season planning and the in-season management processes, Bonneville offers operational proposals in much the same manner as other participating parties. These proposals are debated for their merits during the Technical Management Team meetings and, if no consensus is reached, they may be elevated to the Implementation Team. In the event that no agreement can be reached within the operational decision making forum, it is Bonneville's policy to defer to NMFS as the responsible decision making entity under the Endangered Species Act. NMFS can then make a recommendation to the dam operators, or, in the case of non-operational measures, NMFS can make a recommendation to the Federal entity responsible for funding such measures.

QUESTION FROM CONGRESSMAN DOOLITTLE

Question 4: What ability does Bonneville have to develop its own alternative?

Answer 4: Bonneville's highly qualified staff of biologists are very familiar with the passage issues facing Columbia River salmonids, and regularly express their opinions on the need for and benefits of spill. While reasonable differences of opinion exist on these issues, our focus is on working cooperatively with those Federal agencies, States, and the Northwest Power Planning Council responsible, and accountable for protecting the salmon and resident fish which are affected by spill levels.

Bonneville's biologists feel that there would seem to be some opportunity to reduce spill or change spill patterns to benefit adult migration at some projects and under some flow conditions. The biologists work closely with Bonneville's power planners and schedulers to develop these opportunities where they also seem to make sense for migrating juveniles; that is, where the alternatives are likely to have a positive or, at least, a neutral effect on juvenile survival, either because the alternatives improve or do not hinder physical passage through a project or the alternatives have a potential to decrease dissolved gas below a project. The ultimate goal is to develop alternatives which have a positive, or, at least, a neutral effect on revenues, but alternatives that may have an adverse impact on revenues, but have a significant potential to improve survival in migrating fish, and which may have been overlooked by fisheries managers are also examined. Often the alternatives are not without significant uncertainty, or even risk, surrounding the overall effect to fish survival. In these cases, Bonneville may judge the potential benefits great enough and choose to offer the alternative as an 'adaptive management' measure, or, in other words as a kind of test that can be evaluated for its overall effects on fish. Alternatives developed by Bonneville can be offered as proposals through the processes described in the

above answer to question #3. In the end, NMFS has the ultimate responsibility to recommend implementation of any proposal as a measure within the NMFS Biological Opinion or Recovery Plan. In some cases NMFS has deferred implementation until the methods used to refine estimates of fish passage efficiency can be peer reviewed.

QUESTION FROM CONGRESSMAN MILLER

Your testimony gives detailed estimates of both power and revenue losses that would result in the lower Snake River reservoirs were drawn down to natural river levels and if the John Day reservoir were drawn down to either spillway crest or natural river levels. However, those estimates appear to ignore some offsets that would be realized from modified river operations subsequent operations. If the following offsets are not incorporated in the figures used in your testimony, please supply estimates of how much of the drawdown impacts would be offset by each of these factors. As in your testimony, please supply revenue losses in terms of both directs dollar losses and rate impacts, and please supply power losses in terms of both average megawatts and percentages relative to the federal hydro system and total federal system.

Question 1: How much would power losses be offset by decreased navigation activity at the locks and the resulting increased water availability for power generation?

Answer 1: The U.S. Army Corps of Engineers has estimated that the total annual energy loss due to lockages at the four lower Snake and four lower Columbia River projects combined is 163,000 megawatthours (MWH). Projects operating at natural river levels are not able to generate so only water saved at McNary, The Dalles and Bonneville dams could produce more power. The increase in power from those projects would be about 52,000 MWH. If John Day was operated at spillway crest rather than at natural river level, another 15,000 MWH could be recovered At 22 mills per kilowatt hour (kWH), the revenues gained would amount to about $1.0 - $1.5 million.

Effect on rates: 0.02 mills per kWH ($1.5 million at 1.1 mills/kwh per $100 million).

	Annual Energy (average megawatts)	Percent
Lockages	6 (approx.)	
Total Federal Hydro	9,453	0.06%
Total Federal System	10,274	0.06%

QUESTION FROM CONGRESSMAN MILLER

Question 2: Assuming that spill requirements would no longer be necessary, how much would that offset power losses?

Answer 2: Bonneville has not recently evaluated the cost of the system's operations for fish on a component-by-component basis. Further, the spill requirements have changed (increased) as physical changes (addition of flip-lips for example) have been made at some of the projects and more information regarding dissolved gas levels has been incorporated. Therefore, the best estimate we can make currently is that if all projects were relieved of requirements to spill for juvenile fish passage, annual average savings of about 4 million megawatthours and $50 to $60 million might be realized.

Effect on rates: 0.55-0.66 mills per kWH ($50-60 million at 1.1 mills/kwh per $100 million).

	Annual Energy (average megawatts)	Percent
Spill Saved	450 (approx.)	
Total Federal Hydro	9,453	4.83%
Total Federal System	10,274	4.44%

QUESTION FROM CONGRESSMAN MILLER

Question 3: Assuming that flow requirements would no longer be necessary, how much that would offset power losses?

Answer 3: Bonneville has recently estimated the cost of the total package of system operations for fish at about $160 million. The flow augmentation component cost has not been analyzed separately. However, assuming that the spill component amounts to $50 to $60 million, a rough estimate is that the flow component is about $80 to $90 million. It should be noted that not all of the flow augmentation costs are attributable to an inability to produce energy - some of the costs are the result of having to generate the energy in different portions of the year when it has less value on the market. The rest of the $160 million is attributable to the operation of projects at partially drawn down elevations (minimum operating pools), the requirement to operate turbines within one percent of peak efficiency and the contract with Idaho Power Company for making flow augmentation releases from Brownlee Dam.

Effect on rates: 0.88-0.99 mills per kWH ($80-90 million at 1.1 mills/kwh per $100 million).

	Annual Energy (average megawatts)	Percent
Flow Augmentation Saved	550 (approx.)	
Total Federal Hydro	9,453	5.82%
Total Federal System	10,274	5.35%

National Marine Fisheries Service

Answers to Questions from Mr. Doolittle

1. Will the proposed listing of west coast steelhead have further impacts on the operation of the Columbia/Snake River system?

