



# *Conservation of Columbia Basin Fish*

Final Basinwide Salmon Recovery Strategy  
*Volume 3*

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## Regional Coordination and Public Involvement



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Final Basinwide Salmon Recovery Strategy

*Volume 3: Regional Coordination  
and Public Involvement*

December 2000

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**The Federal Caucus**

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Bureau of Reclamation  
Environmental Protection Agency  
Fish and Wildlife Service  
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CONSERVATION OF COLUMBIA BASIN FISH  
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## State and Tribal Discussions

### 1.1 States

On July 27, 2000 the Federal Caucus released the *Draft Basin-wide Salmon Recovery Strategy* to Alaska, Idaho, Montana, Oregon and Washington for technical review and comment. During the review period the Federal Caucus met with representatives from Oregon (October 6, 2000), Idaho (October 13, 2000) and Montana (October 16, 2000) to openly discuss outstanding issues. Informal meetings were also held with representatives from Washington State.

Written comments were received by the Federal Caucus from the states of Alaska, Idaho, Montana, Oregon, and Washington during the review period. The Caucus also received a set of recommendations jointly submitted by the governors of the four Northwest states in July 2000.

This document does not respond to each comment received point by point. Instead, the nature of the comments received is summarized below. Many of the comments received addressed both NMFS' draft FCRPS biological opinion, and the draft Strategy. This section deals only with comments received on the draft Strategy. Comments directed to the biological opinion are addressed in that document. The Federal Caucus will respond individually to each state through official correspondence following publication of the final Strategy.

#### *Four Governors' Recommendations*

The governors' recommendations to the region and the federal agencies are an important and valuable contribution to the public's dialogue on salmon recovery. After reviewing these recommendations, the Caucus concludes there is a high degree of policy consistency between governors' approach and the Strategy.

The governors' recommendations and the Strategy are organized in a very similar fashion. The recommendations begin with a statement of the importance of clear goals, objectives, and performance standards, and offer advice on each. The recommendations then cover each "H" in the following order: habitat, hydro, harvest, and hatcheries. They conclude with by emphasizing the importance of funding, accountability, and reaching agreement on a coordinated approach between state and federal authorities in consultation with tribal governments.

The Federal Caucus agrees with the governors on the importance of clear goals and objectives. The Strategy begins with a set of goals and objectives that are based on the roles and responsibilities of the agencies involved. These are listed in section 2.1 of the Strategy. In addition, the Caucus agrees on the importance of performance standards. The Strategy establishes a process for setting interim performance standards on programmatic, institutional, and ecological bases. It also commits the federal agencies to developing the ability to set quantitative performance standards in each life stage over time. The Strategy addresses these issues throughout volume one. The monitoring and evaluation program will be critical to success; Sections 2.2.11 of Volume 1 and 7.0 of Volume 2 have been substantially refined in the final document to account for this fact.

## *Habitat Issues*

For habitat issues, the governors' recommendations focused on the need for more direct state-federal partnerships, water issues, locally driven recovery planning, fish passage, estuary conditions, predation, ocean conditions, and federal land management in the Columbia Basin. Fish passage and ocean conditions are not explicitly addressed in the Strategy because they are extensively treated in the FCRPS biological opinion. However, the monitoring and evaluation program is designed to account for the role of ocean conditions in salmon and steelhead productivity. In addition, the hydropower policies and actions contained in the biological opinion, including fish passage issues, are described in Volume 1, Section 3.7 and Volume 2, Section 4 of this document.

The Federal Caucus agrees with the general thrust of the governors' approach. While the question of a single federal entity to ensure federal-state coordination is not addressed by the Strategy, the Caucus places a heavy emphasis on coordination both within the federal government and, between federal agencies, states, tribes, and local governments. These issues are addressed in Section 2.0 of Volume 1.

With respect to water issues, the recommendations are substantively consistent with the Strategy. Section 1 of Volume 2 in the Strategy explores water issues in some detail, while Section 3.1 of Volume 1 assign lead agencies among federal agencies and timetables for moving ahead with various elements of the program. The Strategy does not contain a specific budget for implementing all facets of the program; agency funding is subject to the annual federal budget process involving the administration and Congress. However, the agencies of the Federal Caucus are committed to proposing budgets that will be sufficient to implement the program successfully, including the provision of resources where appropriate to facilitate non-federal participation.

Locally driven recovery efforts are critical to success. Unless there is strong public support for planning and implementing recovery initiatives at the watershed level, our collective prospects for recovering listed species are dim. The final Strategy reflects the Council's most recent action to amend its Fish and Wildlife Program. Furthermore, it contemplates relying on the Council program as a framework for accomplishing ESA goals in concert with other regional priorities. The Caucus does not intend the Strategy to duplicate ongoing initiatives by the Council, individual states, or local entities. Rather, the Strategy hopes to complement and build upon existing successful efforts. The relationship between the Strategy and the Council program is discussed in Section 2.0 of Volume 1. The implementation plan described there and in Section 6 of Volume 2 are intended to help create durable linkages between ESA initiatives, the Council's program, and state and local efforts emphasized in the governors' recommendations.

The Federal Caucus agrees with the governors' emphasis of the National Estuary Program, and views the Lower Columbia River Estuary Plan as the key structure for achieving biological improvements for fish in the estuary. This is discussed extensively in both Section 3.1 of Volume 1 and Section 1 of Volume 2.

Predation is one of many significant factors contributing to the decline of salmon and steelhead in the Columbia Basin. The Federal Caucus agrees with the governors that a comprehensive avian predation plan is needed in order to minimize the adverse effects of bird predation on listed fish. Section 3.1 of Volume 1 establishes lead agencies and timetables for developing this plan. Predation is also addressed in Section 1 of Volume 2.

The governors correctly point out the importance of managing federal lands for listed species. The Strategy assumes that a long-term comprehensive management strategy for federal lands will be implemented, and will yield improvements for salmon and steelhead. This is discussed extensively in both Section 3.1 of Volume 1 and Section 1 of Volume 2.

### *Hydropower Issues*

The governors' recommendations address capital improvements at the dams, juvenile fish transportation, flow, and spill. These issues are comprehensively addressed by NMFS' FCRPS biological opinion. The Federal Caucus believes the content of the biological opinion is fundamentally consistent with the manner in which the governors treated these issues. The hydropower policies and actions contained in the biological opinion are described in Section 3.7 of Volume 1 and Section 4 of Volume 2.

### *Harvest Issues*

The governors' recommendations address ocean harvest, in-river harvest, terminal fisheries, law enforcement, and competitor species. The governors correctly point out that significant progress has been made reducing harvest of listed fish. In general, the recommendations suggest policies and actions to reduce harvest on listed fish that are also contained in the Strategy. These include selective and terminal fishing, license buy-back, and experimental gear as examples. Subject to upholding its trust and treaty obligations, the Federal Caucus agrees it is appropriate to consider such initiatives. However, to the extent they would effect tribal fisheries of any sort, such measures would have to be developed within the context of U.S. vs. Oregon. Harvest issues are discussed in Section 3.3 of Volume 1, and in Section 2.0 of Volume 2.

### *Hatchery Issues*

The governors' recommendations address the need for reforms as suggested by the Artificial Production Review (APR), call for a comprehensive production plan for the basin, and marking of hatchery-origin fish. The Federal Caucus supports the reforms contemplated by the artificial production review. The Strategy is designed to put the policies enumerated therein into practice through specific management actions. The principle tool of doing so is a Hatchery and Genetic Management Plan (HGMP). The Strategy contemplates HGMPs being approved for each hatchery in the basin to ensure the artificial production is carried out in a manner that is complementary to the needs of wild fish. The HGMP process is described in Section 3.5 of

Volume 1, and Section 3.0 of Volume 2. This approach is designed, among other things, to respond to call for reforms in the APR.

Interaction between wild and hatchery-origin fish is one of the major areas of scientific uncertainty hanging over this debate. Another is the comparative performance each in terms of survival and reproduction. The monitoring and evaluation program will be critical to unraveling these mysteries and sharpening understanding of the contribution hatcheries can make to recovery. With respect to mass marking, the Strategy contemplates an aggressive marking program to provide the means for monitoring and also to facilitate the efforts envisioned in the harvest program.

### **Alaska Comments**

The State of Alaska Department of Fish and Game provided comments on the NMFS draft biological opinion on the hydropower system. However, Alaska did not comment directly on the Strategy. In general, Alaska associated itself with comments from the Oregon Department of Fish and Wildlife.

### **Idaho Comments**

The State of Idaho prepared extensive comments on the biological opinions and the Strategy. Those focused on the Strategy support the general thrust of the approach, but question some of the specific elements. Idaho organized its comments, summarized below, by starting with general comments and then making specific comments on each H.

#### *General Comments*

Idaho's general comments focus on the consideration of human factors, the Strategy's scientific principles, and implementation issues. Idaho suggests that human factors, including social and cultural costs, should be considered when determining which recovery measures to pursue under the Strategy. It also calls for the application of science to salmon recovery more fully reflect the full range of impacts on listed species, singling out ocean conditions as an example.

The Federal Caucus generally agrees with the comments. In Volume 1 of the Strategy, the Introduction and Goals and Objectives sections discuss the importance of considering and mitigating for economic costs that might result from various aspects of the Strategy. The revised monitoring and evaluation program described in Section 2.2.11 of Volume 1 contemplates including ocean and climate conditions in future analyses. In addition, Sections 5 and 7 of Volume 2 contain discussions of the effects of ocean and climate conditions, as well as a more detailed technical description of monitoring and evaluation framework with which the federal agencies will work. Finally, the implementation of the Strategy is described fully in Section 2.2 of Volume 1, and a copy of a Memorandum of Understanding which formally commits the agencies to implementing the Strategy is in Section 6 of Volume 2.



### *Habitat Comments*

Idaho provided lengthy comments on habitat issues. One of the primary themes of these comments was the importance of developing habitat strategies for ESA in Idaho that rely on voluntary initiatives and incentives which vest Idaho citizens in the results of the overall effort. The Federal Caucus generally agrees with this theme. In light of the complex web of treaties and laws in which the federal agencies work, the Caucus has endeavored to develop a habitat strategy that complements and builds upon existing efforts and processes underway in the region. Section 1.3, the Strategy's rationale, describes the manner in which basinwide ESA-related planning activities would be linked to efforts underway or being planned at the local watershed level. Section 2.2, Implementation, describes how the Caucus will work to coordinate its efforts with the Northwest Power Planning Council, individual states, tribes, and local agencies.

By linking with the subbasin assessment and planning process that is the basis of the Council's amended Fish and Wildlife Program, the Federal Caucus believes it will be able to achieve efficiencies in applying ESA and engender public support within the states of the basinwide effort. The assessment protocols endorsed by the Council were jointly developed by federal, state, and tribal staff, and should form the analytical framework to support ESU-specific recovery planning as well as the Fish and Wildlife Program. Enabling federal, state, tribal, and private resource managers to work within a common analytical framework should reduce the amount of disagreement over recovery measures. These issues are discussed in the habitat and monitoring elements of Volume 2.

Idaho's comments included a lengthy presentation of state and local initiatives underway in the Salmon and Clearwater basins that underscore the local involvement theme. The comments also address screening, predators, water quality, land management, and estuary and ocean conditions. The comments include specific strategies for each of these categories. While the Federal Caucus agencies have not thoroughly reviewed each strategy proposed by the state, an initial reading suggests there is substantial consistency between them and the Caucus' Strategy.

### *Harvest Comments*

Idaho suggests that harvest management should be responsive to the needs of listed stocks, which should include changing current practices. Specifically, Idaho recommends ceasing all harvest of listed stocks until they have been restored. While the Federal Caucus generally agrees with the importance of basing harvest policy on the biology of listed stocks, the Strategy does not call for eliminating all harvest on such species.

The Caucus notes that in recent years, through a combination of treaty actions, conservative state practices, and reductions in river harvest, incidental take of listed salmon and steelhead through harvest has been dramatically reduced. For many ESUs, it has been eliminated altogether. This said, throughout the Strategy, the Federal Caucus emphasizes the importance of treaty rights and treaty fisheries. The responsibilities of the federal government under treaties that have been ratified by Congress and upheld by the U.S. Supreme Court simply do not permit

the elimination of all harvest of listed species when it is not biologically necessary. These issues are reflected throughout the Strategy, in Section 1.1, Goals and Objectives, Section 2.2, Implementation, Section 3.3, Harvest Actions, and in the harvest element of Volume 2.

Idaho's comments address treaty harvest issues, tribal and non-tribal fishing practices within Idaho, a conceptual "fish bank" that would promote annual harvest reductions with financial incentives, and ocean harvest issues. As with the habitat comments, the harvest comments include a list of specific recommended strategies.

While the Federal Caucus has not reviewed each recommendation, there is consistency between many of the actions proposed by Idaho and those contained in the Strategy. However, as mentioned above there are several with which the Federal Caucus cannot agree.

#### *Hatchery Comments*

Idaho provides comments on hatchery issues generally, and on specific production initiatives. The Federal Caucus believes Idaho's general comments on hatchery policy are consistent with the Strategy. While Idaho's comments do not specifically mention the use of hatchery and genetic management plans (HGMP), they do recognize the framework for reform established by the Council's Artificial Propagation Review. The specific hatchery initiative proposed by Idaho will have to be addressed through the development of HGMPs during implementation of the Strategy. This approach is described in Section 1.3, Rationale, Section 3.5, Hatchery Actions, and the Hatchery Element of Volume 2.

#### *Hydropower Comments*

Idaho provided lengthy comments on hydropower, including the scientific basis for flow augmentation and the importance of further improving survival at the dams. Idaho calls for deployment of the full range of passage improvements at the four Lower Snake River dams, as well as subjecting flow augmentation to the requirements of state law. Idaho also calls for continuing trucking and barging, and installing minimum gap runner turbines as existing turbines are retired over time.

The Federal Caucus generally agrees with the importance Idaho places on securing additional survival improvements within the hydropower system. However, the flow issues are the subject of ongoing negotiations and are, as yet, unresolved for the long term. Flow issues and the extent to which passage improvements are to be pursued at the Lower Snake River dams are covered extensively in the FCRPS biological opinion issued by NMFS in December 2000.

#### **Oregon Comments**

Oregon provided substantial comments from several state agencies, including the departments of Environmental Quality, Agriculture, Water Resources, and Fish and Wildlife. The comments addressed both the Strategy and the NMFS FCRPS biological opinion. In general, Oregon does not support the approaches outlined in the Strategy, believing instead that

more aggressive measures are needed to achieve recovery. While the Federal Caucus does not necessarily agree with Oregon on all points, the Strategy addresses the uncertainties associated with its conclusions squarely in Section 1.3 of Volume 1. Further, the Strategy specifies contingencies to be followed in the event performance standards are not met throughout the document.

Comments from the departments of Environmental Quality and Fish & Wildlife focus primarily on the NMFS biological opinion. Comments from the departments of Agriculture and Water Resources concern matters addressed by the Strategy. The latter comments are summarized here.

Comments from the Oregon Department of Agriculture provide important guidance on the most effect methods to achieve additional salmon protections in connection with agricultural activities. They emphasize the importance of partnerships, performance standards, technical assistance, and funding for measures. The Federal Caucus generally agrees with the suggestions. They are reflected in the Strategy's approach to basinwide planning and its linkages to the Council program and watershed-level activities underway or being planned at the local level.

The Department of Water Resources strongly urges that the states have a primary role in stream flow issues, given their considerable experience and expertise in dealing with issues on a local or watershed basis. The comments emphasize the state's ability to ensure that flow measures are durable and lasting, given the mechanisms it has established already. The Strategy's approach to flow issues in the tributaries is highlighted in Section 3.1 and fully described in the Habitat Element of Volume 2.

### **Montana Comments**

Montana provided comments on the Fish and Wildlife Service biological opinion of the FCRPS, but did not offer comments specifically on the Strategy. These comments focused substantially on operations of the Libby and Hungry Horse reservoirs, and on decision-making by NMFS and USFWS. The comments also requested further consultations with the federal agencies prior to release of the final biological opinions. These consultations took place during October 2000.

### **Washington Comments**

Washington provided comments on the Strategy and the biological opinions. Several agencies of state government provided comments, and the governor's office drafted overview comments characterizing the state's primary concerns.

The overview comments address the following issues: federal delegation of ESA responsibility, federal-state partnerships, funding issues, hydropower issues, water quality, consistent ESA standards, harvest, hatcheries, and energy policy issues. Through the presentation of these issues, the Federal Caucus sees some common threads and some areas of potential disagreement.

The most serious issue relates to the Strategy's preferred means of ESA planning on a basinwide level. The comments suggest the federal agencies have delegated ESA responsibility to the Council by endorsing the subbasin assessment and planning initiative in the Fish and Wildlife Program. The Federal Caucus disagrees with this comment for several reasons. The responsibility for implementing ESA and the accountability for decisions pursuant thereto rests solely with NMFS and USFWS. This will be the case regardless of whether the Strategy has linkages with the Council's Fish and Wildlife Program. Further, there are 12 ESUs listed throughout the basin, touching five states, at least 13 tribes, no fewer than nine federal agencies' jurisdictions, and untold numbers of counties and local agencies. Given the sheer magnitude of the planning effort necessary to pursue effective recovery strategies, there is a very real need for a basinwide framework. There is a need to reconcile disputes and inconsistencies relative to data management, assessment techniques, and planning. Just as importantly, there is a need to achieve some efficiencies in this process given the overall scarcity of resources available with which to attack the problem.

The purpose of the Strategy's emphasis on subbasin assessment and planning is to respond to these needs and build upon efforts either underway or being planned at the watershed level. Section 1.3, Rationale, spells out the manner in which subbasin assessments and recovery planning will link with efforts underway within states and at the local level.

The Federal Caucus believes most of the other issues raised in Washington's overview comments are consistent with the Strategy. The planning process prescribed in the FCRPS biological opinion issued by NMFS in December 2000 will respond to many of the funding issues raised. Section 2.2.11, Monitoring and Evaluation, and the biological opinion address research and monitoring issues. The other hydropower issues have been clarified. Water quality is addressed substantially in the biological opinion and the Strategy. The Goals and Objectives in Section 1.1 clearly state that achieving water quality compliance is a key element of the recovery strategy. The Habitat and Hydropower Elements in Volume 2 expand on this view. The hatchery and harvest issues outlined in the overview are largely consistent with the strategy, and have been revised in a manner that reflects the issues raised.

## **1.2 Tribes**

### **Federal and Tribal Meetings**

Prior to releasing the *Draft Basin-wide Salmon Recovery Strategy* to tribes for technical review and comment on July 27, 2000, the Federal Caucus agencies met with Columbia Basin tribes to discuss issues and concerns. Those meetings and discussions were held as listed below in Table 1.

After the July 27, 2000 release of the Strategy, the Federal Caucus met with Columbia Basin tribes as listed in Table 2. The Umatilla and Nez Perce tribes declined the Caucus' offer for technical or policy level meetings during the review period, but are willing to meet at a later date. The Kalispell Tribe and Confederate Salish and Kootenai Tribe were invited to the

September 22, 2000 and November 8, 2000 meetings but were unable to attend in person or by phone.

The purposes of these meetings were to:

1. Discuss technical details;
2. Prepare for policy level meetings between tribal and federal government representatives; and,
3. Discuss issues and concerns of tribal governments.

**Table 1 Listing of Federal and Tribal Policy Discussions prior to July 27, 2000**

<b>Date</b>	<b>Location &amp; Format</b>	<b>Tribal Attendance</b>	<b>Agency Attendance</b>
March 14, 2000	Lewiston, Idaho meeting	<ul style="list-style-type: none"> <li>• Nez Perce</li> <li>• Umatilla</li> <li>• Warm Springs</li> <li>• Yakama</li> </ul>	BPA, NMFS, COE, BOR, EPA, USFWS, BIA, BLM, DOJ, DOI
March 24, 2000	Spokane, Washington meeting	<ul style="list-style-type: none"> <li>• Burns Paiute</li> <li>• Coeur d'Alene</li> <li>• Colville</li> <li>• Kalispell</li> <li>• Shoshone-Paiute</li> <li>• Shoshone Bannock</li> <li>• Kootenai</li> <li>• Confederated Salish &amp; Kootenai</li> <li>• Spokane</li> </ul>	BPA, NMFS, COE, BOR, EPA, USFWS, BIA
April 3, 2000	Portland, Oregon meeting	<ul style="list-style-type: none"> <li>• Nez Perce</li> <li>• Umatilla Tribe</li> <li>• Warm Springs</li> <li>• Yakama</li> </ul>	BPA, NMFS, COE, BOR, EPA, USFWS, BLM-Spokane District Manager, and USFS
April 4, 2000	Boise, Idaho meeting	<ul style="list-style-type: none"> <li>• Burns Paiute</li> <li>• Coeur d'Alene</li> <li>• Colville</li> <li>• Kootenai</li> <li>• Shoshone-Paiute</li> <li>• Shoshone Bannock</li> <li>• Spokane</li> </ul>	BPA, NMFS, COE, BOR, EPA, USFWS, BIA, and BLM
April 25, 2000	Washington, DC meeting	13 Columbia River Basin Tribes	NMFS, NOAA, US Army, DOI, DOJ, CEQ, BPA, USDA, EPA
June 28, 2000	Conference call	13 Columbia River Tribal Chairs	CEQ, BPA, NMFS, DOI
July 27, 2000	Conference call	13 Columbia River Tribal Chairs	CEQ, BPA, NMFS, DOI

**Table 2 Listing of Federal and Tribal Discussions after July 27, 2000**

<b>When</b>	<b>Who</b>	<b>Meeting Type</b>
August 15, 2000	Spokane Tribe	Technical
September 18, 2000	Warm Springs Tribe	Technical
September 20, 2000	Shoshone-Bannock Shoshone-Paiute Burns-Paiute	Technical
September 22, 2000	Kootenai Coeur d'Alene	Technical
September 25, 2000	Spokane	Policy
September 27, 2000	Colville	Policy
October 3, 2000	Yakama	Technical
October 17, 2000	Yakama	Policy
October 24, 2000	Shoshone-Bannock Shoshone-Paiute Burns-Paiute	Policy Cultural Resources
November 7, 2000	Spokane Tribe Colville Tribe	Cultural Resources
November 8, 2000	Kootenai Coeur d'Alene	Technical/Policy
November 14, 2000	Kalispell Kootenai Tribe of Idaho	Cultural Resources
November 27, 2000	Warm Springs Tribe Yakama Nez Perce	Cultural Resources  *Washington SHPO also attended

### **Tribal Written Comments**

The Federal Caucus also received written comments during the technical review period from Columbia Basin tribes as listed below in Table 3.