When NMFS issued its Biological Opinion on operation of the Federal Columbia River Power System (FCRPS) in 1995, it informally analyzed whether a listing of steelhead would require different or additional operations. NMFS concluded that because steelhead migrate at approximately the same time as Snake River spring/summer chinook, there would likely be little change in hydropower operation as a result of a steelhead listing. In 1996 NMFS proposed to list Snake River and Upper Columbia steelhead. Final listings are due in August of this year. Snake River steelhead share the same migratory corridor as Snake River spring/summer chinook, so if they are listed it is unlikely to affect hydropower operations. Upper Columbia steelhead share the lower Columbia migratory corridor with Snake River spring/summer chinook, so if they are listed it is unlikely to affect hydropower operations in the lower Columbia. There may be some effects in the Columbia above McNary Dam. First, the Columbia River dams operated by the Public Utility Districts (PUD) were not covered by the FCRPS opinion, and they will be affected by a steelhead listing. NMFS is presently negotiating a habitat conservation plan with the PUDs on their operations that would address a steelhead listing and a potential future chinook listing. In addition, the FCRPS opinion does not provide for flows in the Columbia above McNary in early April, a time when juvenile steelhead are migrating. It may therefore be necessary to augment early April flows above McNary.

2. It is my understanding that NMFS started additional studies on the salmon about 1994. Will those studies provide significant additional data that can be factored into the 1999 decision on long-term management of the system?

NMFS began conducting reach survival studies in 1993 using the just-developed PIT-tag technology. This technology allowed us to measure survivals of juvenile salmon through specific reaches of the river, for example, between the tailraces of Lower Granite and Little Goose Dams, between the tailraces of Lower Granite and McNary Dams, etc. We have continued these studies since 1993 on Snake River spring/summer chinook and began studies in 1995 on Snake River fall chinook. We also began a transportation evaluation for Snake River spring/summer chinook in 1995, again using PIT-tag technology. That study allows us to compare adult returns for transported juveniles against those for in-river migrants. NMFS believes that these studies together will provide significant new information that will be relevant for making decisions about long-term management. Finally, the FCRPS opinion calls on the Corps to evaluate surface collector technology to determine whether it can provide survival benefits to migrating salmon.

3. If major drawdowns or dam removal options are implemented on the Snake and/or Columbia River system, will that eliminate the need or desire by NMFS to use Idaho water for flow augmentation? If they believe flow augmentation continues to be necessary, why?

It is not possible to say at this time whether continued flow augmentation from Idaho would be necessary. Certainly if the lower Snake River dams were removed water velocities in the Snake River would increase dramatically. The federal dams on the lower Snake River, however, are not the only dams that have had severe impacts on Snake River salmon. Dams in the Snake River

above Lewiston changed the shape of the run-off in the lower Snake and the temperature of the water. Irrigation in the upper Snake River drains 75 percent of the water in a low water year. The Hells Canyon complex blocked as much as 90 percent of the historic spawning habitat for fall chinook and raised summer temperatures in the lower Snake. Given the magnitude of these impacts, it is certainly possible that under some circumstances it may be necessary that some portion of the natural flow remains in the Snake River to ensure adequate migratory conditions for salmon and steelhead.

4. The Corps testimony states that "what can not be determined with high confidence at this point is the expected increased survival for both juveniles and adults out of the Snake River [from permanent lower Snake drawdown], and what contribution this would make to the overall salmon recovery effort." It goes on to say that the analysis in the feasibility study should provide additional information but not a definitive answer. Is this the "best science" on which we are contemplating permanent drawdown on these lower Snake River dams?

The best science available tells us that salmon evolved in a river environment and that they are more likely to thrive in a river environment than in one drastically altered by dams and reservoirs. Science cannot tell us for certain what will happen in terms of numbers of fish if we remove the dams or if we leave them in place and continue to transport juveniles. We are currently working with regional scientists from other federal agencies, states and tribes, to develop tools to predict the quantitative response of Snake River salmon to either option. By 1999 we expect to be able to tell Congress and the region what is most likely to happen, and with what degree of certainty, under each option.

These biological questions, along with the social and economic issues surrounding drawdown need to be addressed in a regional forum so that the best possible recommendation can be made to Congress.

5. When does NMFS expect to have a recovery plan in place for listed salmon?

NMFS issued a draft Snake River Recovery Plan in March of 1995. We received thousands of pages of comments to be addressed by NMFS staff. We plan to publish a final version by October of 1997.

6. Is this recovery plan going to identify what will constitute "recovery" for each of the listed runs? If not, how will we know what the goal is for all these efforts and all this money?

The draft recovery plan contains recovery levels for listed stocks that were developed by a joint technical group that included scientists from NMFS, other federal agencies, the states and tribes. The final recovery plan will also include recovery levels.

7. You referred to the need, even with permanent drawdown of the lower Snake dams, for additional "good" water in the system. Can you define "good" water for the Subcommittee? How will this "good" water be obtained?

This was a reference to the continued need for flow augmentation. Please refer to the answer to question 3.

CRA
Columbia River Alliance
For Fish, Commerce and Communities

July 11, 1997

Honorable John T. Doolittle, Chair
Subcommittee on Water and Power
U.S. House of Representatives
Washington, D.C. 20515

Dear Representative Doolittle:

I would like to thank you for the opportunity to testify before the subcommittee during its hearing May 31, 1997, in Lewiston, Idaho. I am enclosing replies to the questions you sent to me June 20, 1997.

Your questions were as follows:

1) Has CRA engaged independent scientists to evaluate the effects of increased spill at the dams along the Columbia and Snake rivers? If so, what have they found?

2) Has CRA engaged independent scientists to evaluate the effects of flow augmentation in the Columbia and Snake rivers? If so, what have they found?

I hope you find this information helpful. If you have any further questions regarding my testimony or the salmon recovery issue, my members and I would be pleased to provide you information.

Kindest regards,

Bruce J. Lovelin

Bruce J. Lovelin
Executive Director

Enclosure

825 NE Multnomah, Suite 955 • Portland, Oregon 97232 • (503) 238-1540 • Fax (503) 238-1554

Response to First Question

CRA and its members have for several years engaged independent scientists to evaluate the effects of increased spill at the dams along the Columbia and Snake Rivers. Before discussing their findings, it is worth very briefly reviewing the background concerning adverse effects of spill.

Background

In the late 1960s and early 1970s, there were huge quantities of spill at federal projects on the Columbia and Snake River, primarily because all of the turbine units had not been put in yet. Large quantities of fish began showing up dead, with then-mysterious symptoms. Federal fish biologists, led by Dr. Wes Ebel at NMFS, began a crusade to identify the problem and cure it.

Laboratory experiments soon proved that salmon and steelhead were acutely sensitive to dissolved gas. Early experiments putting juvenile salmonids in water saturated at levels above 110 percent of normal, killed large proportions of the fish; results varied by species with steelhead being more susceptible than salmon.[1] The United States Environmental Protection Agency eventually established a national water quality criterion of 110 percent as the maximum allowable level of dissolved gas. One of the key considerations in establishing the standard was the effects on salmon.

CRA's Efforts to Promote Sound Spill Science

When Federal agencies began proposing significantly to increase spill on the Columbia and Snake Rivers, CRA members concerned with the cost of the program (upwards of $60 million annually) began interviewing retired or senior fishery managers, including Drs. Wes Ebel and Jerry Bouck, to find out what they thought about this program. They all objected.

Dr. Ebel advised us that dams were constructed to operate with limited spill, and were finely tuned over decades to attract as many fish as possible to the fish ladders. As a result, excessive spill generates currents that confuse the adults searching for the fish ladders. The adult salmon also tend to swim about laterally in the tailrace area where gas concentrations are highest before ascending the fish ladders.[2] As a BPA spokeman pointed out in 1997: "We have always found high spill to impede adult passage . . . [and since the vast majority of juveniles were avoiding turbines at lower spill levels] the status quo [of high spill] doesn't make a lot of sense."[3]

Dr. Ebel also tipped us off to a fundamental computational error in the State and Tribal calculation of Fish Passage Efficiency. The States and Tribes assumed a one-to-one relationship between the quantity of water spilled and the percentage of fish passing over the dam in that water. Thus, for example, they

would require a 40 percent increase in the amount of spill to credit dam operators for directing 40 percent more fish away from the turbines.

In fact, studies at Lower Granite Dam demonstrated that the relationship was not one-to-one. The first 20 percent of spill passed perhaps 40 percent of the fish; the first 40 percent, perhaps 60 percent of the fish. Studies at other projects have shown similar numbers. Some limited data from 1996 studies at The Dalles Dam indicates that increasing the percentage of spill from 30 percent to 64 percent produced no measurable change in the proportion of smolts passing over the spillway.[4]

By abandoning the one-to-one assumption, the quantity of spill could be reduced from the amounts assumed by the fisheries managers, and still meet the 80 percent Fish Passage Efficiency target established in NMFS's Biological Opinion. This would cost less, and cause less gas supersaturation. The fishery managers were (and are) not interested in using the Lower Granite and other data. They insisted on the one-to-one assumption. This was yet another position that convinced us that their real goal was to destroy the economics of the dams, rather than protect fish.

Dr. Bouck was moved to state that the Oregon Department of Environmental Quality "and those agencies and tribal representatives who propose raising the [total dissolved gas level] have inadequate specific training and experience with gas bubble disease and supersaturation to evaluate this highly specialized subject."[5]

David Owsley, of the U.S. Fish and Wildlife Service, and not yet retired, wrote a declaration saying that he was

> "aware that the increased drafts of Dworshak are supported by my employer and others on the belief that they may assist migrating juvenile Snake River fall chinook . . . [but t]he evidence to support this belief is at best equivocal [and t]here is every reason to believe that the recent increases in dissolved gas levels are more likely to injure the migrating threatened Snake River fall chinook than assist them."[6]

(He was later threatened with disciplinary action for his cooperation with CRA.)

CRA members also consulted Dr. Larry Fidler, a Canadian biologist who was involved in setting water quality standards for Canadian rivers. Dr. Fidler was sufficiently outraged by the proposal to set aside the 110 percent standard in 1995 that he wrote to Bob Baumgartner of the Oregon Department of Environmental Quality to warn that "with anadromous fish populations in their present state, it is possible that by allowing dissolved gas levels in these rivers to rise above the U.S. E.P.A. guideline, some populations might be lost entirely."[7]

CRA members also consulted Dr. Donald Weitkamp, who had published the leading literature review in the field, who voiced opinions consistent with those just discussed. And CRA members consulted Dr. James Anderson of the University of Washington, whose computer models of salmon survival consistently predicted decreased survival from increases in the spill program.[8]

CRA members also urged the National Marine Fisheries Service to use PIT-tag technology to to track the progress of each individual salmon downstream, dam by dam, and compute the percentage of release groups that survived spill. After NMFS refused, CRA members engaged the services of S. P. Cramer and Associates to conduct the PIT-tag analysis. Cramer and his analysts found that salmon mortality had increased sharply over the course of the 1995 spill program—coincident with widely-reported deaths of salmon in in net pens. He repeated the analysis in 1996, and found that the even larger spill program in 1996 had produced even lower survival:

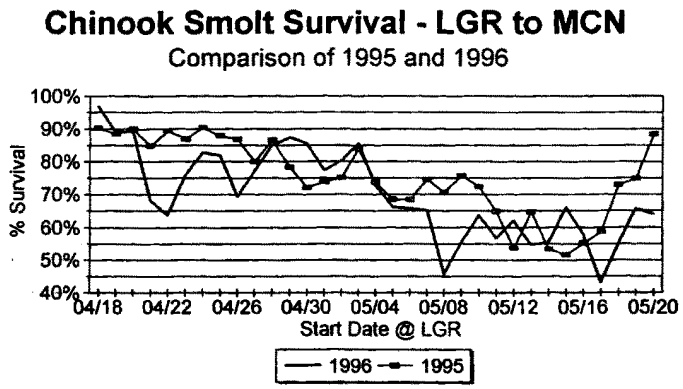

Figure 1: 1995 and 1996 In-River Survival, Lower Granite Dam to McNary Dam[9]

Response to Second Question

CRA and its members have for several years engaged independent scientists to evaluate the effects of flow augmentation in the Columbia and Snake Rivers. Before discussing their findings, it is worth briefly reviewing the background of the flow/survival hypothesis.