### **Tribal Concerns**

In general, the following areas of concern were raised by the tribes:

- Trust and Treaty Responsibility of the Federal Government
- Historic Properties
- Culturally Important Resources
- Water Quality
- Resident Fish
- Blocked Areas
- Hydro Operations and Flood Control
- Salmon Rebuilding and Recovery Goals
- Treaty Fisheries
- Hatcheries
- Habitat Measures

Many of the tribal concerns expressed about the draft Strategy were similar to those expressed prior to its release. Tribal comments specifically dealing with the FCRPS Biological Opinions are addressed in the appropriate final biological opinions and are not addressed here.

**Table 3 Written Comments Received from Tribes on the draft Strategy**

<b>Date</b>	<b>To</b>	<b>Signed by:</b>	<b>Representing</b>
10/19/00	Ms. Donna Darm, NMFS Federal Caucus	Samuel N. Penney, Chairman	Nez Perce Tribal Executive Committee
9/29/00	Ms. Lynne Krasnow, NMFS Federal Caucus	Michael J. Farrow Director, Dept. of Natural Resources	Confederated Tribes of the Umatilla Indian Reservation
9/28/00	Federal Caucus	Lionel Q. Boyer, Chairman Fort Hall Business Council	The Shoshone-Bannock Tribes
10/23/00	Virginia Kuehn, BPA	Randy Settler Tribal Council Fish and Wildlife Committee	Confederated Tribes and Bands of the Yakama Nation
7/20/00	General Carl Strock US Army Corps of Engineer	Howard Funke, Tribal Attorney	Spokane Tribe of Indians
9/29/00	Brian J. Brown, NMFS Virginia Kuehn, BPA	Howard Funke	Spokane Tribe of Indians and Coeur d'Alene Tribe
9/25/00	Federal Caucus	Adelin Fredin Tribal Historic Preservation Officer	The Confederated Tribes of the Colville Reservation
9/29/00	Donna Darm, NMFS William McDonald, Bureau of Reclamation Judi Johansen, BPA Brigadier General Carl A. Strock, US Army	Colleen F. Cawston, Chairperson Colville Business Council	Confederated Tribes of the Colville Reservation

The Federal Caucus has tried to produce a Strategy that is responsive to many of the concerns of the tribes. Table 4 lists a number of the concerns expressed by the tribes and how they have been considered by the Federal Caucus in the Strategy. Following Table 4 is a list of Federal Caucus commitments made during the government-to-government discussions. Some of these commitments have been responded to, while others will be taken during the implementation period of the Strategy actions and the FCRPS biological opinions.

**Table 4 Summary of Tribal Concerns and Federal Responses**

<b>Tribal Concern:</b>	<b>Federal Response:</b>
<b>Trust and treaty responsibility of the federal government</b>	
<ul style="list-style-type: none"> <li>The Federal Caucus has not had meaningful consultations with the tribes about the Recovery Strategy.</li> </ul>	<ul style="list-style-type: none"> <li>The Federal Caucus participated in many technical and policy level meetings with Tribes and will continue to do so to ensure that Tribes have adequate opportunities to participate in decisions and policies that affect their interest.</li> </ul>
<ul style="list-style-type: none"> <li>The consultation process must be defined by the needs of the sovereign Tribal government.</li> </ul>	<ul style="list-style-type: none"> <li>The Federal Caucus will continue to pursue meetings with tribal governments, staffs, and intertribal organizations. Part of that process will include attempting to clarify and increase understanding regarding the different tribal governments view of government-to-government consultation. Not all meetings between tribes and federal agencies will involve such policy level collaborations, many meetings may remain at the technical level between federal and tribal staff members.</li> </ul>
<ul style="list-style-type: none"> <li>The tribes deserve an enhanced role in recovery decisions.</li> </ul>	<ul style="list-style-type: none"> <li>The Federal Caucus, and individual federal agencies, will continue to meet with tribes (at policy and technical levels) regarding federal proposals and actions addressing recovery decisions. Additionally, tribes may be represented on both Technical Recovery Teams and Implementation Teams addressing recovery in the various ESUs.</li> </ul>
<ul style="list-style-type: none"> <li>The draft Recovery Strategy fails to honor the Federal government's treaty and trust obligations to the tribes.</li> </ul>	<ul style="list-style-type: none"> <li>The Recovery Strategy recognizes the federal government's trust obligations to all the tribes in the Basin. It was not the intent of the document to address in detail those obligations. It does recognize some particularly important concepts of tribes, such as restoration salmonids ESUs to sustainable, harvestable levels. The majority of trust issues will be addressed in, as mentioned above, future meetings with tribes and tribal organizations.</li> </ul>
<ul style="list-style-type: none"> <li>The Federal Caucus has not established a specific, on-going formal consultation process to address tribal concerns as they promised in earlier meetings.</li> </ul>	<ul style="list-style-type: none"> <li>During the planning and development of recovery programs the Federal Caucus will consult with the tribes to identify tribal concerns and will take those concerns into account prior to the selection of a proposal or project. Additionally, it is hoped that the tribes will participate in the various recovery teams throughout the Basin. In the formation of the various teams, the federal agencies will seek nomination for membership from the tribes and tribal organizations.</li> </ul>
<ul style="list-style-type: none"> <li>The Regional Forum falls short of an adequate consultation process.</li> </ul>	<ul style="list-style-type: none"> <li>Federal agencies will continue to coordinate operation and configuration of the FCRPS through the Regional Forum's hydropower team. Participation in the team will be open to tribal representatives.</li> </ul>



Tribal Concern:	Federal Response:
<ul style="list-style-type: none"> <li>The federal government should include tribal governments in the daily operations of the hydrosystem, preferably through the execution of an intergovernmental agreement(s).</li> </ul>	<ul style="list-style-type: none"> <li>While the federal agencies will continue to utilize the existing hydropower team, as stated above, they remain interested in identification of alternative fora that would include, and enhance, tribal participation. Therefore, the federal agencies expressed their interest and commitment to continue to meet with interested Basin tribes to discuss how such fora might be developed and function.</li> </ul>
<b>Culturally Important Resources</b>	
<ul style="list-style-type: none"> <li>The federal government must consult with the Tribe on a government-to-government basis prior to actions that may impact cultural sites.</li> </ul>	<ul style="list-style-type: none"> <li>The action agencies are committed to continue working with the Tribes on cultural resource issues.</li> </ul>
<ul style="list-style-type: none"> <li>The federal action agencies should enter into an agreement to provide for a structured ongoing process of consultation to ensure protection and mitigation for cultural resources, sites and practices.</li> </ul>	<ul style="list-style-type: none"> <li>As part of implementation planning for the BiOps and Strategy, the federal agencies will: <ul style="list-style-type: none"> <li>Identify new areas of impact</li> <li>Identify agency responsible for implementation</li> <li>If appropriate, identify location and nature/scope of actions and initiate consultation under Section 106 of the NHPA.</li> <li>Coordinate with Tribal staff and Tribal representatives as early as possible during implementation planning and design processes.</li> <li>Identify and consider the potential effects to culturally important resources in final planning.</li> </ul> </li> <li>For reservoir operating units, existing reservoir cooperating groups will be used to implement reservoir operational elements of the BiOp. <ul style="list-style-type: none"> <li>Existing MOAs or on-going processes will be followed as appropriate to implement actions.</li> <li>As needed, agreements will be supplemented or developed.</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>The draft Strategy's promise to assess potential impacts to cultural resources prior to implementing recommended actions violates NHPA requirements and violates the NEPA provision against segmentation.</li> <li>The Caucus has not consulted with the Colville THPO or responded to the Colville proposal to prepare a cultural resource action plan.</li> </ul>	<ul style="list-style-type: none"> <li>There were numerous meetings between Caucus agencies and tribal cultural resources staffs as noted in Table 2.</li> <li>The action agencies confirm their commitment to meet the consultation requirements under NHPA.</li> </ul>
<ul style="list-style-type: none"> <li>The Colville Tribe calls for the Caucus to review applicable laws and regulations and revise the Strategy to effect compliance.</li> </ul>	<ul style="list-style-type: none"> <li>The Caucus agencies reviewed all applicable laws and regulations to ensure the Strategy is consistent with their mutual and individual requirements.</li> </ul>
<ul style="list-style-type: none"> <li>The federal agencies have acknowledged the need to address Grand Coulee/Lake Roosevelt issues in a comprehensive manner, but haven't moved to engage the Spokane Tribe in a meaningful effort to address such concerns.</li> </ul>	<ul style="list-style-type: none"> <li>The Federal Caucus remains committed to continue to meet with Spokane and other tribal governments regarding implementation of the Strategy.</li> </ul>

Tribal Concern:	Federal Response:
<b>Water Quality</b>	
<ul style="list-style-type: none"> <li>The BiOp and draft Strategy are deficient regarding actions to address water quality problems associated with the dams. Specific timetables or actions are not supplied. No specified consequences for failure to improve water quality are provided.</li> </ul>	<ul style="list-style-type: none"> <li>A Water Quality Improvement Team will be formed to implement the Water Quality Plan for the FCRPS to better link CWA and ESA requirements. Efforts to improve water quality on the mainstem Columbia will continue through traditional TMDL development and implementation and within the annual planning process.</li> </ul>
<ul style="list-style-type: none"> <li>The accumulation of contaminated sediments in Lake Roosevelt within and upstream from the Colville Reservation is a serious environmental emergency for the Colville Tribe.</li> <li>Similar concerns were expressed by the Spokane Tribe.</li> </ul>	<ul style="list-style-type: none"> <li>EPA is conducting a Superfund study for sediment contamination at Lake Roosevelt.</li> <li>BOR is reviewing the appropriate NEPA requirements related to implementation of the FCRPS Biological Opinion, which complements this Strategy.</li> </ul>
<b>Resident Fish</b>	
<ul style="list-style-type: none"> <li>The Strategy does not indicate how resident fish stocks will be addressed as actions for ESA are implemented</li> </ul>	<ul style="list-style-type: none"> <li>Habitat improvements called for in the Strategy will benefit resident and anadromous fish. For example, actions to restore water quality and protect high quality habitats in the Columbia River basin would benefit aquatic species in general.</li> <li>Federal agencies have jointly developed the biological opinions for the FCRPS and are making sure that salmon, sturgeon and bull trout needs and operations are coordinated.</li> <li>Kootenai River white sturgeon were included in the draft Strategy (primarily in Volume 2) but USFWS will include additional information on impacts to resident fish and their needs in the revised final Strategy. The implementing agencies commit to ensuring that tribes are involved in reservoir operations in a manner that will allow identification and consideration of culturally important resources.</li> </ul>
<b>Blocked Areas</b>	
<ul style="list-style-type: none"> <li>The Strategy does not address fish migration in the blocked areas above Chief Joseph Dam; a recovery effort that does not even consider the potential benefits from this action is unacceptable to the Tribe (Colville).</li> </ul>	<ul style="list-style-type: none"> <li>The Corps is working with the Colville Confederated Tribes on an anadromous fish passage study at Chief Joseph Dam that includes both assessment of available habitat and fish passage alternative identification.</li> <li>BOR will consider feasibility study through work with the Tribes on the Blocked Area Management Plan.</li> </ul>
<ul style="list-style-type: none"> <li>The Strategy uses of the upper Columbia River, where fish were eliminated by the development of the FCRPS, to meet the needs of downstream and Snake River anadromous fish will create a new round of injuries to the Tribe. The strategy does nothing to address present and on-going impacts.</li> </ul>	<ul style="list-style-type: none"> <li>BOR would need Congressional authorization to study returning anadromous fish to the blocked area.</li> <li>After Tribes issue their Blocked Area Management Plan, the federal agencies will work with them on further planning and funding.</li> </ul>

Tribal Concern:	Federal Response:
<ul style="list-style-type: none"> <li>The Colville Tribe is pursuing the establishment of a “fourth mitigation hatchery,” originally intended as a consequence of the construction of Grand Coulee Dam.</li> </ul>	<ul style="list-style-type: none"> <li>The BOR is pursuing information regarding the tribes' assertion that the intended hatchery was in fact never constructed. Documentation identified so far indicates that indeed a hatchery in the Okanogan system was originally intended. The BOR will continue to work with the tribe to identify the original obligations and current feasibility of developing such a hatchery. At the appropriate time the NMFS will be involved regarding the appropriate use of a potential mitigation hatchery within the system. The purpose of the hatchery would be to establish salmonids for tribal fisheries—such fisheries are currently considered extirpated.</li> </ul>
<b>Hydro Operations and Flood Control</b>	
<ul style="list-style-type: none"> <li>Operate the hydrosystem to increase water available for fish and wildlife by modifying flood control operations and obtaining irrigation water through water conservation for the upper Snake River, Banks Lake and Canada.</li> <li>In the absence of breaching, the Columbia and Snake Rivers must be managed to provide for normative flow conditions. To do this, flood control must be relaxed, which means greater risk of flooding in the Portland/Vancouver area. In addition, new water acquisitions must be obtained from Canada and the upper Snake on a long-term basis.</li> </ul>	<ul style="list-style-type: none"> <li>The Strategy acknowledges that significant amounts of additional water are needed to enhance flows during fish migration. Mutually beneficial arrangements with Canadian officials will be key to obtaining the additional water.</li> <li>The BOR is seeking to increase supplies of water available for flow augmentation by acquiring greater access to Idaho's water banks.</li> <li>The Strategy includes a review of systemwide flood control requirements to determine whether more flexibility can be secured in managing flow augmentation. A shift in flood control at federal projects is proposed as well as operations to address retention time at Grand Coulee. The Federal Caucus agencies will consult with tribes on these shifts.</li> </ul>
<ul style="list-style-type: none"> <li>The Corps needs to respect tribal priorities. Current Corps technologies are leading to the demise of sockeye and lamprey, while trying to save chinook and steelhead and minimize impact to the status quo. The Corps needs to focus on increased use of surface bypass and spill technology, improvements in adult passage and compliance with Clean Water Act.</li> </ul>	<ul style="list-style-type: none"> <li>The Corps will consult with the Tribes regarding the Corps' capital expenditures using existing technical coordinating committees established through the 1995 Biological Opinion. The Agencies are open <del>for</del> to policy-level discussions, possibly using the existing Columbia Basin Forum, or some other structure proposed by the Tribes.</li> </ul>
<ul style="list-style-type: none"> <li>The federal action agencies should enter into an agreement to establish a structured, ongoing process for consulting with the Tribe on all actions undertaken which affect river/reservoir operations at the Grand Coulee Project and Lake Roosevelt. Additionally there should be a mechanism to provide tribal input (including upriver tribes) regarding decisions regarding the Snake River system since those decisions also affect/impact operations at Grand Coulee.</li> </ul>	<ul style="list-style-type: none"> <li>The Regional Forum and other hydrosystem fora will remain in place and improvements will be considered to encourage tribal participation. The Federal Caucus intends to continue meeting with tribes to discuss how processes can be improved and how agreements can be implemented.</li> </ul>

Tribal Concern:	Federal Response:
<p align="center"><b>Salmon Rebuilding and Recovery Goals</b></p> <ul style="list-style-type: none"> <li>• Tribal goal is to increase naturally spawning adult salmon to 4 million fish in 25 years. An intentionally lower target, which at best minimally avoids jeopardy, will not even begin to provide meaningful natural production and harvest levels. Even if no jeopardy occurs, relic populations would still be below subbasin natural production goals, which are well below natural productions plus harvest goals.</li> <li>• Proposal and recovery standards are too vague.</li> <li>• Achieving abundant, harvestable fish population goals within a set timetable must be a guiding principle.</li> </ul>	<ul style="list-style-type: none"> <li>• Rebuilding goals and timetables will be incorporated into recovery plans as they are developed.</li> </ul>
<p align="center"><b>Treaty Fisheries</b></p> <ul style="list-style-type: none"> <li>• The federal government must develop a recovery strategy that will ensure sustainable, harvestable fish populations to fulfill its trust and treaty obligations.</li> <li>• The Strategy fails to rebuild Snake River salmon and steelhead to healthy, harvestable populations.</li> <li>• Under the federal proposals, dams will continue to kill vastly more fish than treaty harvest. There is an inequitable allocation of the conservation burden.</li> <li>• The Tribe wants certainty for tribal harvest by: <ul style="list-style-type: none"> <li>– Federal commitments that tribal incidental take can occur on a priority basis with regard to other sources of mortality.</li> <li>– Taking actions to reduce mortalities in other H's in order to accommodate tribal harvest.</li> </ul> </li> <li>• The Strategy unacceptably attempts to cap the Tribe's remnant fisheries, move the treaty fisheries from the usual and accustomed places recognized in the treaty to terminal areas, restrict treaty fisheries to selective gear while continuing the non-selective harvest in the FCRPS and in other federal activities such as federal land management, and crediting the hydrosystem with these restrictions of the treaty Indian fishery.</li> <li>• The Yakama Nation opposes the selective fisheries as a conservation tool because benefits may be exaggerated.</li> <li>• The tribes need a federal commitment to approve reasonable multi-year fisheries that reflect tribal needs, improvements required of other H's and rebuilding goals.</li> <li>• Tribes want historical tribal harvest included in the baseline.</li> </ul>	<ul style="list-style-type: none"> <li>• The Strategy attempts to balance the conservation of at-risk fish with the federal government's trust obligation to provide meaningful tribal harvests today and in the future. The Strategy recommends allowing a level of tribal harvest that respects the trust obligation.</li> <li>• The Strategy addresses federal land management requirements through offsite contribution to restoration especially through the implementation of ICBEMP or other appropriate aquatic strategies.</li> <li>• Selective fisheries will be mutually considered for voluntary tribal implementation as a possible mean to increase future harvest opportunities.</li> <li>• Fisheries harvest will be addressed through established US v. Oregon processes and should be able to address multi-year agreements.</li> <li>• Regional NMFS/USFWS developed recommendations for national level review. Issue resides at that level.</li> </ul>

Tribal Concern:	Federal Response:
<ul style="list-style-type: none"> <li>No discussion or apparent concern about the ongoing economic impacts to tribes of maintaining the current depleted runs.</li> </ul>	<ul style="list-style-type: none"> <li>The Federal Caucus recognizes that economic impacts occur with limitations on harvest opportunities. The goal of the Strategy is to rebuild the listed populations to sustainable, harvestable levels.</li> <li>For implementation of the Strategy, the Departments of Commerce and Interior will develop, and submit for independent review, an economic and cultural mitigation plan and possible additional actions to avoid jeopardizing the continued existence of threatened and endangered salmon.</li> </ul>
<b>Hatcheries</b>	
<ul style="list-style-type: none"> <li>The Strategy fails to ensure diverse approaches are taken to utilizing hatcheries.</li> <li>NMFS should strongly encourage hatchery operations that produce fish suited to spawning in the wild.</li> </ul>	<ul style="list-style-type: none"> <li>The Caucus agencies are committed to engage in ongoing meetings and consultations with tribes to identify the best use of hatcheries for salmon recovery.</li> <li>Because a range of scientific and policy opinions exist regarding the purpose and appropriate application of hatchery facilities, the Strategy recommends a variety of approaches, coupled with adaptive management.</li> <li>The Strategy will seek to minimize adverse genetic and ecological effects of hatcheries on wild stocks.</li> </ul>
<ul style="list-style-type: none"> <li>The tribes seek direct control over operations and maintenance of federal hatcheries in the Basin.</li> </ul>	<ul style="list-style-type: none"> <li>Federal agencies will continue to work with the tribes on transfer of hatchery facilities or the transfer of responsibility for operation of certain production facilities to the Tribes.</li> </ul>
<ul style="list-style-type: none"> <li>The Corps should fund capital improvements at lower Snake River hatcheries. A hatchery needing immediate attention is Lookingglass Hatchery in the Grande Ronde Basin.</li> </ul>	<ul style="list-style-type: none"> <li>This issue is referred to the Corps.</li> </ul>
<b>Habitat Measures</b>	
<ul style="list-style-type: none"> <li>Land managers must be accountable for achieving quantitative habitat objectives based on the biological needs of salmon. Monitoring must be adequate to assess conditions and trends, based on these objectives. Management actions must be accountable to the monitoring information.</li> </ul>	<ul style="list-style-type: none"> <li>BPA and NMFS have been working on linking the Council's habitat programs with state and tribal actions.</li> </ul>
<ul style="list-style-type: none"> <li>The tribe recommends and requests that the Caucus help develop a trans-boundary water group to address habitat quality concerns in the Okanogan Basin.</li> </ul>	<ul style="list-style-type: none"> <li>The Federal Caucus will continue to discuss trans-boundary issues with the tribes.</li> </ul>
<ul style="list-style-type: none"> <li>Recommend that aquatic protection strategies from ICBEMP be referred to the ISAB for peer review.</li> </ul>	<ul style="list-style-type: none"> <li>The Caucus has not resolved this issue.</li> </ul>
<b>Funding</b>	