Background

In the late 1970s, biologists at NMFS began for the first time to estimate the survival of juvenile salmon migrating downstream. There were two seminal papers. The first, by Howard Raymond, used mark/recapture techniques to estimate survival for groups of juvenile chinook salmon and steelhead.[10] Later, Carl Sims and Frank Ossiander constructed a flow/survival relationship using that data.[11]

The flow/survival relationship that has molded fishery agency policy since then is based on seven flow/survival years from which the researchers drew a graph of the supposed relationship between river flow and the survival of juvenile salmon.

Early Flow/Survival Data

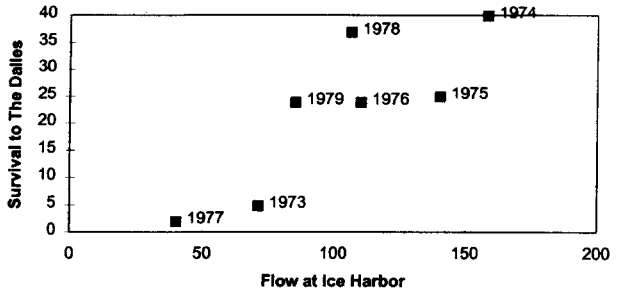

Figure 2: Early Correlations of Flow and Survival[12]

It is easy to see why the original researchers would draw a line to fit these points, deriving a mathematical relationship between flow and survival. The flow theorists, however, went much farther. They declared that if the dam operators would simply release water from upstream reservoirs, the survival of salmon

would improve, in amounts to be predicted by using the same mathematical relationship.

When NMFS scientists returned to re-examine the original data used by Raymond, Sims and Ossiander, they found an extraordinary "plasticity in survival estimates based on these techniques", and that if proper techniques were applied, the early estimates of survival were perhaps a factor of two too low.[13] Another researcher who studied the original data even more closely found the studies riddled with questionable assumptions, and pointed out that by comparing the original data on treatment and control group recovery rates, survival "exceeded 100 percent on 8 out of 22 occasions for fish traveling from the lower Snake River to Ice Harbor Dam".[14] Per project survival estimates were also skewed by a failure to count the number of dams correctly.

These scientists advised that conditions at the dams were far different during the 1970s. In particular, the two low flow/low survival years that provided most of the explanatory power in the flow survival curve—1973 and 1977—were years when poorly designed fish passage facilities (since improved) clogged with trash and descaled and ultimately killed the fish.[15] The NMFS scientists concluded that "the Sims and Ossiander (1981) flow/survival relationship developed from studies in the 1970s does not predict the current survival of spring-migrating juvenile chinook salmon, particularly those migrating under low flow conditions".[16] An independent reviewer concurred: "Fisheries managers, the public, and the fish themselves would be better served by data collected under present conditions using current technological and analytical techniques".[17]

Other, more recent pro-flow papers are flawed as well. For example, flow proponents and harvest agencies often cite a 1993 draft paper by Ray Hilborn in support of their claims that flow affects survival.[18] They fail to disclose that the draft was withdrawn for revision in light of criticism that "it did not examine spill, prevailing water temperature, degree of transportation . . . and may not have used suitable controls".[19] A new draft was never issued, but they continue to cite the defective draft. The same problems apply to the 1992 work of Idaho Fish and Game biologist Charles Petrosky, who oft-cited work ignored both spill and increasing numbers of turbines over the period of his study.[20]

CRA's Efforts to Promote Sound Science Concerning Flow Augmentation

At the request of CRA members, Drs. Don Chapman and Al Giorgi examined data on spring/summer chinook tagged in the Salmon River and detected at Lower Granite Dam and excluded periods of spill. Their conclusion: "Preliminary data from the 1993 smolt migration show no relationship between

detection rate [presumed to be a surrogate for survival] and either travel time or Snake River discharge . . ."[21]

On CRA's urging, the Oregon Department of Environmental Quality to require the National Marine Fisheries Service to make a statistical evaluation of the available PIT-tag data to determine week-by-week survival changes High variability in the daily estimates showed no correlation between survival, flow, or several other variables. When the data were "smoothed", "fairly strong negative correlations were found between survival and flow".[22] Real conclusions can't be drawn from such weak evidence, but these data are flatly contrary to assumed survival benefits from flow augmentation.

It is true that after spikes in river flow, more juvenile salmon are detected downstream at the dams. Below is a graph of Snake River flow in 1994 versus the number of juvenile salmon detected at Lower Granite Dam.

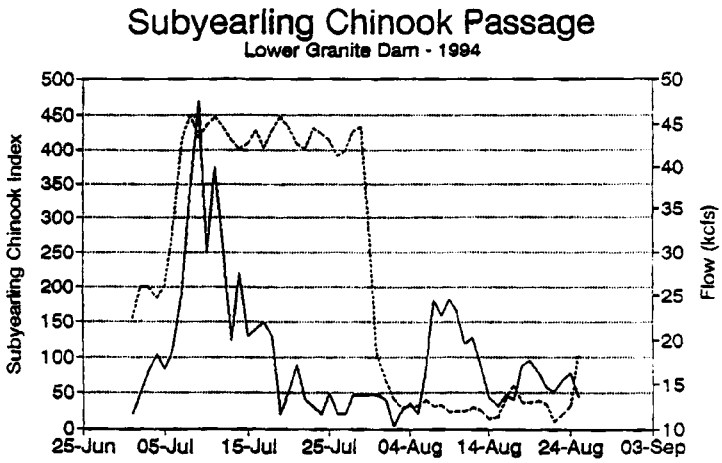

Figure 3: Flow and Juveniles Counts at Lower Granite (1994)[23]

The plateau of flow (dotted line) was caused by releases from Dworshak Reservoir. When flow rose rapidly, so did the numbers of salmon detected. When flow was high and flat, the number of detections dropped. It looks like most of the water after the first pulse was wasted—assuming that the first pulse really accomplished anything. And when flow drops sharply, as in August, the number of detections also rose. There is certainly some reason to believe that *changes* in flow may cause fish to move.