Tribal Concern:	Federal Response:
<ul style="list-style-type: none"> <li>Strategy relies on the tenuous assumption that funds will be authorized and appropriated, projects will be implemented and results will begin to show relatively soon. Short of breaching, habitat and hatchery actions will not show the necessary restorations results in the short term.</li> </ul>	<ul style="list-style-type: none"> <li>The Federal Caucus acknowledges that if adequate funds are not made available to implement the Strategy, then the conclusions regarding dam breaching will be reconsidered.</li> </ul>
<b>Other issues</b>	
<ul style="list-style-type: none"> <li>Plan fails to honor peer-reviewed PATH process that determined breaching four lower Snake River dams provides the best opportunity to recovery Snake River salmon.</li> <li>NMFS' CRI analysis does not withstand scrutiny because it hasn't been formally peer reviewed or validated and regional state and tribal participation and oversight is absent.</li> </ul>	<ul style="list-style-type: none"> <li>The Federal Caucus believes the current analysis is the best available review of the recovery requirements of the Snake River populations.</li> </ul>
<ul style="list-style-type: none"> <li>Tribal, state, and federal scientists need to participate together to address science and research issues.</li> </ul>	<ul style="list-style-type: none"> <li>The Federal Caucus intends that there will be ample opportunities for states and tribes to participate in science and research issues.</li> </ul>
<ul style="list-style-type: none"> <li>Strategy should include specific consequences for non-performance and a mechanism for changing actions prior to the trigger points if the data indicate that such a change is needed.</li> </ul>	<ul style="list-style-type: none"> <li>If issues of non-performance arise, the Caucus agencies will respond as appropriate.</li> </ul>
<ul style="list-style-type: none"> <li>Federal government should implement breaching the Snake River Dams unless it has taken other immediate actions to recover and restore the salmon and can prove with certainty that it can rebuild the runs adequate to meet its treaty and trust obligations to Indian tribes.</li> <li>Plans rely heavily on research, studies, process, and planning and are short on implementing urgently needed substantive actions.</li> </ul>	<ul style="list-style-type: none"> <li>The Strategy is designed to provide immediate benefits and lead to salmon and steelhead recovery. System performance will be evaluated against science-based, peer-reviewed performance standards at 3-, 5-, and 8--year intervals. The dam removal question will again be joined if progress is inadequate or the Snake River populations decline, but not prior to testing the actions contained in the overall Strategy.</li> <li>The Strategy commits the FCRPS to fund habitat, harvest and hatchery actions to mitigate for unavoidable mortality in the federal hydropower system.</li> <li>The Strategy includes implementation of immediate actions in each H that will maximize benefits to listed species in the short term. The Federal Caucus will work with the Council, tribes, and states to fund, develop and implement immediate actions that meet specific criteria.</li> </ul>

Tribal Concern:	Federal Response:
<ul style="list-style-type: none"> <li>NMFS has failed to demonstrate an adequate scientific foundation for its basic approach.</li> </ul>	<ul style="list-style-type: none"> <li>The Strategy is built on biological objectives and seeks to establish priorities based upon sound scientific principles. The Federal Caucus relied on the best available science to evaluate expected effects of the Strategy. Because scientific uncertainties do exist, the Federal Caucus will evaluate system performance against scientifically grounded, peer reviewed performance standards at 3, 5, and 8-year intervals. The rigorous monitoring and evaluation program will allow the Federal Caucus to adjust the Strategy if needed. The Strategy does include rigorous independent peer review of its scientific foundation and its monitoring and evaluation activities.</li> </ul>
<ul style="list-style-type: none"> <li>Reliance on off-site mitigation results in the loss of precious time toward rebuilding. Plans provide no assurances that Snake River salmon can afford additional delays.</li> </ul>	<ul style="list-style-type: none"> <li>The Strategy recommends actions designed to address the population requirements in the quickest timeframe possible. Similarly, the actions are also designed to specifically address critical lifestages of listed species.</li> </ul>
<ul style="list-style-type: none"> <li>Documents lack definite actions, deadlines and accountability. The Strategy is not aggressive, comprehensive and likely to produce quick results.</li> </ul>	<ul style="list-style-type: none"> <li>Specific actions, schedules and accountability will be determined during implementation planning. Implementation planning will include coordination and consultation with tribal governments.</li> <li>The Strategy relies on actions that can be implemented using existing authorities and capabilities of the federal agencies. It also places priority on actions with the best chance of being implemented, the best chance of providing solid predictable biological benefits, and the best chance of benefiting the broadest range of fish species. The 3, 5 and 8 years mid-point evaluations will assist the Federal Caucus to identify if adjustments are needed to lead to recovery.</li> </ul>

**Culturally Important Resources.** Implementation of the actions described in the Strategy may potentially impact the culturally important resources throughout the Columbia Basin. During government-to-government discussions, the tribes emphasized the significance of the resident and anadromous fish and wildlife as part of the cultural heritage of the region's tribes. This significance goes beyond the current cultural resources program emphasis being addressed by the Federal agencies as part of the impact of reservoir operations. The Federal Caucus recognizes this need to understand the broader definition of the cultural heritage brought by salmon and traditional areas into the planning and implementation of actions undertaken to address the fish and wildlife resources of the Columbia Basin.

**Hydropower.** The areas and impacts associated with the operation of the hydropower system as a result of guidance from the Strategy will be essentially the same as those described in the 1995 System Operating Review (SOR). Additional inventory and analysis will need to be accomplished for areas not covered by the SOR. Implementation and funding for the Strategy actions associated with the operation of the hydro system will be implemented through the current Direct Funding Agreements. Existing reservoir cultural resource management cooperating groups will remain as the forum to identify issues and plan processes.

**Hatcheries.** Hatcheries are an integral part of salmon restoration. Facilities development needs to be aware and respectful of cultural considerations throughout the design, construction, and implementation stages. Though the goal of a hatchery is to increase the production of salmon, it must not be done at the expense of cultural values and resources.

**Harvest.** The federal caucus acknowledges and affirms the tribes' right to catch salmon as part of their cultural heritage.

**Habitat.** Cultural considerations for habitat projects will include traditional properties, use areas, plants and other identified resources. Actions taken to improve salmon and resident fish habitat will protect these resources and cultural values.



**Federal Caucus**  
**Public Involvement Summary Report**

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## **Section I: Description of the Public Involvement Program**

### **Introduction**

The Columbia Basin-Wide Recovery Strategy is one of a series of Federal reports focused on recovery of threatened and endangered fish in the Columbia River Basin. The paper serves as the conceptual foundation for a recovery plan to guide upcoming decisions that affect every part of the species' life cycle. These decisions will have an impact on human activities in the areas of habitat, hydropower, harvest, and hatcheries. The Recovery Strategy is popularly known as the All-H Recovery Strategy.

This Public Involvement Summary Report describes the efforts of the Federal Caucus to work with the region to develop this comprehensive approach. The Federal Caucus believes that regional participation is critical to the success and ultimately the implementation of a successful Recovery Strategy. The Federal Caucus established a multiagency communications team to develop and carry out a broad-scale public involvement program that includes many educational and involvement activities. Carolyn Whitney of the Bonneville Power Administration (BPA) led the team.

### **Scope**

The All-H Recovery Strategy takes a basin-wide approach to the question of species recovery. It addresses both anadromous and resident fish and other aquatic species in the United State's portion of the Columbia River Basin. This includes the states of Oregon, Washington, Idaho, Montana, and also southeast Alaska, where salmon harvest is a major component of the economy. The scope also includes the Federal Columbia River Power System (FCRPS), which is important to the region for flood control, power production, navigation, recreation, irrigation and other uses. The large geographic and cultural scope of the All-H Recovery Strategy required a similar scope for the public involvement effort.

### **Public Involvement Strategies**

The Communications Team faced a number of challenges to inform and engage the people of the region. Species recovery includes topics related to habitat, hydropower, harvest, hatcheries, biology and physical science, and all the many processes and studies underway in the region. One goal of the Communications Team was to outline how all the pieces of the Strategy fit together.

Another goal was to inform those people who could be affected by the actions suggested in the All-H Recovery Strategy, but who may not have followed the issues until this time.

A third goal was to focus on all impacts on endangered fish, not just the issue of potentially breaching the Snake River dams.

To meet these goals, the Communications Team centered its efforts in two areas: creating educational opportunities prior to the formal comment period on the All-H Recovery Strategy to ensure that citizens had a solid understanding of the substance of the issues and the Caucus'

process; and providing a variety of convenient ways for the public to participate in the formal comment process.

### **Educational Opportunities**

The Communications Team sought to reach the broadest possible audience and to engage people with a variety of backgrounds and levels of knowledge. Initially, Federal Executives mailed two letters to the states, Tribes, stakeholders, and citizens introducing the Federal Caucus and describing the All-H process and involvement opportunities. The team then established a web site to post information on reports, publications, meetings, and related announcements. The web site received more than 4,000 hits between December 1999 and March 2000. The Communications Team also published a series of newsletters, using easy-to-understand language to explain the background and origin of the All-H Recovery Strategy and the various reports, studies, and processes. These “Citizen Updates” were mailed to over 5,000 people. The team made available a toll-free phone number for citizens to pose questions and order copies of All-H materials.

Prior to the beginning of the formal-public comment period, Federal Caucus representatives participated in dozens of stakeholder and organization meetings to share information and answer questions. From March through November, Caucus representatives met with state and local government officials and agencies, utility executives, fish and wildlife interests, environmental groups, water users, and industry associations. (More information about these meetings is available upon request.) Federal Caucus representatives also made a concerted effort to reach out to regional news media to provide background information and keep reporters and editorial writers informed. Editorial board meetings were held with interested news and throughout February and March, the Caucus issued news releases for each of the public meeting locations.

In addition to these activities, the Federal Caucus hosted a public information meeting in Spokane, Washington on December 15, 1999, to help people prepare for effective participation in the formal comment process. More than 70 people from around the region attended the meeting.

At the same time as public involvement activities, the Federal Caucus met with affected Northwest Tribes in fulfillment of their Government-to-Government responsibilities. A record of these Federal-Tribal discussions are summarized in another appendix.

### **Science Workshops**

National Marine Fisheries Service’ (NMFS) Northwest Fisheries Science Center established a series of monthly workshops, alternating between audiences of technical experts and audiences with a mix of policy and technical participants (see Table 1). The technical workshops were a forum for NMFS scientists to present results, report on work in progress, and vet proposed approaches for future work with scientists from outside the agency. The intent was to gather suggestions, ideas, and critiques from technical representatives from a broad range of interested organizations.

The science and policy workshops were aimed at a wide audience. They were designed to provide policymakers and other interested persons an overview of NMFS’ Cumulative Risk

Initiative (CRI) analyses (current and future), as well as encourage discussion of applying scientific findings to decisionmaking scenarios. In addition, they offered a way for participants to provide feedback concerning these analyses and applications.

*Table 1*

***NMFS Northwest Fisheries Science Center Workshops***

<b>Date</b>	<b>Title of Workshop</b>
July 22-23, 1999	A Technical Introduction to the CRI Analytical Approach
August 31, 1999	Putting the four H's together in the real world and using the analytical framework to evaluate specific management scenarios
September 29-30, 1999	Assessing productivity of habitats with respect to salmon populations
October 27, 1999	Data-poor, rapid analysis assessments for other ESU's* in the Columbia River system
December 7-8, 1999	Spatial analyses: How many populations are enough?
March 29, 2000 (co-sponsored by American Rivers)	CRI Update, Modeling by States and Tribes, and Recovery Standards

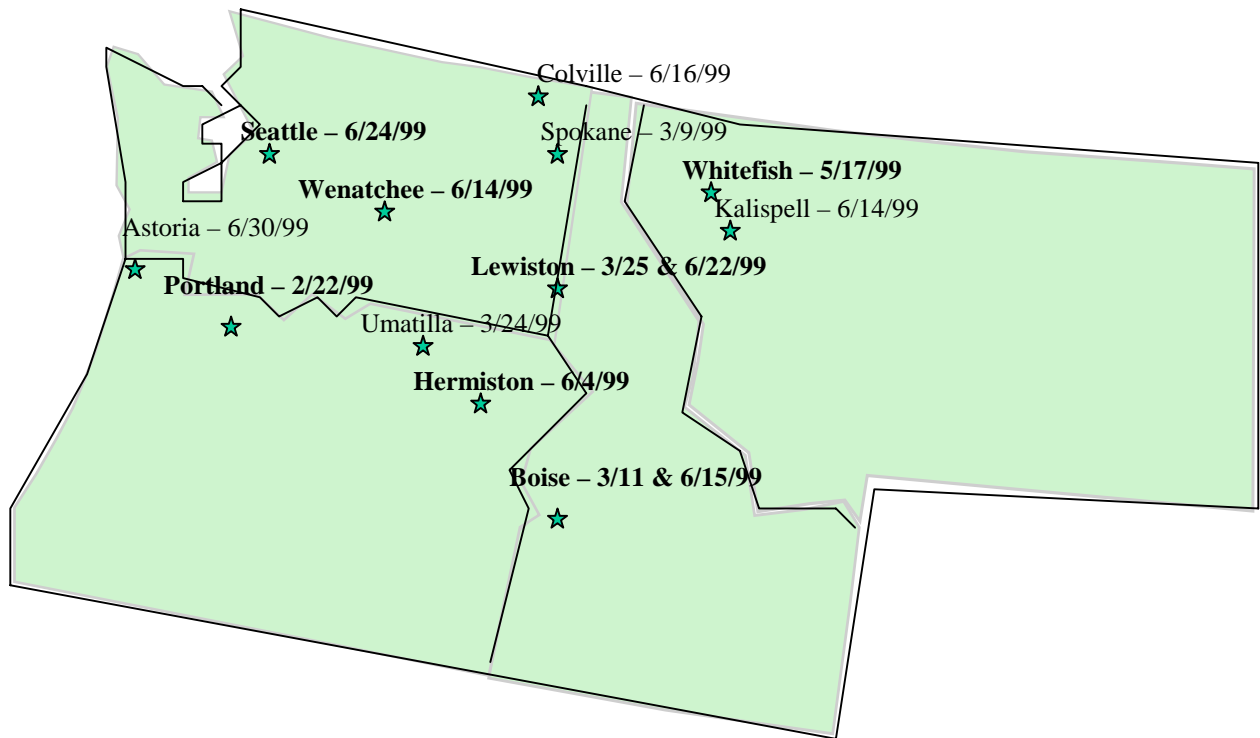
\*ESU = evolutionarily significant unit

**Participation in the Multispecies Framework Project**

During the preparation of its All-H Recovery Strategy, the Federal Caucus participated in the Multispecies Framework Project, a collaborative effort of the Northwest Power Planning Council (NWPPC), the Columbia River Basin's Indian Tribes and the Federal agencies in the basin. The Framework project looked at the alternatives available to the region for restoring fish and wildlife species to guide amendment of the NWPPC's Columbia River Basin Fish and Wildlife Program. While the goals of the Framework are more expansive than those of the Federal Caucus (the Framework focuses on broad ecosystem goals for all species while the Federal Caucus focuses on aquatic species listed under the Endangered Species Act (ESA)), some coordination of activities was possible between the two processes.

Federal Caucus representatives participated in the Framework's technical and management workgroups to share information, data, and analytical tools. Federal Caucus representatives also participated with Framework staff in two series of public meetings held around the region to provide information on upcoming Federal studies and solicit input on fish and wildlife recovery efforts in general. The following map shows those Framework public meetings that included presentations and participation by Federal Caucus representatives. (More detailed information on each meeting is available upon request).

# Framework Public Meetings with Federal Caucus Involvement



### **The Formal Comment Period: December 17, 1999 – March 17, 2000**

The formal comment period on the All-H Recovery Strategy began December 17, 1999 and continued through March 17, 2000.

The Communications Team established a number of mechanisms for the public to provide formal comments on the All-H Recovery Strategy. The options for commenting included:

- Sending an e-mail;
- Mailing or faxing written comments;
- Handing in written comments at a public meeting;
- Taping three minutes of comments at the public meetings; or
- Providing three minutes of oral comments at the public meetings.

### **Public Meetings**

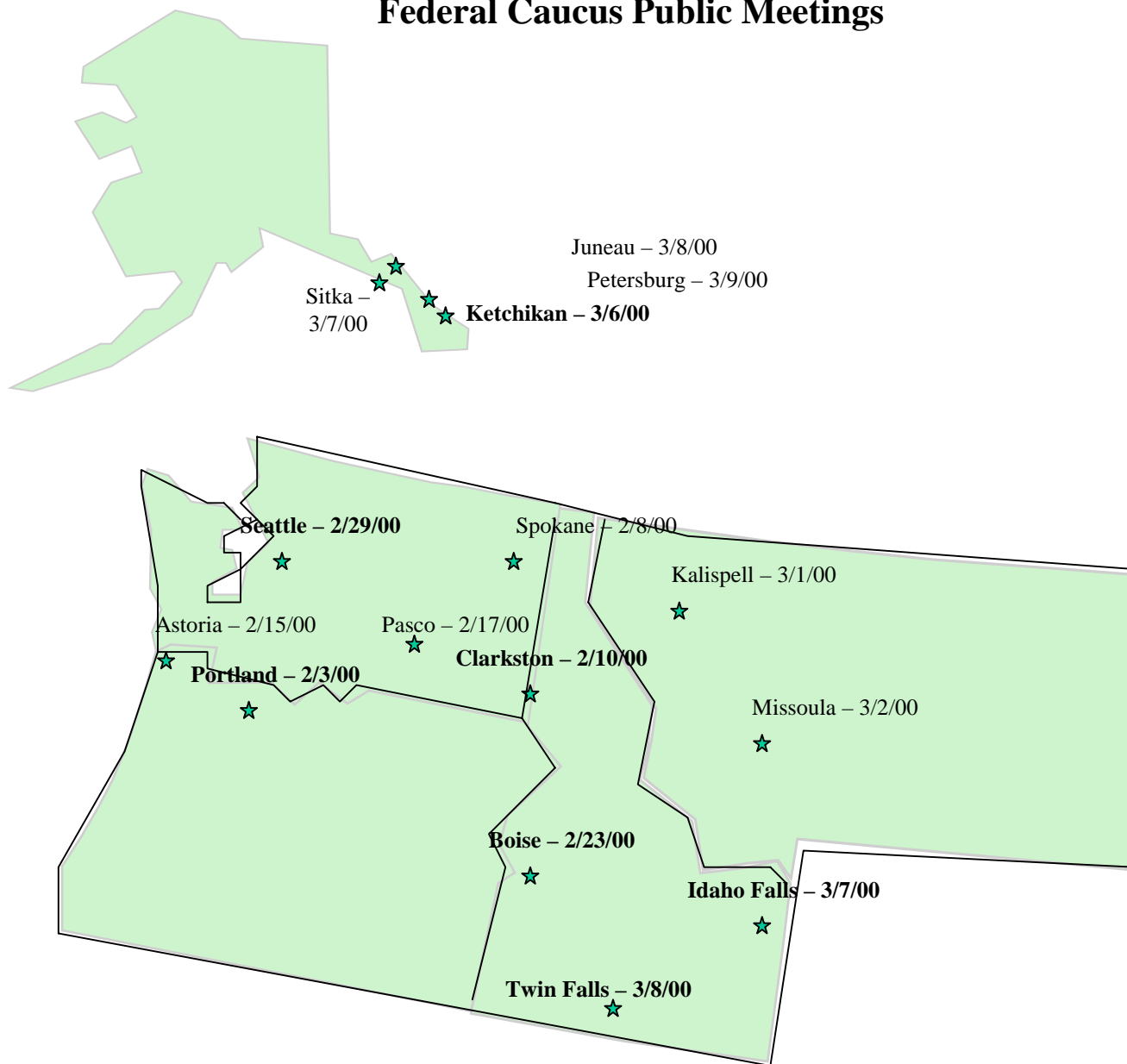
The Federal Caucus hosted a series of 15 public meetings across five states in February and March 2000. During the same period, the U.S. Army Corps of Engineers (COE) had been planning to host related sets of public meetings on the draft Lower Snake River Juvenile Salmon Migration Feasibility Report Environmental Impact Statement (EIS) and the John Day Drawdown Phase 1 Study. Also, the BPA Fish and Wildlife Implementation EIS began its formal comment period at the same time. The Federal Caucus received requests from individuals and organizations to coordinate these processes so people did not have to attend so many different public meetings. The Caucus agencies agreed to try to coordinate a format that would pull all of the meetings under the same tent. The Communications Team designed an agenda that accommodated all of the topics at a single meeting, while meeting the discrete administrative and legal requirements for each process.

To provide sufficient notice to the public, the Federal Caucus placed advertisements in local newspapers, mailed out information on dates and locations to a regionwide mailing list, and posted information on the All-H Web site. Individual phone calls were made to many organizations to ensure they received the meeting information and were able to pass it on to their respective members. Approximately 9,000 people attended the public meetings held in five states. Every effort was made to accommodate the large numbers in a safe and meaningful manner, as described in greater detail below.

### **Selection of Locations**

Meeting locations were selected to provide access within two hours commuting time for most citizens. The following map displays dates, locations, and the number of attendees at each of the public meetings.

## Federal Caucus Public Meetings



Portland*	1,200 attendees	<b>Missoula</b>	<b>225 attendees</b>
Spokane*	800 attendees	Idaho Falls	520 attendees
Clarkston*	1,800 attendees	Twin Falls	600 attendees
Astoria	200 attendees	Ketchikan	72 attendees
Pasco*	1,200 attendees	Sitka	130 attendees
Boise*	1,100 attendees	Juneau	151 attendees
Seattle*	550 attendees	Petersburg	91 attendees
Kalispell	120 attendees		

\* afternoon and evening sessions



## **Agendas and Design**

The public meetings were designed to continue to inform people about the All-H Recovery Strategy and process, the COE' Lower Snake River Draft EIS and John Day Drawdown Study, and provide opportunities for written and verbal comment. The meeting design included:

- Open house format (except in Alaska).
- Welcome packets with instructions on how to participate in each process, along with information about comment forms and deadlines for each process.
- Various displays about the salmon life cycle, the All-H influences (habitat, harvest, hatcheries, and hydropower), and major scientific studies such as the Plan for Analyzing and Testing Hypotheses (PATH) and the CRI.
- Resource managers and agency representatives available to talk informally with people and answer questions.
- Information booths and exhibits for related processes, including the COE' Snake River EIS and John Day Drawdown Study, the Interior Columbia Basin Ecosystem Management Project (ICBEMP), the Council, the Framework, and BPA's Fish and Wildlife Implementation EIS Space for information tables for interest groups such as Environmental groups, industry groups, stakeholder organizations and tribes.

The agendas for the public meetings included brief presentations, question and answer periods, and public comment time. To accommodate the broadest possible audience, both afternoon and evening sessions were held in most locations. All oral comment was limited to three minutes per person.

## **Section II: Summary of Public Comments and Responses**

### **Comment Analyses Process**

The public policy represented by the Endangered Species Act (ESA) has attracted national and international attention to the region's salmon recovery efforts. The Caucus received letters and comments on its draft All-H Recovery Strategy from around the country and from as far away as Australia.

The Federal Caucus contracted the services of Argonne National Laboratories, Environmental Assessment Division, in order to process all public comments from the formal comment period in an objective manner. The Caucus received over 35,000 postcards, 20,000 e-mails, and 3,500 letters along with the over 1,500 comments from the public meetings. All comments are logged into a data base as individual documents and categorized by comment topic. The following section summarizes the nature of the comments received and provides responses from the Caucus.

### **Comment Summaries and Responses**

The Federal Caucus categorized the public comments according to these topics:

- **All-H Life Cycle Approach**
- **Conservation Goals, Objectives, Performance Measures and Monitoring and Evaluation**
- **Hydropower**
- **Habitat**
- **Hatcheries**
- **Harvest**
- **Science**
- **Range of Alternatives**
- **Economics**
- **Institutional and Regulatory Issues**
- **Relationship to COE EIS, John Day Study, BPA EIS, ICBEMP**
- **Biological Opinions**
- **Public Involvement Process**
- **Native American Issues**
- **Implementation Issues**
- **Issues not fully considered**
- **Other issues**

In all, there were nearly 150 distinct issues raised during the comment period. The comments covered the range of issues addressed in the All-H Recovery Strategy and a number of other topics related to Columbia River Basin economics and ecology. There were many compliments and criticisms of the Federal Caucus and the All-H process.

The Caucus heard widespread support for fish recovery and the importance of restoring Pacific salmon populations to health. Disagreements exist about how, not whether, fish recovery should be accomplished.

The public meetings provided evidence of the depth of feeling on salmon recovery. Environmental organizations mobilized national campaigns in favor of salmon recovery and dam breaching, and their efforts were apparent in the numbers of participants who showed up at many of the meetings. Tribal members participated in traditional drumming ceremonies at some meetings to underscore the importance of salmon to tribal cultures. Workers in industries that would be affected by wholesale changes in river operations or dam breaching held rallies and demonstrations at some meeting locations. A number of people related personal stories about fishing or other anecdotes at the meetings to illustrate the significance of salmon to their lives.

Many people who commented said better coordination of Federal responsibilities and activities through the All-H process is a step in the right direction. But there is still a great deal of confusion over how the Federal Caucus and the All-H Recovery Strategy fit into the regional salmon recovery picture. Many commentators suggested evaluating the Hs equally or on the basis of how much each H has led to salmon decline. Effects of ocean conditions and predation were suggested as additional issues to be considered by the Federal Caucus. And commentators asked for specific measures and actions they say need to be taken to be able to recover listed species, including actions to address the human effects of recovery decisions. Some suggested that the All-H Recovery Strategy be an action and implementation plan, and that it also include non-Federal dams. The total cost of recovery was also requested.

Many commentators talked about the pros and cons of breaching dams, and some organizations made a concerted effort to turn out large numbers of people at public meetings to express their position on that issue. From the outset, the Federal Caucus has been clear that the All-H process is not a referendum on dam breaching, but rather an effort to develop a comprehensive salmon recovery strategy for the region. All comments regarding the specific alternative of dam breaching were also referred to the Corps of Engineers, which will respond to them within the context of the Corps' Lower Snake River Feasibility study.

The Federal Caucus considered the public comments thoroughly in completing the All-H Recovery Strategy and made responses to each issue. Specific responses to the comments are included in the next section.

Responses to Public Comments  
Federal Caucus Draft All-H Recovery Strategy

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# 1 ALL-H LIFE CYCLE APPROACH

## **ISSUE 01-001      Need for better coordination among Federal agencies.**

Some people observed a need for Federal agencies in the Northwest to work together toward salmon recovery. Too often, they argued, the agencies have spent time and money working on competing studies and plans that did not contribute to progress toward salmon recovery. Although they recognized the Federal Caucus' efforts to coordinate Federal actions in the basin, they believe more work is needed. Some people offered specific suggestions for improved coordination, such as clarifying responsibilities and identifying common goals.

### **RESPONSE 01-001**

The Federal Caucus was formed to ensure greater coordination and communication among all nine Federal agencies with key roles and authorities in salmon recovery. The Caucus and the All-H recovery concept are works in progress, and the agencies are dedicated to continuing to improve their coordination as they gain knowledge and understanding. The suggestions received during public comment are helping the Caucus to see areas where there is still confusion about the agencies' individual and/or joint responsibilities. The Caucus established the following common goals for a regional fish recovery plan: conserve species; conserve ecosystems; assure tribal fishing rights; balance the needs of other species; and minimize adverse effects on humans. The Caucus will continue to improve coordination throughout implementation of the All-H Recovery Strategy, and the agency members will sign a Memorandum of Understanding (MOU) to guide future joint recovery activities.

## **ISSUE 01-002      The All-H Recovery Strategy does not adequately express sense of urgency of salmon recovery.**

Many people expressed concern over the lack of urgency displayed by the All-H Recovery Strategy. These people believe immediate action is necessary to prevent salmon extinction and feel enough scientific information is available to make a decision(s) regarding salmon recovery.

### **RESPONSE 01-002**

The Federal Caucus shares a sense of urgency about salmon recovery efforts. The scientific research described in the All-H Recovery Strategy indicates there are significant risks of extinction for Snake River salmon and steelhead populations. While the All-H approach represents a new, coordinated effort, the Federal government's activities and investments in salmon recovery are not new. The agencies are taking action toward recovery in a number of forms, such as changing system operations, installing mechanical bypass systems, reforming hatcheries, and monitoring water quality. In other words, the agencies are not waiting until there is a final decision about the future to take action today. The Caucus believes that a thoughtful and deliberative approach, one that takes into account the needs of all species and minimizes adverse effects on humans, holds the best hope for a durable set of commitments by which to recover salmon stocks in the long term. The All-H Recovery Strategy lays out a comprehensive

framework for that recovery, along with performance measures and timeframes to track implementation.

**ISSUE 01-003      The All-H Recovery Strategy is not realistic.**

Some people commented that the All-H Recovery Strategy did not provide realistic options for the region because it tried to appeal to all interests in the region. Others believe the process was biased and did not equally consider all of the interests in the region, but favored some interests at the expense of others. Many people noted that there are real disagreements about the final plan, and there are no easy solutions. Commentors included both those in favor of radical change and those opposed to any fundamental change in the existing system. Some believe salmon recovery is the most important objective and that it cannot be served without drastic measures. Others believe human and economic interests in the existing basin are more significant than salmon recovery and should not be sacrificed to save fish. Still others believe more study is needed to find better alternatives or “common sense solutions” that can accommodate divergent interests.

**RESPONSE 01-003**

This issue is at the heart of the decades-long debate over salmon recovery in the Columbia River Basin: there is no silver bullet. The Federal Caucus believes that all interests will have to contribute to any lasting solution, and that is why it adopted the All-H approach. Without a comprehensive plan and an ecosystem approach, many years of implementing costly measures have failed to produce consistent results toward recovery. The All-H approach seeks to share the burden of recovery among all of the human activities that have contributed to the salmon’s decline. All those activities are on the table—habitat, harvest, hatcheries, and hydropower—along with all the policy options, from salmon recovery at all costs, human, and economic interests as top priority, to a balance between the two. The Federal Caucus believes that there is a way to combine the best science and the best policy into a future direction for the region.

**ISSUE 01-004      The All-H Recovery Strategy should be amended and reissued for public comment.**

Some people asked the Federal Caucus to provide supplemental information and reissue the All-H Recovery Strategy. Requests for supplementation included additional analyses, description of monitoring and evaluation, development of mitigation measures, and correction of flaws in scientific models. These commentors believe more review is needed before a final decision is made.

**RESPONSE 01-004**

The Final All-H Recovery Strategy will provide, at a minimum, additional analyses from the CRI model and more specific performance measures. The Strategy is a framework for much more specific implementation work in each of the Hs. While the Caucus is not planning on

another broad public review of the document, significant opportunities for public involvement will be part of implementation in each H.

**ISSUE 01-005      The All-H Recovery Strategy lacks specificity and is inadequate for decisionmaking.**

Some people commented that the All-H Recovery Strategy needed to provide specific information regarding the actions and consequences of the various alternatives. They believe the existing paper is not useful as an action plan because it provides little information for decisionmaking or for informed dialogue among the region's interests.

**RESPONSE 01-005**

The All-H Recovery Strategy serves as a conceptual recovery plan to provide a context for decisions within each of the Hs. Decisions about specific actions and the details of implementation will be made in other forums and through other processes, many of which already exist. For example, the NMFS and U.S. Fish and Wildlife Service (USFWS) Biological Opinions on ESA-listed species provide explicit measures and timetables for implementation; the NWPPC's Artificial Production Review is continuing to develop and implement a comprehensive hatchery policy in the region; and the ICBEMP is pointing the way toward 21<sup>st</sup> century management of forests, rangelands, and other habitat on millions of acres of public land in the Northwest. These are all possible vehicles for implementing the Federal Caucus' All-H Recovery Strategy.

**ISSUE 01-007      The All-H Recovery Strategy does not consider all Hs equally.**

Many commentators praised the design of the All-H Recovery Strategy for looking at the four Hs affecting salmon decline, but they expressed concern that the Hs were not considered equally. Most of the people making this comment believe that the paper demonstrated an unfair bias against hydropower and dams. Some argued that the process had been reduced to pros or cons of dam breaching, rather than a discussion of saving salmon. They urged the Caucus to move beyond the "destructive debate over dams" and on to less polarizing options.

Other commentators noted that the Hs should not be treated equally because they have not had equal contributions to the decline of salmon. Many believe hydropower dams have had the most significant effect on the decline of salmon and should, therefore, pay the highest price for recovery.

**RESPONSE 01-007**

At the outset of the All-H process, the Federal agencies pointed out that the debate over salmon recovery in the region has focused in recent years on dam breaching, to the exclusion of some other options. Of the 12 species of salmon and steelhead listed under the ESA that inhabit the vast Columbia Basin, just four Snake River populations would benefit from breaching the four Lower Snake River dams. Also, dam breaching must be approved and authorized by Congress, and could not be quickly implemented by the Caucus agencies. The high cost of dam removal



would preclude other actions needed throughout the basin. Therefore, the Caucus is not recommending dam breaching at this time. The All-H Recovery Strategy emphasizes actions that can be undertaken quickly, have solid and predictable benefits, and that are likely to benefit a broad range of fish species. However, dam breaching as an option will be further developed in the event that future conditions warrant it.

At the same time, there is no doubt that the Federal hydroelectric system has had a major impact on salmon runs, and changes in operations and project configuration have been a central thrust and a large expense in the region's salmon recovery efforts so far. The Federal Caucus is relying on the best available science and the CRI analyses to lay out the necessary contributions within each H that will lead to recovery of endangered species. Some trade-offs may be made among the Hs, so long as the final actions add up to recovery. For example, without breaching, more of a contribution will be required from the other Hs. The CRI illuminates choices and is a valuable tool for the Caucus in making these tough decisions about how to achieve the All-H goals.

**ISSUE 01-008            The All-H process is a step in the right direction.**

Many people commented that the All-H Recovery Strategy is a step in the right direction and represents a significant improvement over prior work on salmon recovery in the Columbia River Basin. People supported the All-H approach in bringing together divergent interests and trying to come up with a balanced solution. They also commended the Federal Caucus on its progress toward developing goals and options for salmon recovery. Although many people believe additional work needs to be done to clarify goals and options, some commented that the framework was adequate as it stands and would result in a workable, balanced plan.

**RESPONSE 01-008**

The Federal Caucus has aimed to stimulate an honest and constructive dialogue on salmon recovery among the governments and the people of the region, and to explore a wide range of options. Throughout the past several years, it has become clear that the Federal agencies have overlapping and sometimes conflicting responsibilities and missions related to species recovery, and a coordinated effort is the only way to achieve a cohesive and durable commitment for the future. The Caucus intends to build on the All-H Recovery Strategy and will continue its collaborative approach as implementation proceeds.

**ISSUE 01-009            Need a comprehensive salmon recovery plan that identifies multiple actions.**

Many people commented that successful salmon recovery would require development and adoption of a comprehensive plan. They stressed that salmon decline is a very complex issue, and there is no single action that can solve the problem. While many of the commentators endorsed the Federal Caucus for its comprehensive approach, many felt that the proposed measures were too narrow and should encompass a greater range of events.

## **RESPONSE 01-009**

The Federal Caucus' work in the All-H Recovery Strategy is not an end for the region's salmon recovery efforts. The Caucus has laid out a conceptual Strategy it feels covers an appropriate range of possibilities and allows for a wide array of follow-on activities and specific measures. The Strategy provides the context for a number of ongoing recovery efforts and will be a starting point for others. The Federal Caucus has built flexibility into the All-H process, and while decisions will be made to move recovery forward, new information and events are not shut out of the process.

## **ISSUE 01-010            Confusion over the role of the All-H Recovery Strategy and the Federal Caucus.**

Some commentators questioned the legal authority of the All-H Recovery Strategy and the potential role it will play in salmon recovery. They expressed a need for better clarification of the outcomes of agreements of the All-H process and how agencies would incorporate the mandates of the All-H Recovery Strategy into their individual decisionmaking processes. The commissioner of the Alaska Department of Fish and Game commented that the All-H Recovery Strategy is confusing. "It is unclear if the document is intended to gather information to be used for recovery planning, to inform decisionmaking related to the FCRPS biological opinion, or for some other purpose. The Federal agencies should clarify exactly what role this document plays in the recovery of Snake and Columbia River salmon," he stated.

## **RESPONSE 01-010**

The All-H Recovery Strategy serves four major purposes. First, it provides an overall, conceptual recovery strategy encompassing threatened and endangered aquatic species affected by the FCRPS. Once completed, the paper will provide guidance to the subsequent species-by-species recovery planning process required under the ESA.

Second, the Strategy establishes a context for the new Biological Opinions on operation and configuration of Federal dams issued by the NMFS and the USFWS. It shows how the actions called for in the hydrosystem fit in with other related recovery initiatives or policies ongoing in the Columbia River Basin.

Third, the paper provides a tool for engaging and informing the general public about the issues affecting salmon and steelhead, resident fish and other aquatic species, and the policy choices under consideration in the effort to recover them. Fifteen public hearings and seven scientific workshops were conducted after the draft was released, representing an unprecedented opportunity for the public to participate in the formation of natural resource management policies.

And finally, as a product of the Federal Caucus, the All-H Recovery Strategy has served as an organizing tool for the Federal agencies involved aligning their programs and activities to ensure maximum coordination and uniformity of policy from the Federal perspective. The paper is not a decision document. Its content is neither regulatory in nature, nor binding. It presents a set of strategies, goals and overall direction toward which the agencies in the Federal Caucus will

commit to move their programs and policies. This comment is addressed at the outset of the executive summary with a description of the purpose of the All-H Recovery Strategy.

The Federal Caucus will be engaged in a number of follow-on and implementation processes in the months and years ahead. It has been clear from the outset that some possible outcomes in the All-H process would require clarifications and formal agreements among agencies, tribes, and other parties. The Caucus envisions an extensive effort within each of the Hs to develop the appropriate plans and agreements to implement the agreed-upon options and achieve the agreed-upon goals.

**ISSUE 01-011            External factors affecting salmon productivity need to be addressed.**

A number of external factors are also affecting successful salmon propagation. These factors include things like the effect of predators (seals and terns), gill net fishing practices, lack of adequate spawning areas, the need to restore the Columbia River estuary, land use practices, and failure to operate dams properly during critical periods of the production cycle. While many factors are listed, not all commentators agree on approaches to managing external factors. Alternatives proposed in the All-H process should consider management practices that would address these external factors.

**RESPONSE 01-011**

The scientific analyses conducted prior to, and during, the development of Conservation of Columbia Basin Fish tend to confirm the comments that multiple factors affect the biological performance of salmonids. Some of these factors are human-caused, and others are natural. Regardless of origin, all sources of mortality against at-risk salmonids must be mitigated to some extent in order to maximize the likelihood that the species will achieve recovery. The analyses also show that no single factor, nor any single life stage, holds the key to restoring the fish to high productivity. The conceptual Recovery Strategy is intended to address a broad array of factors limiting the performance of salmonids. Volume 1, Section 1.3 discusses the range of impacts on listed fish, and the manner in which the program addresses them. Volume 1, Section 3 includes a series of strategies, policy changes and specific management actions to address each salmon and steelhead life stage. Volume 2, Section 5 discusses the status and biological needs of listed aquatic species in further detail. It also includes a bibliography of relevant scientific literature.

**ISSUE 01-012            Local communities have differing concerns and recommendations for Salmon Recovery.**

The All-H process gave the nine Federal agencies the opportunity to hear comments from a wide variety of people in a large geographical area. While the purpose of the All-H process was to bring together issues according to the needs of salmon, many commentators expressed local concerns that differed from the overall responses in unique ways. One of the effects of the All-H process was developing a better understanding of local issues and where they fit in the

overall context of Columbia River Basin issues. Often the commentors' recommendations and positions on the various issues reflect local concerns.

Note: The descriptions below seek to generally reflect the views from commentors who identified themselves as being residents of a particular community. The descriptions are not meant to narrowly define community sentiments, as the Caucus received comments across a broad spectrum of interests and positions. The Federal Caucus will consider all comments received, written and oral, on their merits, and that understand that sometimes the people who choose to speak at public meetings, or those who join a letter writing campaign, do not necessarily reflect the community feelings nor those of individual community members. In addition, many people who attended the public meetings did not necessarily reside in those locations.

*Central and Southeastern Washington and Northeast Oregon.* Many commentors who identified themselves as being from the Pasco community expressed opposition to alternatives that include dam breaching, since breaching the dams would eliminate their community's way of life, including electricity-dependent farming and industries. Many Pasco residents expressed pride in the transformation of their community made possible by the dams. As one commentor noted, "I do not want to go back to the way it was back in those days (before the dams) because it was nothing but a dust bowl, rattlesnakes, and a real mess." Some commentors questioned the extent to which salmon have declined. Community members encouraged the Caucus to consider the other factors in salmon decline – harvest (overfishing and net fishing [in-stream and ocean]), predation, barging, ocean harvests, and climactic changes. They supported alternatives that restricted harvest of salmon, improved or created substitute habitat, and increased hatchery production.

Many commentors who identified themselves as being from the Lewiston/Clarkston area also expressed their opposition to dam breaching. Members of the Nez Perce Tribe testified in favor of all alternatives to recover salmon, including breaching. While many commentors expressed support for salmon recovery, they believe dam breaching is too drastic a solution, that all other measures should be exhausted first, and that a compromise solution can be found to save the fish and the dams. Many consider themselves to be environmentalists, especially the farmers, and they resent outside interests coming in and prescribing actions that would potentially impact their lives so significantly. Lewiston/Clarkston residents expressed specific concerns about the increased cost of shipping, increased traffic, and increased wear-and-tear on roadways that would occur if the region losses barge navigation on the Columbia and Snake rivers.

Many commentors who identified themselves as being from *Montana* communities expressed concern over the use and potential restrictions on water flows in Montana. They believe water ought to be in local control and that Federal interests are usurping Montana's water rights. They are also concerned about the effects of flow augmentation and dam breaching on resident threatened and endangered fish species in Montana. People commented that the endangered resident fish in Montana were being relegated to a lower status than the endangered salmon in the Columbia River Basin. Residents from the Kalispell community generally expressed opposition to dam breaching and raised specific concerns ranging from increased freight costs,

loss of water for agriculture, and increased power costs. Some commented that these costs come at no benefit to the state. Residents from the Missoula community generally expressed more support for dam breaching. Many people expressed a willingness to pay more for their electricity to bring back salmon populations. They spoke of a moral obligation to prevent extinction and the need to take immediate action to restore fisheries (including the bull trout populations, which these commentors believe would be helped by dam breaching). Some people in Missoula expressed concerns about the cost and pollution of replacement power and the potential loss of aluminum, paper, and other manufacturing industries that are reliant on cheap power.

Many commentors who identified themselves as being from *Idaho* communities expressed significant concern regarding the effects of flow augmentation on irrigation and fisheries in Idaho. State officials testified that they would support no measures that restricted Idaho's water supply. Many people testified to the empirical failure of flow augmentation to bring about salmon recovery. Government officials stated that Idaho was opposed to dam breaching, but many individual citizens, particularly those in the south, were in favor of dam breaching as a way to restore fisheries in Idaho as well as in the Columbia River Basin. Many people at the Boise meeting testified that they had recently moved to Idaho, in large part because of its natural resources.

Commentors who identified themselves as being from *Alaska* communities expressed opposition to any further harvest restrictions citing significant economic losses to the sport and commercial fishing industries. State officials also expressed concerns about the potential effects of salmon restrictions on the Pacific Salmon Treaty, which were delicately negotiated between the U.S. and Canada. Alaskan commentors supported dam breaching as the best alternative to restore salmon populations and at the same time expressed interest in habitat restoration through pollution control, predation control, and ocean and in-stream habitats.