But this does not mean that increasing flows will have any measurable effect on the overall population of salmon. A reservoir release may be like blowing air at a tree full of robins: the robins will fly away, but that will not necessarily start flying south for the winter.

Most proponents of the importance of flow also believe that the dams have substantially lengthened the time it takes juvenile salmon to migrate to the sea, so that hundreds of thousands of smolts die in the river that would have made it to the sea. One particularly influential paper on this subject has asserted that juvenile stream-type salmon required 26 days to reach The Dalles from the Salmon River before construction of dams and 65 days after construction.[24]

At the request of CRA members, Dr. William McNeil, professor emeritus at Oregon State University, reviewed this research and determined it suffered from a critical flaw. The researchers compared marked groups of fish, *but they assumed that time of release had no effect on migration speed.*[25] Dr. McNeil examined the data and found that "early migrating juveniles move slowly and late migrating juveniles move rapidly. The correlation between migration speed and release date is consistently direct and highly significant . . . . The correlation between migration speed and stream discharge, on the other hand, is equivocal.".[26] Dr. McNeil notes that this result "contradicts the theory that migration is a passive behavior".[27]

Dr. McNeil has also determined that the time of passage for juvenile salmon populations migrating down the Columbia River "remained consistent among years for four species of stream-type and one species of ocean-type juvenile salmon *even though stream discharge fluctuated nearly two-fold annually.*"[28] In other words, just because flows are higher doesn't mean smolts move faster. Later in the year, they do move much faster, without regard to the flow.

CRA has also tried to get policymakers to understand the simple fact that getting juvenile salmon quickly out of the reservoirs to avoid reservoir predators is only helpful if the net effect is to reduce exposure to predators. If the density of predators is *lower* in the reservoirs than in the lower river and estuary, the survival per day may be *higher* in the reservoirs. Thus, as Dr. James Anderson and Richard Hinrichsen have pointed out in a paper funded by CRA members, it is conceivable that getting juveniles out of the reservoirs faster could even reduce overall salmon populations, especially if they wind up hitting the estuary at a time of especially high predation.[29]

There is no evidence that predator densities are higher in the reservoirs. In fact, the density of predators appears to be higher *below* Bonneville Dam than in the reservoirs above it. The National Research Council recently concluded

that "[t]here is some evidence that predators, such as northern squawfish, have increased in abundance in the lower Columbia River".[30]

CRA has also attempted to focus attention on the adverse effects of flow augmentation on adult salmon. Fishermen have long recognized that "[i]n order to conserve energy in their upstream passage, salmon tend to 'sound' or move to the bottom of the river where the current is not so strong, especially during the ebb tide and during periods of freshet".[31] Scientific studies confirm that the progress of returning adult salmon up the Columbia River is impeded by higher flows. Delays of up to several days at each dam from higher flows are well documented.

As Dr. William McNeil has explained,

> "Summer chinook and sockeye exhibit delayed passage time at high flow along with spring chinook. Sustained upstream movement against river currents and possible delays in locating ladders at dams places demands on finite energy reserves. Adult salmon fast during their spawning migration, and expended energy is not replaced. *Artificially increasing water velocity through flow augmentation and/or reservoir drawdown is likely to delay migration of spring and summer chinook and sockeye spawners.*"[32]

As Dr. McNeil points out, the adverse effects would be strongest on the endangered "Snake River spring chinook salmon which migrate the farthest distance from the ocean to reach spawning grounds".[33] Dr. McNeil suggests that "it remains to be determined whether prespawning survival is compromised" as a result of the delays".[34] Ironically, fishery agencies have long blamed the dams for delaying adults and causing salmon mortality, going so far as to claim that "[d]elays of three to four days often killed the fish".[35] The U.S. Army Corps of Engineers has estimated that some of the "natural river" drawdown plans under consideration would increase adult travel time from 10-30 percent.[36] If the fishery agencies were consistent, they would have to state drawdown would decimate adult salmon.

CRA and its members have supported efforts to develop better computer models that would allow a rational assessment of both positive and negative effects of flow augmentation, particularly on adults. Without some sort of quantitative model, assessing the relative magnitude of the two effects, policymakers can have no idea what the net effect will be. Unfortunately, State and Tribal fishery managers have blocked funding of the models, so policymakers must proceed in ignorance.

CRA members have also asked Dr. James Anderson to review the "FLUSH" computer model used by State and Tribal fisheries agencies to support demands for flow augmentation. He concluded that the assumptions that went

into it were wildly unrealistic. For example, one of the chief characteristics of the FLUSH model is that it predicts very great survival increases from fairly small increases in river flow, because it is based, in part, on the long-discredited Sims and Ossiander flow/survival relationships.[37] Dr. Anderson discovered that one way this was accomplished was by inserting a relationship under which, as flows increased and travel time decreased, survivals went above 100 percent—an impossibility.[38] (The FLUSH model is also hard-wired to assume that smolt transportation does not work.)

[1] *See generally*. D. Weitkamp & M. Katz, "A Review of Dissolved Gas Supersaturation Literature", *Trans. of the Am. Fish. Soc.* 109:659-702 (1980).

[2] NMFS, Biological Opinion on FCRPS Operations, Mar. 2, 1995, at 107.

[3] Quoted in B. Rudolph, "TMT Wrestles with Questions of Barging and Spill", *Cleaning Up*, May 19, 1997, at 9.

[4] Memo, J. Ruff to B. Hevlin, April 22, 1997, Attachment (3), at 1.

[5] Letter, G. Bouck to R. Baumgartner, Dec. 22, 1994, at 1.