*Northwest Oregon.* Like Alaskan coastal communities, commentors who identified themselves as being from the Astoria community oppose further restrictions to salmon harvest, arguing that restrictions are unwarranted based on the fact that past experience with restrictions has not provided notable increases in fish populations. Astoria commentors expressed significant concerns about the decline in salmon populations and its effect on fisheries. They believe breaching the Lower Snake River dams presents the best opportunity for salmon recovery and ought to be the alternative adopted by the Federal Caucus (although people also expressed concerns about channel deepening and predation effects). They believe the fishing industry has suffered significant economic losses because of the dams, which, they contend, serve only a small minority of people.

Many *tribal representatives* attended public meetings and submitted comments to the public record. These comments from tribal representatives are described in section 14 of this report.

Commentors who identified themselves as being from *Seattle* covered a broad range of issues and opinions. Some supported all actions to benefits salmon, including breaching the four Lower Snake River dams; others questioned the specific measures.

Commentors who identified themselves as being from *Portland* favored all efforts to recover salmon, including breaching the four Lower Snake River dams. Some commentors tempered their comments by saying that the Caucus needed to establish firm goals, performance measures, and implementation plans for whatever actions were taken, and that the actions be thoroughly planned and tested to the maximum extent possible.

**RESPONSE 01-012**

The Federal Caucus appreciated the opportunity to hear from local residents and communities across the Columbia River Basin. The number of people who attended public meetings and the fervor with which they expressed their points of view demonstrated that salmon recovery is an urgent and highly charged topic in the Northwest and Alaska. The All-H Recovery Strategy is the first time that all factors in the salmon life cycle and the needs of all endangered species have been woven together into a conceptual approach to a comprehensive recovery plan. Recovery efforts touch every community in the region in one way or another, and the Caucus has not lost sight of the fact that one of its goals is to minimize adverse effects on humans. The Federal Caucus is committed to working with local and state officials to develop implementation and mitigation strategies for whatever course is chosen.

The Federal Caucus' recommended proposal combines both views on dam breaching. It allows the region time to see if survival and recovery can be effected through aggressive non-breaching alternatives across all Hs. If we do not succeed other steps including dam breaching must be considered.

## 2 HYDROPOWER

**ISSUE 02-001      The All-H Recovery Strategy process needs to address the significance of hydropower capacity that would be lost with breaching in the context of total regional power supply.**

Commentors took opposite positions on the importance of the hydropower capacity at the four Lower Snake River dams. Several pointed out that the output represents only 5 percent of the total capacity needs of the Northwest and that there were numerous ways of meeting that shortfall. Regarding increased costs, they point to the pending deregulation of the electric industry, providing opportunities for lower-priced power. Others indicated that the output of the four plants is approximately 1,200 megawatts (MW), which is the amount of power needed for the City of Seattle, or for most of the load in the states of Idaho or Montana. They further point out that studies conducted by the NWPPC indicate that an additional 3,000 MW of power will be needed in the near term to meet the region's expected growth of an estimated 2 million people. The All-H process needs to clarify the significance of losing the capacity and output of the four Lower Snake River dams in the context of the present and future power needs of the Pacific Northwest.

### **RESPONSE 02-001**

The Lower Snake River Juvenile Salmon Migration Feasibility Report/Environmental Impact Statement (Snake FR/EIS) explained the significance of the hydropower generation at the four Lower Snake River projects, and provided costs estimates for replacement power. The following table presents the capacity and energy that would be lost with breaching the dams and relates this to total regional power needs and to the Federal power system, which is marketed by BPA. As the table indicates, the plants' annual generation is 1,246 average megawatts, which is about 5 percent of Pacific Northwest loads and about 11 percent of BPA's loads. The Snake River plants provide up to 3,486 MW of peaking capacity, which is about 7 percent of the Pacific Northwest's peaking capacity and about 15 percent of BPA's.

The COE Lower Snake River FR/EIS identified the costs associated with replacing the energy and capacity with generating resources in the western United States and building new natural gas-fired, combined-cycle, combustion turbine (CT) plants. The analysis also identified the costs of improving the transmission facilities to accommodate the loss of the Lower Snake River dams. The economic analysis determined that the annual costs to replace the power from the Snake River dams were \$251 million to \$291 million. If Congress authorizes breaching the Lower Snake River dams, there would need to be additional studies on how the lost hydro generation could be replaced, including the potential for increased emphasis on conservation and energy efficiency.

## Lower Snake River Hydropower Plant Characteristics

	Ice Harbor	Lower Monumental	Little Goose	Lower Granite	Lower Snake Totals
<b>Number of Units</b>	6.0	6.0	6.0	6.0	24.0
<b>In-Service Date</b>	1 (1961) 2 (1962) 3 (1975)	2 (1969) 1 (1970) 3 (1979)	3 (1970) 3 (1978)	3 (1975) 3 (1978)	
<b>ENERGY:</b>					
<b>Average Annual Energy (aMW) for Base Condition</b>	264	332	317	333	1,246
<b>Average Annual Energy (1,000 MWh) for Base Condition</b>	2,313	2,908	2,777	2,917	10,915
<b>Plant Factor Base Condition</b>	38%	36%	34%	36%	36%
<b>SYSTEM ENERGY COMPARISONS:</b>					
<b>Percent of PNW Federal System Avg Energy (Fed System = 11,136 aMW)</b>	2%	3%	3%	3%	11%
<b>Percent of Total PNW System Avg Energy (System = 24,479 aMW)</b>	1%	1%	1%	1%	5%
<b>CAPACITY:</b>					
<b>Nameplate Capacity Per Unit (MW)</b>	3 (90) 3(111)	135	135	135	
<b>Total Nameplate Capacity (MW)</b>	603	810	810	810	3,033
<b>Overload Capacity (Total Maximum Output) (MW)</b>	693	931	931	931	3,486
<b>SYSTEM CAPACITY COMPARISONS:</b>					
<b>Percent of PNW Federal System Peaking Capacity (Fed System = 23,824 MW)</b>	3%	4%	4%	4%	15%
<b>Percent of Total PNW System Peaking Capacity (System = 47,859 MW)</b>	1%	2%	2%	2%	7%



**ISSUE 02-002**

**Replacing power lost as a result of implementing any of the project alternatives has significant ramifications for the region, even if the replacement power is from conservation resources. The environmental and economic ramifications of securing replacement power need to be well understood.**

Commentors did not agree on the potential sources of replacement power and took varying positions on the potential ramifications of securing that power. Generally, those who believe the loss of Snake River Dams power is insignificant point to the potential for conservation initiatives and renewable energy technologies to make up any shortfall. Others indicate that replacement power would likely come from thermal-based (coal/nuclear) sources that will be expensive and have the potential for exacerbating air-quality problems and causing other forms of environmental degradation typically found with thermal power sources. In addition, commentors believe there could be impacts to the regional transmission grid, depending on where replacement power originates. The All-H Recovery Strategy needs to address how new power sources will be found and what the effects will be on the overall power grid and supporting transmission facilities.

**RESPONSE 02-002**

The COE Lower Snake River FR/EIS examined the issue of replacement power and identified thermal resources as the most cost-effective way to replace the power that would be lost as a result of breaching the Lower Snake River dams. These resources would include additional operation of existing thermal units, along with construction of 1,550 MW of new natural gas-fired CTs. According to the report, independent power producers would provide these new plants. The environmental impacts identified in the COE Lower Snake River FR/EIS were based on the assumption that any new generation resources would be gas-fired CTs. The COE Lower Snake River FR/EIS identified (in the Air Quality Appendix) the increased air emissions that would occur, including approximately 1,800 tons of SO<sub>2</sub>, 174 tons of NO<sub>x</sub>, and 4,187,000 tons of CO<sub>2</sub>. No economic costs were assigned in the COE' report to these increased emissions.

Alternative ways of replacing the Lower Snake River power could also be undertaken. A recent report, entitled *Going With the Flow: Replacing Energy from the Four Snake River Dams*, April 2000, by the Natural Resources Defense Council (NRDC) and the NW Energy Coalition, identified ways to replace the Lower Snake River power with conservation and renewable resources. This study concluded that conservation and renewables could be used at only slightly higher costs than CT, and would not increase air pollution. The NRDC study used different assumptions about the generating capabilities of the Lower Snake River plants than the COE Lower Snake River FR/EIS. With the same assumptions, it is likely the cost results for the conservation and renewable resources replacement strategy would be somewhat higher than for the CT strategy. The NRDC report concludes that if conservation and renewables were to be used to replace the power from the Lower Snake River plants, some intervention into the market by government programs or incentives would likely be needed. With the NRDC's conservation and renewable strategy there would be no net increase in air emissions.

Impacts to transmission facilities with either the gas-fired CT or conservation strategy would likely be similar to those estimated in the COE Lower Snake River FR/EIS. The environmental impacts associated with new transmission were not identified in either the COE or NRDC studies. Should Congress authorize breaching, strategies for replacement power would be an important consideration. Detailed evaluation of the assumptions, strategies and potential impacts described in these reports would be necessary.

#### **ISSUE 02-006      Modify Flow Augmentation.**

According to some commentors, flow augmentation from headwaters in Montana, Washington, and British Columbia should be geared to maximize biological benefits for mid and lower Columbia River salmon stocks, while minimizing adverse impacts to native resident fish such as bull trout, westslope cutthroat trout, and white sturgeon. Integrated Rule Curves (IRCs) and VARIABLE Q (VAR Q) flood control methods should be used at upstream storage projects (e.g., Libby, Hungry Horse) to benefit resident fish and to restore a more natural hydrograph, with no significant loss of flood control. Some people expresses the view that flow augmentation from the Upper Snake River above Brownlee Dam should no longer be required, except on a willing-seller basis. Others suggested that flow augmentation may continue from Dworshak Reservoir. This water and additional water from Idaho Power Company's Hells Canyon Complex may be required to normalize flows below Hells Canyon and to cool river temperatures for migrating Snake River fall chinook.

#### **RESPONSE 02-006**

NMFS established flow targets and other operational requirements in the 1995 Biological Opinion on operation of the FCRPS. In its most recent Biological Opinion, NMFS continues to support these types of limits and operating recommendations, based on the best available science. Current monitoring and evaluation indicates that summer flows are even more important than previously thought. Also, the Federal agencies are seeking improvements targeted at enhancing the conditions in the estuary for migrating fish.

The purpose of specific reservoir operations is to balance the needs of resident fish, flood control, and other uses with those of ESA- listed salmon. One such operation is the requirement that the FCRPS reservoirs operate to be at their upper rule curve by April 10, to prepare for juvenile fish migration flows. This limits power draft while providing the same level of flood control protection.

Another example of balancing reservoir operations is VAR Q, an innovative flood-control regime developed by the COE. This operation would result in less winter draft at the headwaters' reservoirs and provide more benefits for resident fish. As defined, VAR Q is neutral with respect to flood control, because an offsetting flood control draft would come out of Grand Coulee. The FCRPS operating agencies, NMFS and USFWS are actively considering implementation of VAR Q since it would benefit multiple listed resident (i.e., bull trout and Kootenai River white sturgeon) and anadromous fish species. At this point, however, the State of Washington and the Colville and Spokane Tribes have raised concerns about the additional

draft at Grand Coulee. The operating agencies are conducting hydroregulation studies to better understand the magnitude of the effect on Grand Coulee (it is not a one-to-one adjustment due to the differences in reservoir size and location). The plan is to implement VAR Q at Hungry Horse Dam and evaluate it on operations at Libby Dam.

The Federal agencies recommend that additional flood control studies be conducted to determine if any modifications to current flood control regimes would enhance our ability to meet flow targets.

The 1995 Biological Opinion already limits use of water for flow augmentation from above Brownlee Dam to “willing-seller” arrangements, “consistent with applicable state law.” There was some question as to whether this practice could be continued since the state law authorizing such purchases expired on December 31, 1999. The Idaho legislature recently extended that law through December 31, 2000. The Federal agencies are currently in discussions with Idaho and other parties concerning flow augmentation beyond 2000. These discussions are taking place in the context of a mediated settlement in the Snake River Basin water rights adjudication. Flow augmentation is also an issue in some hydro relicensing processes, such as Idaho Power’s Hells Canyon Complex before the Federal Energy Regulatory Commission.

Flow augmentation from Dworshak is expected to continue as described in the 1995 Biological Opinion. In addition, the Federal agencies are considering the potential for annually drafting an additional 20 feet from the reservoir in September to address tribal concerns about warm river temperatures during fall adult salmon passage and to smooth the transition from summer to fall operations in the Snake River.

**ISSUE 02-007            Effects on Dam Siltation.**

Some commentators said the effects of dam siltation and siltation problems following dam breaching are not adequately covered in the All-H Recovery Strategy. Silt in the reservoirs poses many problems (increased temperature, decreased water quality, less oxygen, increased productivity of warm-species fish [Walleye pike]). Once a dam has been breached and a new channel cut, downstream reaches can be negatively impacted by sediment.

**RESPONSE 02-007**

The COE has described the extent of siltation behind the dams and what would happen with sediment material as it moves through the hydrosystem in the COE’s Draft Lower Snake River FR/EIS. Additional information to help with understanding the effects of siltation in the reservoirs below the Lower Snake River dams will be added to the revised draft COE Lower Snake River FR/EIS.

**ISSUE 02-008            Increased costs resulting from replacement power.**

Commentors pointed out that removing the dams and finding substitute power is likely to result in increased costs to power users. The All-H process needs to recognize that increased costs of power are a possible outcome and to identify what those increased might be under any alternative.

**RESPONSE 02-008**

Response 02-001 addresses the issue of the cost of replacement power. The possible rate impacts associated with breaching the dams are discussed in the COE Lower Snake River FR/EIS, Appendix I, section 6.3.1.1 and in the Technical Report on Hydropower Costs and Benefits.

**ISSUE 02-009            Additional benefits of Lower Snake River dams.**

The dams on the Lower Snake River provide numerous benefits and services, in addition to hydropower. Some of these services include water storage, flood control, and recreation. Many commentors believe that the loss of these services has the potential for serious consequences. For example, although flood control is not an authorized purpose of the dams, a comment indicated that the dams played a significant role in controlling floods that occurred in 1996. Commentors offered differing opinions on the role the facilities play in local irrigation. Some claim that irrigation is associated with the established reservoirs, while others indicate that is not the case. At issue is what are the consequences of removing dams in relation to the other services they provide.

**RESPONSE 02-009**

The four Lower Snake River dams were constructed and are operated and maintained for the following authorized purposes: navigation, irrigation, recreation, hydropower, and fish/wildlife (Chapter 1, Draft Lower Snake River Juvenile Salmon Migration Feasibility Report and Environmental Impact Statement (Draft Snake FR/EIS)). As part of the Economic Analysis for the Lower Snake River study an accounting of impacts was performed for authorized purposes of the dams, which presented as the National Economic Development (NED) account. This analysis was expanded to include the Regional Economic Development (RED) account which allows for a more comprehensive analysis. See Section 5.15, Economic Overview in the Draft Snake FR/EIS.

Water storage and flood control are not authorized purposes and have very limited roles in operation of the four lower Snake River dams. The dams are run-of-the-river (which means that rather than store water the dams basically pass inflows through) with very little fluctuation of the pools (Chapter 2, Draft Snake FR/EIS). These limited fluctuations allow for little water storage or ability to effect flood control. The lower Snake River dams only assist with the management of floodwaters within the basin, therefore breaching the dams should not reduce the flood control benefits within the basin (Draft Snake FR/EIS, Appendix 1, Section 3.7).

Section 4.11, Draft Snake FR/EIS discusses the significance of water withdrawals for irrigation purposes. Irrigation is a project purpose and removal of the dams will affect the reservoirs that allow for irrigation.

The consequences of removing the dams are laid out in Chapter 5, Draft Snake FR/EIS. The benefits and services provided are discussed in detail in this Chapter 4, Draft Snake FR/EIS.

**ISSUE 02-011      Have all structural modifications to the dams been adequately explored?**

One commentor suggested a potential solution to achieving greater survival rates: installing bypass structures at Lower Snake River dams. Other commenters stated that better analysis of other engineering solutions needs to take place. Fish friendly turbines and increased barging were also mentioned as ways to increase juvenile survival. On the basis of research at Lower Granite Dam, there is some feeling that survival could be increased with the use of yet untested structural modifications, enhanced by adjustments in dam operations. The All-H Recovery Strategy needs to address whether all reasonable structural modifications have been adequately considered.

**RESPONSE 02-011**

Chapter 3, Draft Snake FR/EIS does identify structural modifications included as part of the alternatives being considered for improvements to salmon passage. These include improvements to the existing juvenile bypass systems, adding surface bypass systems, turbine passage improvements, dissolved gas abatement measure, and others. There are a number of documents that preceded the Draft Snake FR/EIS and addressed numerous structural modifications. Many of these structural modifications were dropped from further consideration for various reasons. Discussion of these structural modifications will be included in a Revised Draft Snake FR/EIS.

**ISSUE 02-013      Water that is currently spilled or dedicated to flow augmentation could be put to better use in improving the situation for fish. Additional flow augmentation may have significant impacts in the states already providing water.**

Some people suggested that using the water currently targeted for spills and flow augmentation as a source of revenue could free up significant funds for other more beneficial uses.

Commentors suggest that water currently “lost” to beneficial use could be used to raise money that would support a fund for other activities, such as acquisition of habitat. The All-H Recovery Strategy needs to evaluate the value of spills in light of a recent study by the NWPPC questioning the net benefits of spill. Some commentors contend that any additional water for flow augmentation from Idaho has the potential to deplete Idaho reservoirs, leaving some of them dry as much as 10 percent of the time and that there are more-reasonable alternatives to flow augmentation. The All-H Recovery Strategy needs to consider both the economic and

environmental impacts that may occur through increased augmentation in Idaho and other locations.

**RESPONSE 02-013**

The Federal Caucus agrees that survival and recovery of listed Columbia River salmon will require an aggressive effort that addresses all life stages, including more effective ways to manage flow augmentation and spill to reduce mortality caused by the dams. The Caucus disagrees; however, with commenters who suggest that flow and spill measures are ineffective and should be curtailed to increase power revenues that could fund measures in other areas. In fact, there are additional measures that we believe should be evaluated for potential implementation to further reduce hydrosystem mortality. It is true that available resources should be allocated toward the measures that will result in the greatest contribution to population growth, rebuilding, and recovery.

The Caucus believes there is tangible evidence of benefits to meeting the flow and spill requirements of salmon. Commenters are referred to the NMFS white papers, entitled “Salmonid travel time and survival related to flow in the Columbia River Basin” and “Passage of Juvenile and Adult Salmonids Past Columbia and Snake River Dams.” These papers can be found at <http://research.nwfsc.noaa.gov/pubs.pdf>.

### **3 BIOLOGICAL OPINIONS**

**ISSUE 03-001          Better coordination is needed between Biological Opinions issued by NMFS and U.S. Fish and Wildlife Service.**

Commentors agreed with the Federal Caucus that better coordination is needed among the Federal agencies to assure success of actions in restoring salmon populations. NMFS should combine and cross-reference the various Biological Opinions so stakeholders can understand agency actions and schedules stipulated in the opinions. Tracking the status of implementation of actions would be improved through a cross-referenced data base of the Biological Opinions. One commentor suggested that all Biological Opinions dealing with salmon be finalized in the same timeframe so that clear consistent information on biological priorities could be developed by the agencies.

**RESPONSE 03-001**

The Federal Caucus agrees that better coordination is a key to successful recovery planning. USFWS and NMFS have taken a number of steps to improve coordination in developing their respective Biological Opinions to assure success of Federal actions in restoring salmon populations and other listed species. For example, the two agencies currently are developing separate Biological Opinions for the FCRPS for listed salmon and steelhead, and the Columbia River Basin's distinct populations of bull trout and Kootenai River white sturgeon. FCRPS operations, particularly at upriver storage reservoirs, affect listed salmon and steelhead and the listed resident fish species. Because the needs of FCRPS operations for all of these listed species overlap, USFWS and NMFS have been closely coordinating development of the Biological Opinions. The agencies have coordinated schedules and held joint meetings with other Federal agencies to ensure that the two opinions are consistent and complementary.

The Federal Caucus agrees that tracking the status of implementation actions could be improved through the use of a database or other means, such as an annual reporting requirement for the action agencies. These types of improvements are being considered through the implementation actions described in the Final All-H Recovery Strategy.

**ISSUE 03-002          Provisions in the NMFS Biological Opinion were not carried out.**

Some commentors, when referring to the 1995 Biological Opinion, believed that the NMFS "switched its standards at the last minute to make its conclusions fit available data and keep the status quo on the hydro system..." The plan presented in the Biological Opinion to have drawdown of the John Day reservoir and provide additional water to the Snake River did not occur. The commentor also criticized NMFS for failing to carryout its plan to develop a "prompt but reliable schedule to make future decisions about what we are going to do to save salmon."

**RESPONSE 03-002**

NMFS stands by the standards it established in its 1995 Biological Opinion for the hydropower system. In the Columbia River Basin, the 1995 Biological Opinion concluded that operation and configuration of the FCRPS jeopardize listed salmon and steelhead. It further proposed reasonable alternatives, including more aggressive river operations and long-term study of Lower Snake River dam removal. It established a five-year timeframe during which these activities would be carried out. We agree that not every measure identified in the Biological Opinion has been fully implemented. In the case of John Day drawdown to Minimum Operating Pool (MOP), for example, Congress took steps to bar the action, so Federal agencies could not proceed.

The time has come to evaluate the results of the current program and issue a new Biological Opinion. The efforts made under the 1995 Biological Opinion have improved survival of listed fish. The 2000 Biological Opinion will build in these improvements to make even more progress toward recovery. The 2000 Biological Opinion includes a rigorous framework for implementation, including specific performance standards for accountability. Progress towards those performance standards will be evaluated in years 2, 5, and 8.



## **4 CONSERVATION GOALS, OBJECTIVES, PERFORMANCE MEASURES, AND MONITORING AND EVALUATION**

**ISSUE 04-001**      **The All-H Recovery Strategy does not present a good picture of internal coordination among the various agencies implementing the recovery plan, prioritization of the various goals presented, or assignment of clear responsibilities and accountability among the implementing agencies or government bodies.**

Some people commented that while the latest draft All-H Recovery Strategy is an improvement over past planning measures, it still does not present a unified recovery plan that prioritizes the various goals or options to achieve those goals. The document is not clear on the assignment of responsibilities to the various implementing bodies, and as a result, accountability for implementing the various alternatives is lacking or fragmented. Specific comments included statements like:

- The Federal agencies working with the Caucus should seek agreement on a common set of priorities for funding and decisionmaking on implementation actions within each of the four Hs.
- The Federal agencies should document who is ultimately responsible for hatchery operations, habitat improvements, and changes in harvest practices?
- The Federal agencies should provide the region with the leadership to identify priorities among the goals if a conflict arises.
- The Federal agencies should clarify exactly what role the document plays in the recovery of Snake and Columbia River salmon.
- The Federal agencies should consider establishing a single governance body with sufficient authority to effectively implement a recovery plan.

### **RESPONSE 04-001**

The All-H Recovery Strategy is intended to provide a conceptual strategy to guide the region in recovering ESA-listed species. The All-H Recovery Strategy establishes a context for the new Biological Opinions from NMFS and the USFWS, and serves as an organizing tool for nine Federal agencies to align their programs and activities to ensure maximum coordination and uniformity in the Federal government's recovery activities. The draft All-H Recovery Strategy did not seek to define specific roles for various agencies, to assign priorities or responsibilities, or to identify accountability. As intended, the draft All-H Recovery Strategy did prompt regional discussion of these important issues and as a result, the Federal Caucus is recommending the following:

1. Continue the Federal Caucus. The Caucus agency will sign a Memorandum of Understanding (MOU) to oversee the implementation and review of the actions to ensure that commitments are being met.
2. Use the Columbia Basin Forum and NWPPC. These existing entities are positioned to make intelligent, cost-effective decisions about the priorities, funding, and implementation of actions.
3. Develop performance standards and measures. Standards can be adjusted if measurements indicate a failure to achieve the established standard. Adjustments may be made in the action implemented or in the allocation of survival improvements expected from each of the Hs.
4. Collaborate on science.
5. Coordinate Federal funding and implementation of recovery activities.

**ISSUE 04-002      The All-H Recovery Strategy inadequately addresses performance measures.**

There are a number of comments that applaud the first steps being taken by the Federal Caucus with regard to identifying performance measures in a recovery plan, particularly the utilization of biological assessments. The majority of comments on this topic, however, indicate that people in the region acknowledge that, at best, the All-H Recovery Strategy only identifies a call for performance standards. The general opinion is that the paper does not adequately address what the measures should be overall or with respect to individual recovery areas, such as harvest, or provide details on what measures will be used to determine if certain goals are met. It is not clear to many people what monitoring means are to be used or how the evaluated data is to be incorporated into the management process for the recovery plan. More than one respondent expressed dissatisfaction with the fact that the paper lacks any quantifiable figures (perhaps meaning target goals) to inform the region when recovery would be achieved. Individual comments ranged from the general to the specific and are exemplified by the following:

- The All-H Recovery Strategy must include recovery goals or a targeted level for the number of fish returning that would equate to a full recovery. Clear goals and accurate measurement of progress towards those goals is the only manner in which accountability takes place on a complex project.
- The final paper includes a description of how new information from the monitoring and evaluation process will be incorporated into management decisions and the choice of recovery actions.
- Goals need to be biologically based measurable and balanced standards that are developed and applied across all stages of the life cycle.

- The region needs specific goals for salmon recovery that meet the ESA and all treaty requirements, and measurable standards for achieving these goals.
- An effective monitoring and evaluation program for each of the Hs is also essential for the region to have success in recovering the listed stocks. An effective monitoring and evaluation program will prevent costly and regrettable mistakes
- The current approach to management of the recovery is not relying on measures of biological survival, but is based primarily on measures such as flow, percent spill, temperatures, etc.

**RESPONSE 04-002**

The Federal Caucus includes scientifically based performance standards and measures as a central component of its recommended recovery strategy. This strategy would allocate needed survival improvements in the form of performance standards in all of the H’s. The Caucus also recommends a review process that would allow adjustments to the performance standards if progress is inadequate. Recovery actions or the allocation of survival improvements across the H’s would be changed as a result of systematic monitoring and evaluation.

Although some basic data exists to establish performance standards across all H’s, the Caucus agrees that scientifically based standards and measures need to be developed in some areas. Scientific analysis is under way to support the development of measurable performance standards for population levels, life stages and for each H. Interim standards will be in place as part of the draft Biological Opinion for the FCRPS. As the science becomes available, performance standards and measures will be developed and incorporated into future recovery plans.

**ISSUE 04-003            The goals are in conflict.**

The five goals discussed in the report are potentially inconsistent and may not be simultaneously attainable, according to some comments. For example, compensating for hatchery operations in order to increase fish populations, yet killing surplus fish, sets up fisheries management practices that are in conflict, and fisheries and tribal harvest numbers conflict. The Federal Caucus needs to provide the region with a list of priorities in the event of a conflict of interests. In addition, no procedures are in place for problem resolution.

**RESPONSE 04-003**

The draft All-H Recovery Strategy suggested five goals that should be considered in development of a regional recovery plan. As a result of the regional dialogue, the Federal Caucus proposes adopting the five goals with two modifications:

1. Conserve species.
2. Conserve ecosystems.
3. Assure tribal and non-tribal fishing rights.

4. Balance the needs of all species and do not unduly impact upriver interests, including sensitive Native American cultural resources.
5. Minimize adverse effects on humans.

These goals reflect a commitment to a specific salmon and steelhead rebuilding range and a commitment to respect upriver interests and cultural resources. The goals presented in this All-H Recovery Strategy are not the actual goals of a recovery plan, but will be used to guide the development of future recovery plans.

While the Federal Caucus understands the difficulty in achieving all of the goals all of the time, we believe that decisions will be more balanced when judged in this context. Weighing and balancing the ability of actions to achieve these goals is the best way to assure that recovery plans are comprehensive, consistent, and economically and politically achievable.

**ISSUE 04-004            Goals are ambiguous.**

Some comments said that overall, the goals are poorly defined and ambiguous. Proposed actions to improve land habitat, water quality and quantity, and reduce predation are unspecified and not evaluated. The identified goals should be consistent with tribal harvest rights, not just for a delisting of the species. The final document needs to identify specific measures that would be biologically beneficial for the listed stocks.

**RESPONSE 04-004**

The draft All-H Recovery Strategy did not evaluate specific actions to achieve salmon recovery. The Federal Caucus agrees that biologically based performance standards need to be established so that specific actions can be identified and evaluated.

One of the goals adopted by the Caucus does address tribal harvest rights. As stated in Section 2:

- Assure Tribal Fishing Rights and Non-Tribal Fishing Opportunities. Restore salmon and steelhead populations over time to a level that provides a sustainable harvest sufficient to provide for the meaningful exercise of tribal fishing rights and, where possible, provide non-tribal fishing opportunities.

**ISSUE 04-005            Goals should include a human factor.**

The All-H Recovery Strategy covers all the biological and technical areas: harvest, habitat, hatcheries, and hydropower. There is an additional H that has been omitted, humans, real people, real families who could be affected by the decisions made on this issue. These decisions could affect people's ability to work and live in the Northwest and human lives could be adversely affected by some of the actions considered.

**RESPONSE 04-005**

The Caucus considered its stated goal to “Minimize Adverse Effects on Humans” when determining its recommended action plan. The Caucus is recommending an aggressive, yet balanced approach to achieve salmon recovery. This approach recognizes the economic and cultural needs of Northwest citizens to maintain quality of life, especially in rural communities already severely impacted by declines in natural resource-based economies.

**ISSUE 04-006           Goals should focus on saving salmon.**

The goals should clearly state that the principal objective is to save salmon, not to remove dams.

**RESPONSE 04-006**

The first stated goal of the Federal Caucus’ recommended action plan is to conserve species, avoid extinction and foster long-term survival and recovery of Columbia Basin salmon and steelhead and other aquatic species.

**ISSUE 04-007           INFISH and PACFISH Standards**

Commentors said INFISH and PACFISH standards should be applied to all Federal and state lands in critical habitat areas. Economic incentives should be offered to private landowners to facilitate fencing of riparian areas, reducing or eliminating harmful diversion dams, screening irrigation ditches, and conserving water.

**RESPONSE 04-007**

PACFISH and INFISH standards are currently being used by Federal land managers to protect aquatic habitat. The ICBEMP, which is being prepared by the U.S. Forest Service in cooperation with other Federal agencies, will replace the PACFISH and INFISH interim aquatic conservation strategies with landscape and watershed level approaches that address broad ecosystem issues in the Columbia Basin. These new strategies are expected to provide protection that is equivalent or greater than the PACFISH and INFISH standards.

**ISSUE 04-009           What is the role of project costs in the “Standards for Decision?”**

Public information displayed at the March 7, 2000, meeting in Idaho Falls, Idaho, listed the Standards for Decision as: (1) Legally Defendable; and (2) Implementable. Various displays indicated; however, that the expected costs would be a basis for decisionmaking. The All-H process needs to indicate what the role of project costs are in final decisionmaking.

**RESPONSE 04-009**

Recovery actions will be implemented based on scientifically sound performance standards and established priorities. Costs will be one criteria used to assign priorities to specific actions.

## 5 HABITAT

### **ISSUE 05-001      Habitat improvement/restoration/enhancement is needed for salmon recovery.**

A majority of respondents discussing habitat strongly recommend that efforts be put forth to improve, restore, or enhance salmon habitat, indicating that this was the most important factor in salmon recovery. In most cases, the nature of the improvement or type of habitat is not mentioned; however, estuary and spawning habitat are frequently addressed. Many commentors recommend habitat protection as being important. Several responders said that habitat improvement efforts should be applied to private land as well as federally owned land. Many say that partial or complete removal of the dams would be necessary in addition to habitat restoration for salmon runs to recover, or that habitat restoration should be accompanied by harvest reductions and/or hatchery improvements. A few respondents state that they believe habitat loss or viability is not an important factor in salmon decline or recovery.

### **RESPONSE 05-001**

All of the listed salmon and steelhead will require a mix of actions in harvest, hatchery, habitat, and hydro actions to reach recovery. The feasible and appropriate mix of these actions will need to be determined on a more refined scale through recovery planning. Science Analyses (the CRI) have demonstrated that for most of the listed species, survival in spawning habitat and in the estuary is important. Both the quantity and quality of these habitats have been substantially reduced in the last forty years. To achieve habitat recovery, the Federal agencies believe that there should be a three-pronged approach: first, avoid further degradation of habitats; second protect existing high quality habitats; and, third restore habitats on a priority basis. The Federal agencies propose immediate actions to meet these objectives in the estuary and tributary habitats. The Federal agencies also support the concepts of subbasin and watershed assessment to help determine how best to protect and restore the ecological processes in a watershed that create good stream habitat. Both Federal and non-Federal land and water uses and restoration initiatives have important roles in habitat recovery. The All Hs paper does not describe the specific mix of actions that should be taken in the watersheds. Suitable actions should be determined by local managers using watershed analyses, local goals and objectives and local management systems.

### **ISSUE 05-002      Effects of dams and dam breaching on salmon habitat.**

A large number of responders indicate that breaching dams would open up, create or make available salmon habitat, and that this additional habitat availability is critical to salmon recovery. Several stated that habitat in the tributaries and/or spawning habitat is their main concern, while a few said the reservoirs were a problem for a number of reasons. Many responders simply indicated that the presence of the dams has caused habitat loss or made habitat inaccessible, and is thus responsible for salmon population declines. However, several responders state that breaching of the dams would be highly detrimental to salmon habitat and water quality due to the release of large amounts of sediment currently stored behind the dams.

### **RESPONSE 05-002**

The primary prospective benefits of dam breaching relate to improving juvenile and adult migration between the ocean and spawning areas more than to increasing the amount of available habitat. The extent to which Snake River fall chinook would colonize the lower Snake if dams were breached is not clear. The Hells Canyon dams on the Snake blocked as much as 90 percent of the historical habitat for fall chinook, leaving them with a small portion of their original territory below Hells Canyon dam. It is not a certainty that these fish would automatically propagate naturally in a restored lower Snake. However, there are some plausible theories that suggest it could happen. The Return to the River report (ISAB, 1996) suggests one of two things could happen if the four Lower Snake river dams were breached: (1) the healthy population of Hanford Reach fall chinook could colonize in the lower Snake; or (2) the existing Snake River fall chinook could begin populating the area instead of moving all the way past Lewiston. It should be noted that removal of the Snake River dams would entail some significant short-term degradation of habitat and water quality while sediments behind the dams are discharged and carried down river.

### **ISSUE 05-003            Effects of predators on salmon populations.**

Many responders indicated that an important factor in salmon population declines is the great increase in the number of predators on salmon, particularly at the lower end of the Columbia River, the estuary and ocean. These predators typically include sea lions, seals, and Caspian terns. Often, the problem is seen as an increase in predator populations resulting from ESA protections, and delisting or permitted takings are recommended. A number of responders indicated that the tern population increase is a direct result of the construction of in-stream islands from dredged material. Recommendations range from stopping the island construction to planting trees on the islands to discourage tern nesting. A small number of responders stated that they believed predation is not a factor in the failure of salmon runs to recover.

### **RESPONSE 05-003**

The Federal agencies share this concern about the impacts of predation on salmon and steelhead populations. While marine mammals and birds that prey on juvenile salmonids have always been part of the ecosystem, a combination of human impacts and natural ocean and estuary conditions seem to have exacerbated predation problems. Marine mammals are protected by the Marine Mammal Protection Act, and it is presently difficult to “take” these species legally. NMFS is pursuing changes in the Act to help alleviate the predation problems. Bird predation is most serious at dam facilities and near islands in the lower Columbia River that were created from dredge spoils. The Federal agencies developed a plan to reduce predation from birds nesting on some of these dredge-spoil islands by moving them to East Sand Island. Translocation of terns to East Sand Island involved the creation of suitable habitat and the use of decoys and an audio system of tern calls to attract the birds. The Rice Island site was reduced in size through the use of revegetation, silt fencing and harassment of the birds prior to egg laying. The 1999 pilot was a success. 1,400 pairs of terns were attracted to East Sand Island and the diet of the birds at East Sand Island contained 40 percent fewer salmonids than those at Rice Island.

In 2000, the effort was expanded with the goals of eliminating nesting on Rice Island, attracting a maximum number of terns to East Sand Island and a planned experiment to relocate a portion of the colony out of the Columbia River estuary into other coastal sites, specifically Grays Harbor, Washington. In 2000, the habitat was maintained at East Sand Island, however, the state of Washington objected to moving the birds to their state and this component of the plan was dropped. As part of their effort to harass birds off of Rice Island, the Corps of Engineers applied for and received an FWS permit for a limited take of tern eggs under the Migratory Bird Treaty Act. However, before egg take was to begin, environmental groups filed a motion with the U.S. District Court in Seattle and the Corps was enjoined from using the take permit. Despite the injunction, Caspian terns overwhelmingly chose to nest at East Sand Island in 2000. Almost 18,000 Caspian terns relocated to East Sand and fewer than 2,000 attempted to nest at Rice Island. Monitoring data showed that terns at East Sand Island consumed 52 percent fewer salmon smolts than terns at Rice Island. The Federal agencies will continue to work on addressing predation issues.

**ISSUE 05-004            Effects of ocean conditions and climate on salmon populations.**

Many responders felt that climate conditions play a significant role in salmon population trends. Usually these comments related to conditions in the Pacific Ocean, which when specified, referred to high water temperature and low nutrient levels. Many of these commentators stressed that although they believed this to be a serious problem, much more research needed to be done to determine the impact of ocean conditions on salmon populations. Many of these commentators indicated that very little could be done to mitigate the impact or change conditions. Several responders stated that ocean conditions had deteriorated coincident with when the Snake River dams were built and were now reversing to become more favorable to salmon survival. Responders implicating ocean conditions often indicated that the dams were not the cause of salmon declines. Other responders felt that drought conditions were at least partially responsible for poor habitat quality in tributary streams.

**RESPONSE 05-004**

The Federal Caucus addressed ocean conditions in the All-H Recovery Strategy as part of the environmental “baseline.” It is our view that fish have to be recovered under good and bad ocean conditions, and it is not clear whether favorable ocean patterns will continue. Some scientists consider it possible that global warming has changed ocean conditions for the worse. The Federal Caucus will assure that monitoring of ocean conditions are part of the ongoing implementation activities.



**ISSUE 05-005                    Importance of estuary habitat in salmon recovery.**

Many commentors indicated that habitat associated with the Columbia River estuary was vitally important to salmon survival. Most of these people recommended unspecified estuary improvements or increased research into the use of this habitat by salmon in various life stages. Several responders were concerned that, while the Federal government seemed to agree with the value of the estuary, plans are under way to dredge portions of it and deepen the channel.

**RESPONSE 05-005**

Estuary survival may be important to several of the listed salmon and steelhead species. The estuary environment has been degraded substantially over time. The COE has authority now to start an ecosystem restoration study in the lower Columbia River. It is envisioned that this effort will be commensurate with the efforts of the Lower Columbia River Estuary Program. The COE will begin the scoping of the ecosystem restoration study this year, this study will have a primary focus geared towards salmon recovery. Separate actions such as dredging require separate consultation to assure that these projects will not jeopardize the continued existence of species listed under the Endangered Species Act.

**ISSUE 05-006                    Importance of spawning habitat in salmon recovery.**

A large number of commentors indicated that a primary cause of salmon decline and failure to recover is the inaccessibility or deterioration of spawning habitat. Many of these commentors felt restoration of this habitat could make a significant difference to salmon populations by increasing the area suitable for spawning, percentage of eggs hatching, and survival of salmon fry. Some problems with spawning habitat, according to commentors, include high water temperature and low food availability. Recommendations range from dam breaching to improving water quality. A few commentors indicated that farmers have already begun to improve stream conditions by reducing erosion and restoring riparian vegetation.

**RESPONSE 05-006**

The Federal agencies agree with the importance of spawning habitat in salmon recovery. Specific recommendations for improvements can be found in the final All-H Recovery Strategy.

**ISSUE 05-007                    Land use within the watershed and impacts to salmon habitat.**

People expressed concern about the impacts to salmon generally associated with land use and development trends. Concerns about development ranged from destruction of streamside habitat to reduction of water quality. Land management associated with agriculture or forestry practices was also discussed, and these practices were seen as a cause of reduced flows and increased sediment transport.

**RESPONSE 05-007**

The Columbia River's watersheds support a wide range of Federal and non-Federal land and water uses. The human population in the basin is projected to increase substantially, which will put additional pressure on watershed resources and ecosystems. Adequate laws and programs to prevent further degradation of habitats are essential. Federal land management agencies have strived to develop ecosystem management plans that include comprehensive strategies for protection and restoration. On the west side of the Cascade Mountains, the Northwest Forest Plan is in place. On the east side, the Federal agencies are implementing PACFISH and are designing a long-term strategy known as ICBEMP. These strategies address the impacts of land uses at the watershed level.

For non-Federal lands, there have been several positive efforts with Oregon and Washington's state recovery initiatives and Idaho's Clean Water Act. These efforts have not yet produced comprehensive watershed management strategies. Agricultural lands are a particular concern because they tend to be associated with water-quality and water-quantity problems and are often located in valley bottoms that were historically very productive areas for salmon and steelhead. In many cases, Federal and non-Federal strategies to conserve aquatic habitat are not coordinated across the different land uses and land ownerships in the watersheds.

**ISSUE 05-008      Improve effectiveness of habitat restoration.**

Commentors suggested that habitat restoration should be accelerated only in areas where degraded salmon spawning and rearing habitat can be improved significantly. Examples include the Clearwater River drainage, where logging, road building, and mining continue to have adverse impacts on fish; and in the Pahsimeroi River, East Fork Salmon River, Lemhi River, and the Yankee Fork Salmon River, where improvements could be made, but currently do not stand in the way of the overall recovery potential of Snake River salmon because of the availability of abundant pristine habitat. Some people suggest that contrary to CRI findings, the availability of high-quality habitat is not currently a limiting factor for three of four ESA-listed Snake River stocks (fall chinook are the exception). Even the most aggressive habitat restoration measures could not be done quickly enough to prevent extirpation of the spring/summer chinook and sockeye.

**RESPONSE 05-008**

The All-H Recovery Strategy is a conceptual recovery plan. Specific recovery plans for each of the evolutionary significant units (ESUs) will determine the most appropriate suite of management measures to take across all the Hs. Protection of existing productive habitat is a first priority and in many cases will need funding. Priorities for protecting productive habitat and restoring degraded habitat will need to be determined based on the findings of subbasin and watershed assessments. These assessments will provide information on what populations and watersheds are most important and also on what habitat factors are most limiting. Securing and protecting productive habitats are actions that can have immediate benefits. The length of time it will take for habitats to be restored depends on the problem and the solution. For example, fixing passage and water quantity can benefit fish survival immediately. Improving temperature

through planting and allowing trees to grow in riparian areas can take 15 years and longer. Improving watershed ecological processes of sediment transport and hydrology can take decades to enhance fish habitat. The feasibility of gaining habitat improvements in the short, mid and long terms will need to be evaluated.

**ISSUE 05-009            Historical spending.**

Some people disagreed with the use of past expenditures on habitat as an accurate estimate of the amount needed to achieve desired goals. The Federal Caucus should select a level of habitat action that would be effective, and then evaluate the associated costs.