[6] Declaration of David Owsley, July 19, 1994, ¶ 10, filed in Civ. No. 94-0030-N-EJL (D. Idaho).

[7] Letter, L. Fidler to R. Baumgartner, Jan. 9, 1995, at 1.

[8] *See, e.g.*, J. Anderson, "The Impacts of a Spill Program", Jan. 12, 1995.

[9] S. Cramer, "Seasonal Changes During 1996 in Survival of Yearling Chinook Smolts Through the Snake River as Estimated from Detections of PIT Tags", Aug. 1996, at 1 (Figure 1).

[10] H. Raymond, "Effects of Dams and Impoundments on migrations of juvenile chinook salmon and steelhead from the Snake River, 1966 to 1975", Trans. Am. Fish. Soc. 108:505-29 (1979).

[11] C. Sims & F. Ossiander, "Migrations of juvenile chinook and steelhead trout in the Snake River from 1973 to 1979, a research summary", Final Report to U.S. Army Corps of Engineers (NMFS N.W. Fish. Sci. Cent. 1981).

[12] Data from C. Steward, "Assessment of the Flow-Survival Relationship Obtained by Sims & Ossiander (1981) for Snake River Spring/Summer Chinook Salmon Smolts", Final Report, BPA Contract No. DE-AM79-93BP99654, at 5 (April 1994) (reprinting Sims & Ossiander's 1981 data).

[13] J. Williams & G. Matthews, "A review of flow/survival relationships for juvenile salmonids in the Columbia River Basin", manuscript submitted to *Fishery Bulletin* (NMFS CZESD March 1994), at 12.

[14] C. Steward, "Assessment of the Flow-Survival Relationship Obtained by Sims & Ossiander (1981) for Snake River Spring/Summer Chinook Salmon Smolts", Final Report, BPA Contract No. DE-AM79-93BP99654, at iv (April 1994)

[15] J. Williams & G. Matthews, "A review of flow/survival relationships for juvenile salmonids in the Columbia River Basin", manuscript submitted to *Fishery Bulletin* (NMFS CZESD March 1994), at 20.

[16] *Id.* at 24.

[17] C. Steward, "Assessment of the Flow-Survival Relationship Obtained by Sims & Ossiander (1981) for Snake River Spring/Summer Chinook Salmon Smolts", Final Report, BPA Contract No. DE-AM79-93BP99654, at vii (April 1994)

[18] R. Hilborn *et al.*, "The Relationship Between River Flow and Survival for Columbia River Chinook Salmon", U. Wash. Draft Report WH-10 (1993).

[19] D. Chapman & A. Giorgi, "Comments on Work of Biological and FCPRS Alternative Work Groups", at 10 n.8 (1994).

[20] D. Chapman & A. Giorgi, "Comments on National Marine Fisheries Service Draft Biological Opinion on FCRPS Operations", at 7 (1995).

[21] D. Chapman & A. Giorgi, "Comments on Work of Biological and FCPRS Alternative Work Groups", at 9 (1994).

[22] NMFS, 1996 Annual Report to the Oregon Department of Environmental Quality, Jan. 24, 1997, at 8.

[23] From K. Whitty, "Migration Responses of Juvenile Salmonids to Pulses in Flow" (Figure 3) (1994).

[24] H. Raymond, "Effects of dams and impoundments on migration of juvenile chinook salmon and steelhead from the Snake River, 1966 to 1975", *Trans. Am. Fish. Soc.* 108: 505-529 (1979).

[25] W. McNeil, "Water Velocity and Migration of Juvenile Chinook Salmon in the Columbia River", Sept. 26, 1994, at 5 (paper prepared for *Hydro Review*; later published).

[26] W. McNeil, "Water Velocity and Migration of Juvenile Chinook Salmon in the Columbia River", Sept. 26, 1994, at 6 (paper prepared for *Hydro Review*; later published).

[27] *Id.*

[28] *Id.* at 8.

[29] *See* J. Anderson & R. Hinrichson, "A Life History Approach to Managing the Columbia River Hydrosystem for the Benefit of Salmon Populations", Oct. 28, 1994, at 1-2.

[30] NRC, *Upstream* at 199 (Prepub. ed.).

[31] I. Martin, *Legacy and Testament: The Story of the Columbia River Gillnetters* 25 (WSU Press 1994).

[32] W. McNeil, "Timing of Passage of Adult Salmon and Steelhead at Columbia Basin Dams", May 17, 1993, at 6.

[33] *Id.* at 2.

[34] *Id.* at 6-7.

[35] J. Cone, *A Common Fate* 127 (citing unspecified assertions of the "Fisheries Service").

[36] U.S. Army Corps of Engineers, "Interim Status Report", at ES-13.

[37] J. Anderson, "FLUSH and PAM models: A critique of concepts and calibrations", Oct. 28, 1994.

[38] *Id.* Dr. Anderson informed me early in 1997 that the FLUSH modelers had revised the model so that it no longer predicts greater than 100 percent survival at high flows.

Idaho Water Users Association, Inc.

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June 27, 1997

Mr. John T. Doolittle
Chairman, Subcommittee on Water & Power
U.S. House of Representatives
Committee on Resources
Washington, D.C. 20515

Dear Mr. Doolittle:

I received your letter of June 20, 1997, with two additional questions regarding my testimony on impacts of drawdown proposals on Idaho and the Snake River system. It is my opinion that there would indeed continue to be impacts on Dworshak Dam and Reservoir since the primary usage for Dworshak water at this time is to lower summer river temperatures and eliminate the thermal block in the river. With permanent drawdown, the potential for higher temperatures in the river is escalated and I believe that the National Marine Fisheries Service would depend on Dworshak water to assist in the lowering of those temperatures. Additionally, depending upon the water year, it is not uncommon for southern Idaho to be locked in a drought while northern Idaho has at least an average or above average water year. Under that scenario, water perceived to be necessary to assist in smolt outmigration or adult returns for fall Chinook, in particular, would probably be taken from Dworshak rather than southern Idaho water supplies.