**RESPONSE 05-009**

The task of estimating habitat protection and restoration costs for the entire Columbia River Basin is daunting and complex. The figures presented in the draft All-H Recovery Strategy were an estimate of reasonable costs to accomplish habitat restoration based on the region's past experience in implementing the NWPPC's Columbia Basin Fish and Wildlife Program. The Federal agencies believe that more precise costs can be determined after more specific recovery plans and subbasin and watershed plans are complete. The method the Federal agencies used to calculate the costs is transparent and the public is encouraged to plug-in alternate values and submit alternate estimates.

**ISSUE 05-010            Habitat improvements may not improve survivability.**

Some commentators suggest that habitat improvements may not be productive according to the sensitivity analyses performed with PATH. In that study, habitat improvements found little appreciable change in meeting survival and recovery standards when other H parameters were held constant, according to commentators. There was only a small measurable change in probabilities of meeting survival and recovery thresholds for streams with very degraded habitats.

**RESPONSE 05-010**

Alternate analyses suggest the opposite and indicate improvements in habitat could increase survival of salmon. CRI analyses by NMFS suggest that improvements in survival during freshwater and estuarine residency would lead to increased population growth. Additional analyses at the NMFS Northwest Fisheries Science Center show that habitat is a significant factor in predicting spawner abundance, using salmon data from 1960 to 1977 for the Salmon River basin. If data were used from a time period when spawner abundance was low, e.g. 1988 to 1997, habitat was not a significant predictor. This should not be interpreted to mean habitat is not important, but rather that the influence of habitat cannot be detected below a certain spawner abundance threshold. In addition, the PATH analyses assumed that habitat was in good or even pristine condition, making gains in habitat improvement from management actions less apparent. Recent analyses of habitat data show that even in "wilderness areas" of the Salmon River Basin there are significant human impacts, such as mining claims and hazard sites, zoning for livestock grazing, and streams that do not meet water-quality standards. The levels of these activities are even greater outside the wilderness areas. Further, a significant portion of the habitat in

wilderness is not suitable salmon habitat, and interpretation of the value of wilderness area habitat to salmon must be made with caution. In short, additional analyses of the data show that there are substantive opportunities for habitat improvements that could lead to improved salmon productivity.

**ISSUE 05-011            Representativeness of basin data.**

The draft All-H Recovery Strategy suggests that not all basins are the same and that some basins have greater needs than others. Some commentors suggest that Federal agencies should provide a rationale for evaluating basins and subbasins. The draft All-H Recovery Strategy indicates that either 60 percent or 30 percent of the basins would be assessed. The rationale for selecting basins and excluding 15 to 20 percent of the watersheds needs to be provided. Some people further suggest that the draft All-H Recovery Strategy and its appendices fail to distinguish properly between mainstem and subbasin actions. In particular, some commentors suggest that the cost of mainstem actions would be significantly more than subbasin actions.

**RESPONSE 05-011**

The Federal Caucus referred to the Columbia Basin Fish and Wildlife Program expenditures in the Habitat Appendix chapter, Estimating the Cost of Protecting, Maintaining and Improving Salmon and Steelhead Habitat in the Columbia River Basin, because they are well documented. The costs chapter noted that in most, if not all, cases these expenditures fell short of requests and did not meet the total need. Based on this information, the costs chapter makes a simple, very general approximation of what is needed for adequate funding. This estimate needed needs to be refined, and a new estimate should be based on subbasin and watershed plans. One of the cost estimates is for watershed analysis and planning. The 60 percent figure was based on an assumption that the rate of watershed assessment across the basin would be about the same as the rate of watershed assessments projected for the preferred alternative of the Interior Columbia Basin Ecosystem Management Project. The figures of 60 percent and 30 percent for the alternate levels of watershed assessment in the Columbia River Basin were provided mainly to show the cost differential between the two.

**ISSUE 05-012            Man-made islands from dredging operations threaten salmon habitat.**

Many people commented that the islands created by dredging operations in the Columbia River estuary have negatively affected salmon populations. The islands, they contend, have destroyed estuary habitat and encouraged the settlement of large populations of terns, which prey on salmon smolts. Commentors suggest cessation of dredging operations, removal of the islands (particularly Rice Island) and aggressive predator control programs for terns.

**RESPONSE 05-012**

The COE maintains the 40-foot-deep by nominal 600-foot- wide navigation channel in the Columbia estuary under the authority of numerous rivers and harbors Acts, the newest of which is the Rivers and Harbors Act of October 23, 1962. Channel maintenance dredging is done in

accordance with the requirements of the National Environmental Policy Act (NEPA), the Clean Water Act, ESA and other applicable laws. The original NEPA EIS was completed in 1975, with a Supplemental EIS completed in Fall 1999.

In recent years, researchers have become aware of increased avian predation of salmonids near Rice Island, one of the islands created from dredge material. Until this discovery, the islands had been managed as part of the USFWS wildlife management preserve in the lower estuary. The islands have provided many square acres of excellent calm backwater and shallow water habitat for the past 90 years.

NMFS' Biological Opinion for maintenance dredging called for the COE to keep Caspian terns off Rice Island in 2000, and the COE expressed its commitment to do so. For the 2000 juvenile salmon migration season, the COE prepared alternative habitat for the terns on East Sand Island, downstream of Rice Island and closer to the ocean, where the birds' diet relies less heavily on salmonids. The COE had contracted to begin hazing birds on Rice Island to discourage nesting there in early April. But a court injunction has effectively halted those efforts for this year. A Despite the injunction, Caspian terns overwhelmingly chose to nest at East Sand Island in 2000. Almost 18,000 Caspian terns relocated to East Sand and fewer than 2,000 attempted to nest at Rice Island. Monitoring data showed that terns at East Sand Island consumed 52 percent fewer salmon smolts than terns at Rice Island. The COE will continue to work with the USFWS and others on a long-term plan to address avian predation on juvenile salmon and steelhead in the estuary.

## 6 HATCHERIES

### **ISSUE 06-001      Add hatcheries to downstream and headwater reaches of the Columbia River.**

Some commentors supported strategic placement of hatcheries where they would enhance wild salmon and steelhead production. One example would be hatcheries in the lower Columbia to supply fish for the commercial and Indian fisheries. Another example would be hatcheries at the headwaters to help raise smolt only part way or to the most desired (in terms of development and training) premigration stage of growth so numbers per spawning female can be substantially improved. Four hundred migrating smolt, per 5,000 eggs laid, leaves lots of room for improvement.

### **RESPONSE 06-001**

Although some new hatcheries may help conserve and recover listed salmon and steelhead, any new programs must to be based on a basin-wide conservation and recovery plan which includes all ESUs and their populations.

Tribal fisheries are generally above Bonneville Dam and would not benefit by lower Columbia River hatchery development. Although some commercial fisheries would benefit, listed fish destined for upstream spawning areas would be intercepted in large and intensive fisheries targeting hatchery-reared fish. Harvest strategies that conserve and do not inhibit recovery of listed ESUs and their populations would need to be developed before new hatchery programs are initiated.

Many conservation hatcheries are located in headwater areas and are already being used to improve the number of juveniles produced per hatchery female. This will not, however, increase the number of smolts resulting from a natural female's redd. The survival of eggs, fry, parr and smolts from a natural redd is influenced by the quality of spawning and rearing habitat; whereas, the survival from smolt to adult is dependent on the quality of the migratory and ocean habitats. A production of 400 smolts from a natural redd is considered good and would return large numbers of adults with historic smolt-to-adult return rates of 5-10 percent.

### **ISSUE 06-002      Enhance salmon recovery through hatchery improvements.**

Commentors made numerous suggestions to improve hatchery programs, including:

- Mark all hatchery salmon.
- Improve genetic strength of broodstock through supplementation practices.
- Explore conversion of Mitchell Act Hatcheries to modern facilities.

- Address drastic changes in hatchery programs.
- Continue to give top priority to salmon through improvement of habitat, hatcheries and harvest control.
- Establish performance measures for hatcheries so there is no question adult salmon is the goal.
- Address harvest by implementing Pacific Salmon Treaty, improving spawning and estuary habitat, and improving hatchery practices through technology to support recovery efforts.
- Change tribal fisheries, including the development of terminal fisheries in the tributaries, where reductions in mortality of returning adults from a non-selective in-river fishery appear to have benefits to weakened stocks.
- Revise hatchery practices to move toward a conservation model.
- Change hatchery practices to more closely mimic nature.
- Focus efforts on extensive hatchery and/or spawning-bed enhancement.
- Improve hydropower, habitat, harvest, and hatchery operations.

#### **RESPONSE 06-002**

The Federal Caucus proposes to implement the recommendations from the Artificial Production Review developed by the NWPPC. These recommendations were developed with full regional involvement, and seek to minimize harm to wild fish. Key elements of the Federal Caucus recommendations also include development of hatchery genetic management plans and use of conservation and supplementation facilities to avoid extinction. The Federal Caucus recommends aggressive research, monitoring and evaluation to quantify hatchery impacts over time.

Specific responses to comments are as follows:

- The Federal agencies recognize the use of mass marking of hatchery fish, supplementation and hatchery reform as important actions that must be used to conserve and recover listed salmon stocks in the Columbia River Basin. Each of these actions, however, must be considered in the context of the biological needs of the particular stock that may be impacted or benefit, the purpose of the hatchery program and the availability of funding.
- Supplementation is another tool that must receive careful consideration by managers in the Columbia Basin. While supplementation has the potential to help restore populations, it must be used carefully and thoughtfully as a recovery tool. Even where supplementation can increase the survival of juveniles, factors that have caused the decline of the populations must

be corrected before supplementation can help recover the population. Currently supplementation is being considered and applied based on risk assessments and biological needs.

- Regarding the conversion of Mitchell Act hatcheries to modern facilities, in the past few years there have been two reviews that have identified facility reform needs and made recommendations to the managing agencies for hatchery reform. These two efforts include the Integrated Hatchery Operation Team Reports and the Columbia Basin Artificial Production Review conducted by the NWPPC in cooperation with managing agencies, tribes and the interested public. As a result of the reviews, specific recommendations regarding hatchery reform are being implemented as funding becomes available. The management entities continue to work together to develop facility reform priorities and to identify funding sources for modernizing all Columbia Basin artificial production facilities, including Mitchell Act hatcheries.
- All hatchery programs (conservation, recovery, mitigation) must be based on conservation and recovery strategies for natural populations. Salmon recovery cannot be achieved through hatchery improvements alone merge with bullet below. Hatchery reform (to address adverse impacts on natural populations) is being addressed through implementation of the ESA. Natural productivity can only be enhanced through improvements in tributary and mainstem (hydrosystem and estuary) habitats.
- Adult returns and, in the case of conservation hatcheries, their ability to contribute to the natural spawning populations, should be the goal of all hatchery programs.

**ISSUE 06-003            Success of hatchery reform measures uncertain.**

Several commentors questioned the Federal agencies ability to judge the success of hatchery reform measures in improving salmon recovery. The Federal Caucus was urged to use caution in putting too much weight on hatchery improvements in a comprehensive program to restore salmon populations in the Columbia and Lower Snake Rivers.

**RESPONSE 06-003**

Recovery of listed species (or ESU's) under the ESA refers specifically to natural populations and the ecosystems upon which they depend. Consequently, hatchery reform cannot be viewed primarily as a means to restore or recover naturally spawning populations, but rather, must be viewed as a means to modify or reprogram hatcheries in a manner consistent with achieving both conservation and sustainable fishery goals. In general, the Federal Caucus agrees with comments that "hatchery reform must be viewed as an ongoing experiment, not relied on as the means to recover Columbia Basin stocks." In this context, hatchery reform simply refers to the changes necessary for integrating conservation goals - for both naturally spawning and artificially propagated populations - into overall priorities and operations. For some facilities, reform may mean replacing non-native broodstocks with native broodstocks to reduce risks to



naturally spawning populations. For other facilities, reform may mean testing the efficacy of hatchery-origin adults to spawn naturally and help rebuild or reseed wild stocks.

The bottom line is that for salmon recovery to be successful throughout the Columbia River Basin, changes to all four Hs - not just a single H - must be implemented. Hatchery reform represents the perceived changes necessary for the “hatchery H” to meet its share of those obligations. Hatchery reform by itself will not achieve recovery goals. Ultimately, restoration and recovery of listed stocks or ESUs cannot occur if natural habitats are not capable of supporting viable, self-sustaining, naturally spawning populations.

**ISSUE 06-004            Disapproval of continued use of hatcheries in restoring salmon populations.**

Some commentators suggest that hatcheries have been overused and have actually had a detrimental impact. They suggested that emphasis should be placed on protecting and restoring habitat upon which fish depend. Tribal commentators reminded the Federal agencies of their treaty rights and claimed that there was no moral justification for favoring commercial fish hatcheries.

**RESPONSE 06-004**

Unfortunately, some populations are so low that no options other than hatchery preservation programs are available in the near term to conserve genetic diversity and guard against demographic risks of extinction. Also, there are legitimate reasons and legal obligations for mitigation production to replace fisheries from lost habitat. Production releases from these mitigation facilities need to be conducted in a manner that minimizes negative impacts on wild stocks through techniques such as mass marking fish for selective harvest, releasing fish in areas where known-stock terminal harvest can occur, and scaling production to levels that do not consistently result in significant unharvestable surpluses and straying problems.

Aggressive actions are needed to protect the best remaining habitat and to restore habitat that can be rehabilitated. It will be especially important to provide connectivity between areas of good habitat to accommodate various life history stages and strategies. Several recent scientific reports have argued for more normative conditions within rivers and watersheds. Although it will not be possible to return to the pristine conditions of the past, management efforts on all fronts should seriously consider more natural ecosystem processes over technological fixes. This includes actions within the hatchery system to modify management practices to produce healthier and more natural-like smolts, often raised at lower densities. The proper use of hatcheries in the future will be a matter of finding the appropriate balance of risk versus potential benefit as these production actions are integrated with other management actions in the hydro, habitat, and harvest arenas.

The Federal agencies have no intention of abrogating the treaty rights of native Americans or our trust responsibilities as Federal agencies. In fact, one of the five basic goals of the All-H Recovery Strategy is to assure tribal fishing rights consistent with United States’ treaty and trust responsibilities. Proper use of hatcheries in a comprehensive and balanced recovery plan will be

an integral part of Federal efforts to achieve that goal. There is recognition that there has been an over-reliance on hatcheries to mitigate for lack of action to adequately protect habitat. Efforts are currently under way to reform hatchery management in ways that reduce negative impacts of hatchery releases on wild stocks of concern and to use hatcheries, where appropriate, to conserve, preserve and, if possible, help rebuild depleted stocks.

**ISSUE 06-006          Hatchery practices to maximize genetic diversity.**

Several commentors expressed a preference for hatchery programs that improve and maximize genetic diversity of salmon stocks.

**RESPONSE 06-006**

A region-wide effort is currently under way to reform the goals, objectives and management of salmon hatcheries throughout the Pacific Northwest (collectively referred to as hatchery reform). These reforms recognize that conservation of native genetic resources is a goal that should receive a priority equal to or, in many cases, greater than the complementary goal of providing for sustainable fisheries. Such conservation goals are not restricted to captive broodstock programs, as is often assumed. On the contrary, conservation of genetic diversity is a high priority that should be an integral component of all hatchery programs.

**ISSUE 06-007          Jobs for Native Americans at fish hatcheries.**

Commentors suggested that Native Americans could be offered additional programs to replace the loss of income for eliminating or severely restricting fishing, including, but not limited to training for and preferential offers of choice jobs at dams and hatcheries.

**RESPONSE 06-007**

The Federal agencies agree with the importance and special needs of Native Americans. The Federal Caucus recommends re-programming several existing hatcheries with non-ESA's stocks and establishing opportunities for terminal fisheries.

**ISSUE 06-009          No evidence that hatchery salmon impact wild populations.**

Commentors that favored continuation of hatchery programs disputed the belief that hatchery-reared salmon adversely affect wild populations. Specific comments included:

- Cross-breeding is not a reasonable rationale. Hatchery fish return to their hatchery to spawn. Wild fish return to their upstream source for spawning and therefore do not mix.
- Insufficient substantiation that hatcheries are involved with wild salmon populations. No action except, perhaps, more research to determine if there is a need.

**RESPONSE 06-009**

A large number of monitoring programs have shown significant numbers of hatchery-origin adults spawning naturally in watersheds to which those hatchery adults returned or strayed. Salmon carcasses with clipped adipose fins are often found on spawning grounds with natural-origin (unclipped) adults, and increases in red counts have been correlated with the increased presence of hatchery-origin adults. The actual reproductive success of those hatchery adults is difficult to ascertain without detailed genetic analyses. In one genetic study where non-native broodstocks were used to augment sport fisheries for steelhead (in the Kalama River, WA), naturally spawning hatchery fish produced only 10-20 percent as many outmigrating smolts per adult fish as did wild (natural-origin) adults. In this latter study, the actual causes of the reduced reproductive performance of hatchery-origin adults could not be ascertained because both genetic and hatchery management practices were implicated. Nevertheless, it was generally concluded that direct interbreeding between hatchery and wild adults would certainly reduce the reproductive success of those wild adults irrespective of any long-term genetic effect. It is also fairly well established that hatchery fish released into non-native areas, or fish from non-native broodstocks, stray at a higher rate than fish from native broodstocks. Such straying can further compromise the genetic integrity of wild populations, thereby reducing their locally adapted productivities. Intensive fisheries that target hatchery fish can also severely overharvest wild stocks. For example, stocks of coho salmon in the lower Columbia River were nearly extirpated by intensive commercial fisheries on hatchery stocks in those areas.

Collectively, such studies demonstrate that hatchery reforms are necessary, not only to achieve conservation objectives but also to provide for sustainable fisheries. Hatchery programs that: (a) reduce the natural productivity of populations via interbreeding with non-native (or domesticated) hatchery fish; or (b) result in the overharvest of wild populations via fisheries that target hatchery fish clearly contradict the goals of conserving genetic resources and providing for sustainable fisheries. Transitioning to native broodstocks and implementing genetic management guidelines in all hatchery programs are only two of the many reforms intended to achieve both conservation and fishery management goals. The Federal Caucus is supporting these reforms in the All-H Recovery Strategy.

**ISSUE 06-010      Salmon from hatcheries using locally adapted stocks do not threaten wild populations.**

Strays into a local area from hatcheries that are using a locally adapted stock do not constitute a threat to the local stocks, some commentators said. In fact, hatcheries that use local area fish can be used for supplementation programs. The commentators said they recognize the importance of reducing or eliminating strays from distant stocks. The degree that barging contributes to straying should be studied and appropriate measures taken if it is shown that barging fish contributes to this type of straying.

**RESPONSE 06-010**

The use of locally adapted stocks, considered suitable for recovery efforts, not only lessens the genetic threat that straying presents to wild populations, it also reduces the rate of straying. These fish are better suited for local supplementation and stand a better chance of successfully rebuilding the designated wild population. With the increase in proposals to use hatchery fish to

rebuild runs, there is a corresponding increase in evaluation programs, designed not only to determine success, but to identify any problems that occur. These programs should identify any straying problems, and corrective measures would be taken. Regarding the straying of barged fish, there is currently one basin-wide study that identifies individual fish, and whether they have been transported or migrated in-river. This program, while not specifically designed to investigate straying, could provide preliminary information on the tendency of barged fish to stray at a rate greater than other fish. A study specifically addressing this question is needed, and if it is identified as a problem, measures should be developed to reduce the straying and protect populations at risk

**ISSUE 06-011            Revise the All-H Recovery Strategy to identify responsible party for hatchery operations.**

Commentators asked the Federal Caucus to identify specific responsibilities for hatchery operations and return implementation.

**RESPONSE 06-011**

The Federal agencies work closely with the states and tribes in various forums regarding hydropower, habitat, harvest, and hatchery issues. With regard to hatchery operations, the parties in the U.S. vs. Oregon lawsuit jointly developed a Columbia River Fish Management Plan, as ordered by the Federal court. That management plan consisted of commitments for managing harvest and hatchery production in the Columbia River Basin. The Columbia River Fish Management Plan has expired, and the parties are engaged in negotiations to complete a new plan. The All-H Recovery Strategy recognizes the U.S. vs. Oregon process as the appropriate forum for addressing hatchery operations issues.

**ISSUE 06-012            More research on genetics of hatchery fish.**

Some commentators suggested that more research should be conducted on the benefits of hatchery fish. They suggest that the Federal agencies evaluate hybrid vigor through cross-breeding studies to evaluate the benefits in developing a stock that is better suited for release.

**RESPONSE 06-012**

The Federal Caucus agrees that a key component of hatchery reform is the need for increased research on the genetics of hatchery fish. As mentioned in Section 3.3.1 of the All-H Recovery Strategy, the Federal Caucus identifies fundamental questions such as: How can artificial propagation be applied in a manner that not only avoids harm, but also assists in the conservation and rebuilding of wild runs? Can native broodstocks be developed in a manner that can potentially confer a net benefit to naturally spawning populations? How intense is natural selection in a hatchery environment and to what extent do hatchery populations respond genetically, especially after one or two generations of artificial propagation? Are differences in the reproductive performance between hatchery and wild fish under natural conditions due primarily to genetic differences or to the residual environmental (i.e. non-genetic) effects of

hatchery rearing that reduce natural reproductive success when those fish return as adults? We know, for example, that hatchery environments and rearing practices (water temperatures, feeding regimes, etc.) often cause adults to return at a younger age and smaller size, on average, than their wild counterparts. Does this smaller size at return reduce the natural reproductive success of hatchery-origin adults irrespective of any genetic effect? Can hatchery environments and management practices be modified such that potential genetic change or environmental effects on hatchery stocks can be significantly reduced or eliminated? Are existing hatchery stocks genetically capable of re-establishing naturally spawning populations? These examples of genetic-related questions need to be answered before we can ascertain the efficacy of hatcheries to assist with the recovery of naturally spawning populations.