The second question was even if the four lower Snake dams are not drawn down, could the Port of Lewiston survive if there is a deep drawdown of John Day Dam? Assuming that the deep drawdown of John Day Dam was a permanent drawdown, certainly the Port of Lewiston would be eliminated. All barging traffic must come through the John Day pool to reach the Port of Lewiston. Eliminating their ability to move through the John Day pool would be as devastating to the economy of Lewiston as initiating a permanent drawdown of the four lower Snake River reservoirs. While the City of Lewiston may survive such an impact, certainly the Port would not.

Mr. Chairman, thank you for the opportunity to respond in writing to these additional questions and appreciate your effort to understand the regional issues that affect us so greatly.

Respectfully submitted,

Sheri L. Chapman
Executive Director

SLC:kje

UEC UMATILLA ELECTRIC COOPERATIVE
"Dedicated to providing quality service to our members."

July 9, 1997

The Honorable John T. Doolittle
Chairman
Subcommittee on Water & Power
U.S. House of Representatives
Washington, D.C. 20515

Dear Congressman Doolittle:

Thank you for the opportunity to respond to the questions contained in your letter of June 20, 1997.

Q. What would be the revenue impacts for BPA of derating the AC-DC intertie year round?

A. Since the amount of energy available from the Northwest to California is dependent on the amount of water in the Columbia/Snake River system as well as load requirements at both ends of the intertie, the size of revenue impacts to BPA from intertie derating is highly speculative. If the intertie derating is modest, probably there is no impact near term because full capacity of the intertie is needed so infrequently. If the derating of the intertie is significant enough to strand generation in the Northwest, BPA revenues are impacted by reduced energy sales to California, fewer transmission transactions and lower energy prices in the Northwest because of over supply. I do not believe we can say with much certainty what the revenue impacts to BPA are from intertie derating at this time.

Q. There are some drawdown proponents who say that electricity conservation could replace the power lost if the lower Snake and John Day drawdowns were implemented. Is this realistic? How much has been saved in the region by conservation measures over the past 10 years?

A. Physically, a kilowatt saved is equal to a kilowatt generated. Operationally, a conserved kilowatt probably does not equal a hydrogenerated kilowatt. The conserved kilowatt may not be available when needed, it does not bolster voltage or provide reactive support as generation does. Conserved energy most likely will not provide the same instantaneous capacity and load following that hydrogeneration does. The amount of hydrogeneration capacity lost from a lower Snake and John Day Dams drawdown range from 46,000 MW to 5,963 MW. Since passage of the Northwest Power Act, the region has aggressively pursued conservation to avoid constructing new generating resources. The BPA Red Book reports that between 1982 and 1995 the Northwest invested $1.6 billion in energy conservation from all sectors including building codes. For this investment the region netted 580 MWa at approximately 40 mills per kilowatt hour (Northwest Power Planning Council says 724 MW, all utilities public & private 1976-1996 1066 MW). New combustion turbines can be brought on line for about 25 mills per kilowatt hour. There is no way for current or future conservation measures to replace the power that would be lost either at John Day or the lower Snake River Dams.

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Q. Are customers going to be willing to sign up for long-term contracts for power after 2001 if BPA's costs aren't stable?

A. The definition of long term may presently be five years and stable costs may mean stable prices or stable costs may mean tightly-defined changes during the contract's term. In any event, without adequate definition to power-supply prices over the term of a power supply contract, customers will not sign up for any period--short or long term. As you know customers are currently working with BPA to establish a procedure--called a "subscription process"--that will identify future products BPA will offer, and how customers will sign up for them. Customers are making two important points. First, to the extent BPA offers a fixed price product (for up to five years), the fixed price may be attractive if it is relatively competitive with other options. Second, customers may agree to sign contracts longer than five years which extended beyond the period of fixed rates, if any adjustments to future costs are prescribed and limited in advance by formulas in the contract. For example, an adjustment for inflation may be acceptable, but adding new programs or expanding fish expenses beyond what is provided in the contract would be prohibited. BPA adding a prohibited cost increase would be grounds for contract termination by the customer. Thus, BPA has to come up with stable costs for both the short and long term. It is commonly acknowledged within public power, the direct service industries and the Northwest IOUs that customers are unwilling to make longer term commitments if costs aren't stable. Power supply contracts must allow off ramps for wholesale customers and end-use customer charges should reregulation mandate retail customer choice during the term of a power sales contract.

Rep. Doolittle, you and your colleagues could go far toward more certain answers to your questions by reducing the uncertainty surrounding Environmental Species Act listings, federal usurpation of state authorities and mandated retail access. Thank you for your interest.

Sincerely,

Steve Eldrige

M. Steven Eldrige
General Manager

MSE/gd

Charles Ray, Idaho Rivers United

Questions from Mr. Doolittle

You refer to the historic salmon stocks as "representing 300 million pounds of virtually free protein coming back from the sea every year." Do you think the salmon were not valued because they were free? Should those who will benefit from salmon recovery share in the cost of that recovery?

Isn't it true that the initial drawdown of the lower Snake River dams is expected to cause severe erosion and water quality problems? It is also expected to create high turbidities for extended periods, and will result in additional contaminant concentrations behind McNary Dam. Has Idaho Rivers United factored these environmental impacts in the development of its position?

Questions from Mr. Miller

Your written testimony refers to subsidies both to the hydropower system and to the navigation system on the Snake River, and particularly to the Port of Lewiston. Please itemize these subsidies.

Charles Ray, Idaho Rivers United

Response to Questions

Questions from Mr. Doolittle

1) Salmon have always been highly valued by most segments of the population. Native Americans revered the salmon, both as a food source and as a religious icon. As early as the mid-1800's, commercial salmon fishing was a tremendously valuable industry on the Columbia River. As recently as 1985, the entire west coast salmon fishery had a value of $ 1 billion annually and supported over 60,000 jobs. A salmon fishery is particularly valuable to small businesses in small rural communities such as Riggins, Idaho. In 1994, an 8-day salmon fishing season for 500 surplus hatchery salmon on a 3 mile section of river generated over $250,000 in economic benefit for Riggins, a rural community of 400 people.

Besides the obvious economic value of salmon, the fish are very valuable as the fuel that drives entire aquatic ecosystems as far inland as 1000 miles and up to 7000 feet in elevation. After returning inland and spawning, adult salmon and steelhead die. Their bodies contain many pounds of ocean-derived protein and nutrients. As the carcasses decompose, these nutrients are made available in food webs where such nutrients are commonly in deficit. Thus, salmon and steelhead are a valuable and essential food source for organisms ranging from single-celled creatures throughout the food web to the top carnivores such as grizzly bears and humans.

The value of salmon was given short shrift by the boosters of the lower Snake River dams. To my knowledge, the immense economic and ecological loss made certain by the construction of these dams was never revealed in benefit/cost analyses presented to Congress at the time of debate over the authorization of these dams. Such omission is still common today. Everyone wants to look at the cost of restoring salmon and steelhead, but hardly anyone wants to look at the economic and ecological loss represented by the loss of the fish, or the economic benefit to be realized by the restoration of the fish.

2) I think the individuals, cultures, and economies that have suffered the loss of healthy, self-sustaining, fishable populations of salmon and steelhead have already paid a tremendous price . The U.S. government made promises dating back to 1855 to save and restore the fish and the dependent economies. The victims of the failure to keep those promises have already paid and should not have to pay again.

3) A natural river drawdown of the lower Snake River reservoirs is expected to produce some short-term turbidity. The potential effects are currently being analyzed by the Corps of Engineers in their System Configuration Studies analysis. At this time, no one has presented any evidence showing that turbidity would increase or persist to a degree that would preclude a natural river drawdown. As for contamination of sediments at the bottom of lower Snake River reservoirs, if that is the case, Idaho Rivers United would be very interested in learning of the source for such contamination. The states of Idaho, Washington, and Oregon, and the EPA are responsible for assuring that discharges into the Snake River meet applicable water quality standards and do not result in accumulation of contaminated sediments.

Question from Mr. Miller

The subsidies enjoyed by users of the hydropower portion of the Snake/Columbia hydropower/navigation/irrigation system are examined in this committee's report by the task force on the Bonneville Power Administration, 1994, and incorporated by reference in its entirety in my testimony.

A listing of subsidies enjoyed by users of the navigation portion of the system is attached.

Columbia/Snake Inland Waterway

Who pays for this waterway?

	Waterway Costs	Paid by Waterway User fees	Paid by the public[6]
8 dams and locks[1]	$426,721,000	0	$426,721,000
Dredging the shipping channel[2]	8,000,000	0	8,000,000
Replace broken Ice harbor lock gate[3]	7,500,000	0	7,500,000
Operation and Maintenance[4]	9,134,000	0	9,134,000
Salmon-loss mittigation-			
Lower Snake River Compensation[3] (hatcheries)1996	8,000,000	0	8,000,000
Columbia River Juvenile Fish[3] for 1996	52,000,000	0	52,000,000
New Bonneville lock(1993)[5]	329,000,000	(a)	164,500,000

1. source: Bonneville Power Administration Financial Summary, 1991. These costs are listed on page 35 as "Nonreimbursable-Navigation" Allocations for plant Investment.

2. Budget of the United States Government, Fiscal Year 1993, Appendix One, pg. 411

3. Synopsis of the Walla Walla District 1996 budget, Corps of Engineers

4. A Congressional Budget Office Study, May 1992 "Paying for Highways, Airways, and Waterways: How Can Users Be Charged?" page 55

5. 1992 The Great Waterway, The Columbia Snake River System, page 53

6. Paid for by the public with U.S. Treasury funds through the U.S. Army Corps of Engineers

(a) 50% of the new Bonneville lock was funded by the Inland Waterways Trust Fund. Receipts from the Columbia Snake from the Inland Waterways Fuel Tax have never exceeded $507,000, the receipts for 1994(estimate based upon ton/miles). The U.S. Treasury funded the other 50%.

The Inland Waterway that enables Lewiston to be a seaport 465 miles inland from the Pacific Ocean burdens the public with numerous costs. Listed below are examples of these costs.

Federal Capital costs

$426,721,000 for the navigation portion of the 8 dams and locks

$329,000,000 for the new Bonneville lock completed in 1993. 50%federal contribution and 50% from the Inland Waterways Trust Fund

Federal Costs- occasional

$8,000,000 dredging the shipping channel in 1993

$7,500,000 Repair the broken Ice Harbor lock gate 1996

Federal annual expenses

$1,000,000 (approximately) per dam for O & M

Local annual tax contributions

$553,600 Nez Perce County funds given to Port of Lewiston

$31,700 given by city of Lewiston to help fund the Port of Lewiston

Amounts vary "Tax and Grant support to Ports"

Salmon mitigation (examples) Annual Expenses

$12,371,260 U.S. Fish and Wildlife Service budget 1996 for Lower Snake River Compensation Act activities

$52,000,000 in 1996 Walla Walla District, Army Corps of Engineers for Columbia River Juvenile Fish Program

$8,000,000 in 1996 for Walla Walla District Corps of Engineers for Lower Snake River Compensation Act activities

Sheet1

TAX & GRANT SUPPORT TO PORTS	
1994	Property Tax
Idaho	
Lewiston	$522,000
Washington	
Kennewick	$160,300
Benton	$728,739
Camas Washougal	$512,053
Columbia	$73,482
Pasco	$589,940
Garfield	
Klickitat	
Skamania County (1992)	$84,747
Walla Walla	$725,304
Whitman County	$517,540
Vancouver (1/3)	$1,174,158
Clarkston	$180,000
Oregon	
Portland (1/3)	$2,393,271
Arlington	$131,305
Cascade Locks	$0
Hood River	$27,739
Morrow	$61,629
Dalles	$125,441
Umatilla	$0
TOTAL	$8,007,648
Snake Only Total	$1,293,022
Note: One third of Portland/Vancouver subsidy included,	
plus all of ports above and none below.	
Sources:	
Oregon Secretary of State	
Port of Lewiston	
Washington State Auditor	