**ISSUE 06-013            Mismanagement of hatcheries and harvest; sacrifice of hatchery fish.**

Several commentors questioned the need to kill hatchery-reared fish when there seems to be such a shortage of salmon for harvest. Other commentors believe that Federal hatchery operations appear to be in conflict with their goals. Commentors specifically mentioned the practice of deliberately killing “surplus” hatchery salmon that return to spawn and selling their eggs as fish bait is the topic of recent controversy. Using hatcheries to increase populations of salmon and killing surplus fish, appears to be a conflict in management priorities.

**RESPONSE 06-013**

This difficult issue points to the need for the comprehensive hatchery management plans being currently developed. There are several general types of hatchery programs in the Columbia River Basin. Some hatcheries focus on harvest enhancement and others on rebuilding natural spawning populations (conservation). Because of the current emphasis on rebuilding ESA-listed stocks, some harvest enhancement hatcheries are realigning their programs to be more supportive of recovery efforts. Each type of hatchery may occasionally have adults entering the hatchery that are excess to production capacity. How a hatchery deals with the excess depends on a variety of factors, including: location, relationship to nearby natural spawning stocks, production levels at other facilities, number of excess fish and disease status.

Hatcheries can have excess returning adults for a number of reasons, some predictable and some not. Unfortunately, there are times when the excess stock may not be compatible with where there are program shortages. For example, in the Methow River Basin, Winthrop NFH is a harvest enhancement facility that is moving toward emphasis on rebuilding the local listed spring chinook stock. The hatchery is in the process of phasing-out a non-native, non-listed stock. In 1999, Winthrop NFH destroyed about 60,000 unfertilized eggs from non-native, out-of-basin strays that entered the broodstock. The hatchery that produced the strays already had surplus adults and could not accept the eggs. Continued propagation of a stray, non-native fish at Winthrop NFH was not consistent with the change to a conservation program. Hatchery production levels are limited by available pond space and good quality water. Rearing too many fish can compromise fish health and quality and risk of catastrophic loss and reduced survival probability for smolts released. Increased disease problems in the hatchery may also put downstream natural populations at greater risk.

There are a number of ways “excess” hatchery adults can be handled, depending on a number of factors. Fish managers recognize that some ways of dealing with excess production in the past represent poor fish culture and are potentially harmful to nearby natural populations.

Historically, many hatcheries have tried to rear too many fish for their capacity, which has led to disease problems and negative impacts on all fish in the facility. Another solution to excess returns has been to release excess fry into nearby streams. It has, however, been established that fry plants for many species often fail to produce measurable increases in wild production and can create risks for wild populations. At times hatcheries with excess fish may transfer them to another station, but that option is not always available. Most historical attempts to transfer stocks to distant locations have failed and are now recognized as a poor management practice, which can pose risks to natural stocks. A conservation hatchery may be able to release excess hatchery adults (those similar to the local native stocks) to spawn naturally, if the stream is not seeded to capacity and the number of potentially “less fit” hatchery stock does not swamp the local population.

In unique situations it may be possible to transport excess hatchery adults downstream to pass a second time through existing fisheries, but this can be costly and often does not provide a meaningful increase in harvest. Once hatcheries have met egg needs and appropriate out-plantings have been considered, fish may be provided for human consumption to tribes, food banks and other organizations. In some instances, excess fish eggs or carcasses may be sold, but in recent years, there has been more emphasis on returning spawned carcasses to the stream, as a way of providing important nutrients beneficial to natural populations.

In summary, there many ways to deal with excess hatchery fish, but each hatchery has its own unique circumstances that dictate the most appropriate path to pursue. This may result in discarding excess eggs or surplus adults that are not appropriate for use in recovery of listed natural populations.

**ISSUE 06-016                      Hatchery fish should not be considered sufficient mitigation for losses of wild salmon.**

Commentors emphasized the importance of saving wild salmon and suggested that “mitigation” programs were insufficient.

**RESPONSE 06-016**

In the Columbia River Basin, hatchery programs have been initiated to mitigate for natural fish production lost to various land management activities, including the construction and operation of the FCRPS. In the Columbia River Basin, these mitigation programs are generally mandated by legislation or required by court order. The state, Federal and tribal co-managers in the basin are aware of the potential impacts of mitigation on wild salmon populations and have reformed and will continue to reform mitigation programs to protect, conserve and recover wild salmon populations, where possible. Where it is determined that mitigation programs have no adverse

impacts to wild salmon populations, these programs will continue to be managed to provide a sustainable fisheries for tribal and non-tribal interests.

**ISSUE 06-017      Hatcheries have been unfairly portrayed and represent an important option for restoring salmon stocks.**

Several people noted that hatcheries could better contribute to salmon recovery in the region if they followed standards established by successful Native American and Alaskan hatcheries. These people believe hatcheries have been unfairly maligned as an alternative because of management problems with many of the Pacific Northwest hatcheries that are not inherent problems of hatcheries.

**RESPONSE 06-017**

The Federal Caucus recognizes the important role that hatcheries are playing in the conservation and recovery of listed salmon stocks in the Columbia River Basin. In the Pacific Northwest there is a region-wide effort underway to reform hatcheries in a manner consistent with achieving both conservation and sustainable fishery goals. These reforms are occurring through forums such as the Northwest Power Planning Council's Artificial Production Review and the reports completed by the Integrated Hatchery Operation Team. These reviews have included broad regional involvement and relied on the expertise and experience of tribal, state, and federal hatchery managers. As a result, specific recommendations regarding hatchery reforms are being implemented at Columbia Basin artificial production facilities as funding is made available. The Federal Caucus is supporting these reforms in the All-H Recovery Strategy and expects the effort to result in a significant improvement in the standards for operation of all salmon hatcheries throughout the Columbia River Basin.

## 7 HARVEST

### **ISSUE 07-001 Harvest rates need to be reduced or eliminated.**

Many people feel strongly that various forms of overharvesting are primarily responsible for the imperiled state of the salmon, either in combination with or instead of the dams. The cumulative impact from all forms of harvesting need to be assessed, including ocean drift netting, trawling, and overharvesting with gill nets by Native Americans. Some individuals believe that sport fishing also needs to be reduced and better controlled. The position of many commentors is that harvest rates are controllable elements that can make a significant positive impact on salmon stocks. Therefore, harvest restrictions need to remain key components of the salmon restoration program. Some commentors believe that more stringent restrictions or elimination of fishing should occur before dams are breached, and others stated that as long as harvests are allowed, the salmon will never recover, even with the breaching of the dams. Commentors support the All-H Recovery Strategy in its statement that a 4 percent increase in fall chinook can be achieved without even partial dam breaching by reducing in-river and ocean harvests by 50 percent (or either fishery by 75 percent). For example, in-river harvests should be limited to only Native American tribes that have established treaties. A number of people expressed opinions that harvest should be eliminated in certain locales or for a period of time (e.g., river fishing should be curtailed from two to four years, or tribal and commercial fisheries should have a 10-year moratorium). Some commentors expressed a more extreme position that all commercial and Native American fishing should be stopped, including ocean fishing in U.S. and Canadian waters. It was suggested that commercial and tribal fishermen be paid not to fish.

### **RESPONSE 07-001**

Overfishing has been a historical factor in the decline of many Columbia Basin natural stocks, particularly those harvested in mixed-stock fisheries and/or at rates designed to fully harvest hatchery fish. Many reforms in fishery harvest management have been implemented in recent years, leading to significant reductions in harvest rates on the listed ESUs. In addition, where overfishing is not the reason for declines, additional harvest constraints may provide an important if temporary increase in spawning escapement, but may do little to address the long-term problems of productivity. With very few exceptions, current harvest rates on Columbia Basin ESUs are now reduced to such low levels that additional constraints would provide little additional benefit to recovery. This does not mean that previous harvest reductions were unimportant; indeed had the reductions not occurred, some stocks likely would already be extinct.

Recent reductions in catches and harvest rates have come at great cost to the fishing sector. Harvest rates on Snake River spring and summer chinook in the Columbia River, for example, have been held to very low levels (2-9 percent) for decades. The tribes have not had regular commercial fishing seasons on fish in the Columbia River since the 1970s, yet recovery still has not occurred. Lower mainstem and ocean harvests in non-tribal fisheries have been greatly reduced since the 1970s and 1980s. Even Canadian fisheries that impact Columbia Basin stocks,



now constrained by a new agreement under the Pacific Salmon Treaty, have been reduced to a fraction of former levels.

A fundamental question implicit in many of the comments relative to harvest is this: how much should harvesters be impacted relative to the other Hs? The overriding consideration is the survival and recovery of the species. Beyond that, the Federal Caucus seeks to balance a number of sometimes-competing considerations, including trust obligations to the tribes, which must by law be given great weight. The social and economic impacts to communities dependent on fisheries are also important, as is the extent of harvest reductions already implemented. Having taken these various considerations into account, it is the view of the Federal Caucus that harvest impacts must continue to be constrained to levels that contribute to and do not thwart the broader recovery effort. However, in the long-term, the Federal Caucus supports the goal of restoring salmon and steelhead runs to levels that meet the needs of the tribes and fulfills the trust and treaty obligations of the Federal government, and that provides for fishing opportunities for Northwest citizens.

**ISSUE 07-002            Harvest methods or locations need to be modified.**

A number of individuals believe that gill netting should be banned because it causes incidental takings of ESA-listed salmon. It was also expressed that the gill and set nets located from the mouth of the Columbia River upstream to McNary Dam must be having an effect and should be studied. Others stated that there should be a five-year moratorium on fishing with nets in rivers and Puget Sound to see what happens to the salmon stocks. Some commentors state that the use of gill nets is in conflict with attempts to save an endangered species and maintain a sustainable harvest. They believe that fishing locations should be changed from the mouths of rivers to terminal (tributary) locations to decrease non-selective in-river fishing and benefit weakened stocks. According to some comments, commercial and tribal fishermen in the lower reaches are catching excessive numbers of fish, a portion of which should be available for harvest in the upper reaches. It was suggested that Native Americans should fish off of the fish ladders to facilitate the release of protected species. Rather than controlling harvest rates, options should include a change in harvest methods, location, and/or equipment to allow increased taking of hatchery fish with less impact on native stocks. Complaints were made that commercial fishermen are not releasing wild fish like sports fishermen have to do. It was stated that in-river fishing should be limited to mouths of the rivers and that harvests at these locations should be allowed only after an adequate number of fish, for the available spawning sites upstream, have migrated past the rivers' mouths. Harvests would be allowed, but only for half of the remaining stock and for only the smaller individuals.

**RESPONSE 07-002**

With the abundance of many natural stocks very low and incapable of sustaining much harvest impact, it will be increasingly important and, in some cases essential for harvest to become more selective. Another choice may be to reduce or eliminate harvest in certain fisheries until recovery succeeds. This poses a significant management challenge: how to provide harvest opportunities on the more abundant stocks, while reducing and limiting incidental impacts on

listed stocks. Several fishery management tools have been employed over the years to accomplish this goal. The time and location of fisheries are managed to avoid weaker stocks. There has also been a general trend toward known-stock fisheries in designated areas, a trend that will need to continue for the foreseeable future.

With so many listed species, there are few times and places available where fisheries can occur without the presence of listed fish, and for this reason, fishing gear and methods will have to change if fisheries are to survive. Fisheries that utilize lethal gear, such as gill nets and troll gear, will have to be limited to known-stock areas and/or be constrained to very low incidental-impact standards. Non-lethal gear and visual discrimination between natural and hatchery stocks will be increasingly important to the survival of fisheries, particularly recreational fisheries.

It is noted that many tribal fisheries utilize gill nets. The tribes have reduced fishing, managed the times, locations and in some cases the types of nets used, and focused harvests on stronger stocks. There are, however, practical and legal limitations on how much additional change can be visited on tribal fisheries. The Federal Caucus will continue its efforts to work with the tribes to diminish the impacts on listed fish and find alternative fishing opportunities. The elimination of tribal fisheries, as some suggest, is entirely inconsistent with the law and violates trust obligations to the tribes.

**ISSUE 07-003            Ocean harvest has a significant adverse effect on salmon stocks.**

Numerous commentors believe that excessive ocean harvesting is occurring and that harvest is not being considered as a factor causing declines in salmon stocks. There are concern that ocean fishing has doubled since the 1970s, and that sophisticated fishing equipment allows the harvesting of thousands of tons of salmon. These commentors blame declining salmon counts on offshore harvests. Some believe that the commercial fishing season in Alaska should be reduced. Others feel the international commercial fishing industry should be responsible for developing the salmon fishery. At a minimum, they say, the Pacific Salmon Treaty must be implemented. Targeted ocean seasons should only be opened after scientists identify that salmon populations are not in jeopardy. In addition to limited harvest, some believe that ocean harvest should not be allowed within 200 miles of the coastline.

**RESPONSE 07-003**

Record and near-record catches of some species of salmon, particularly in northern areas like Alaska, has led to the erroneous perception that enormous quantities of Columbia River listed salmon are being taken in those fisheries. Of the 12 Columbia River ESUs listed under the ESA, nine are not appreciably affected by ocean harvests. These include the five steelhead ESUs (Lower Columbia River, Upper Willamette River, Middle Columbia River, Upper Columbia River, Snake River); Snake River sockeye; Columbia River chum; Upper Columbia River spring chinook; and Snake River spring/summer chinook. This conclusion is derived from data collected over many years, including millions of coded-wire tags recovered in fisheries from California to Alaska, and from other scientific methods, such as genetic stock identification techniques for determining the origin of salmon catches.

Three ESUs — Lower Columbia chinook, Upper Willamette chinook, and Snake River fall chinook — are taken in significant numbers in ocean fisheries. Because their migratory habits differ, they are affected differently by various fisheries. Lower Columbia chinook are comprised of the spring stocks and fall “tule” and “bright” stocks. The tules are most significantly impacted in Canadian fisheries off the West Coast of Vancouver Island (WCVI) and Washington State, whereas the spring and bright stocks migrate farther north, as do the Upper Willamette and Snake River fall chinook. Because approximately 60 percent of the ocean catch of the Lower Columbia ESU occurs off WCVI and in fisheries managed by the Pacific Fisheries Management Council (PFMC), substantial reductions in ocean exploitation rates can be expected as a result of the new agreement between the United States and Canada under the Pacific Salmon Treaty and continued application of NMFS’ jeopardy standards to PFMC fisheries off Washington and Oregon. (It is presumed that both the PST agreement and NMFS’ jeopardy standards will continue to limit ocean impacts on these ESUs.) Because Upper Willamette chinook and Snake River fall chinook tend to migrate farther north, showing up in ocean catches off northern British Columbia, they will benefit somewhat less from the new treaty. Nevertheless, the impact rate for these ESUs in these northern fisheries will remain quite small, and certainly much reduced from base period (1979-1982) levels. The exploitation rate on SRF chinook in Southeast Alaska fisheries, for example, averaged about 4 percent for the years 1993-1996. To put the numbers in perspective, even the total elimination of fishing in Southeast Alaska, an action that obviously would have devastating impacts to Alaska’s fishing-based communities, would save 100-200 Snake River fall chinook salmon. Many of those fish would presumably die before they made it back to the Columbia, either in Canadian fisheries or from natural causes.

The suggestion that salmon should not be harvested within 200 miles of the coastline would basically eliminate all salmon fisheries, as most all ocean-caught salmon are taken in near-shore fisheries. Very few are caught on the high seas.

**ISSUE 07-004            Harvesting is not the problem impacting the salmon.**

A number of people take the position that harvest is not impacting salmon stocks. They base their view on the continually decreasing harvest limits placed on fishermen without any associated improvements in salmon stocks being observed. Some people expressed concern over the cumulative losses to salmon, considering any factor that causes a loss of salmon as a “harvest” issue. They note that 80 percent of salmon loss is accounted for by the dams, whereas fisheries account for 4 percent of the loss. Many acknowledge that commercial and sport fishing influence salmon and steelhead populations, but believe that the dams are the main factor accounting for the diminished stocks of these fishes.

**RESPONSE 07-004**

As noted above, overfishing has played a role historically in the decline of many stocks. Harvest policies based on maximizing yield in mixed stock fisheries along with fishery regimes that emphasized fully harvesting hatchery stocks resulted in high harvest rates on natural stocks. While many natural stocks are capable of sustaining fairly high rates of harvest--as much as 70 percent for some species when ocean and freshwater conditions are favorable--those rates

were often exceeded. Institutional failures, such as the impasse between the United States and Canada in implementing the Pacific Salmon Treaty, exacerbated the already-difficult task of managing transboundary stocks and derailed cooperative solutions. This sometimes resulted in fishery allocation taking priority over fish conservation.

For many decades, chronic degradation of habitat, construction and operation of dams, and deleterious effects of past hatchery practices have combined to reduce the productive capability of natural stocks. Add to those problems the effect of a major downturn in ocean productivity since the mid-1970s, and it is clear that the productivity of wild stocks is now much reduced from historical levels. To the extent that any harvest can be sustained today, it is at much lower rates.

Fortunately, harvest management began to respond to these problems several years ago, greatly reducing harvest impacts on many of the now-listed ESUs. Improved ocean fishery regimes are now in place under the Pacific Salmon Treaty, regimes that base annual ocean harvests on abundance, rather than fixed quotas. Weak stock management principles are being used for most fisheries and the rest are moving in that direction. Although these recent harvest management reforms have not “worked” to recover the stocks, that is not evidence, as some have suggested, that harvest reductions have been ineffective. Indeed, had harvest reductions not occurred, some of the listed populations already would have gone extinct.

Beyond the responsibility of harvest managers to address natural fluctuations in abundance and regardless of the reasons salmon are in a precarious condition, it may be necessary for more harvest reductions to avoid extinction and contribute to recovery. Harvest reductions are the most immediate way to reduce mortalities of listed fish. Other recovery efforts may take too long to mitigate near-term extinction risk. But the Federal Caucus recognizes that harvest reduction offers no panacea; there is a limit to what can be accomplished, a limit that may already have been reached for some ESUs. No amount of additional harvest reductions will solve problems rooted in the other Hs. Only a comprehensive approach--one that addresses all of the factors for decline--has any chance of achieving recovery of the listed species.

**ISSUE 07-005            No further harvest restrictions should be enacted because of economic hardships.**

Many commentators believe that harvest reductions have had adverse economic effects. Some individuals expressed concern that last-minute closures of fishing seasons jeopardize sports fishing trips and the associated economies. Healthier runs are necessary so such closures will not occur, they state. Others feel that some fisheries have been severely restricted (U.S. commercial and sports fisheries), while others (Native American and foreign fisheries) have been left unchecked. Some believe that harvest levels are so low now, that any further reductions would not provide any benefits to the fish stocks. Others want to know how commercial and tribal fishermen and other associated businesses are going to be compensated if there are further restrictions on harvests.

**RESPONSE 07-005**

Adverse economic impacts may be a part of any recovery actions. As noted above, it is recognized that many important harvest management reforms, some involving severe reductions in the fisheries, already have been taken in recent years. Additional reductions would provide only marginal long-term benefits for most of the listed ESUs, though short-term reductions may still be warranted. The Federal Caucus acknowledges that stability in the management of fisheries is an important consideration, since frequent last-minute changes in regulations can have severe economic consequences. Contrary to what some commenters state, tribal fisheries have been severely curtailed. The only foreign fishery impacts of any meaningful consequence occur in Canadian fisheries, and those now will be greatly constrained because of the new agreement under the Pacific Salmon Treaty. No specific program has been developed by the Federal Caucus for compensating fishermen and associated businesses for lost catch opportunity resulting from the recovery effort, but mitigation studies will be part of future implementation activities. The Economics Issues in this document provide more in-depth coverage of these concerns.

**ISSUE 07-006            Impacts of dam breaching on harvest and harvest-associated industries.**

Some people said a restored salmon fishery would contribute at least as much to the regional economy as dam operations currently do. Several of these individuals believe that the evaluation of the economic benefits of dam removal was inaccurate in that it did not consider the total economic impacts on commercial, Native American, and sports fishing and associated industries, such as lodging and food. In contrast, others believe that the reservoirs support a significant sport fishery for steelhead, bass, and other fish (in addition to recreational and energy benefits). Some commentators doubt that dam removal would increase sport fishing and lead to an economic boost in certain areas.

**RESPONSE 07-006**

The COE' Lower Snake River FR/EIS includes a comprehensive economic analysis of fishery-related impacts related to reconfiguring the Lower Snake River dams. The economic and social impacts of fishery management options outlined in the All-H Recovery Strategy, in particular those outside the FCRPS project area, were not studied in as much detail as those within the project area. One of the benefits of the public outreach process was that the Federal Caucus received a great deal of input on such topics as the economic and social consequences of further reductions in ocean fisheries. This input has been taken into account in the formulation of the Caucus' recommended options.

**ISSUE 07-007            A better understanding of the impact of Canadian, Alaskan, Northwest and other offshore fisheries is needed.**

Some people believe that a better understanding of the migratory behavior of the listed species is needed in order to adequately determine the impact of ocean fishing. Overall, better information needs to be developed on the impact of ocean fishing on Columbia River stocks.

**RESPONSE 07-007**

Knowledge of the migratory behavior of salmon is based primarily on an extensive record of coded-wire tagging studies conducted since the mid 1970s. Millions of these tags have been placed in Columbia River salmon. Fishery monitoring programs have been routine for decades, recovering CWTs in fisheries ranging from California to Alaska. Based largely on these extensive databases, fisheries managers have a fairly long series of estimates of the relative impact of ocean fisheries on various listed ESUs. Even so, additional studies and monitoring programs are continuing and expanding to refine our knowledge of ocean migratory habits of salmonids and the impacts of fisheries on both listed and other species.

**ISSUE 07-008            Predatory species are impacting harvests.**

Many people commented that predatory species are imperiling salmonids. It is believed that the predators will eventually decrease stock levels needed to support Native American, commercial, or sport fishing. If fish population levels are to increase to their historic levels, predator populations need to be decreased to their historic levels, some state. Other commentators believe that predatory species, particularly seals, should be harvested. They feel this would lessen the impact on migratory fish and provide a secondary commercial industry (e.g., through seal skins and seal jerky).

**RESPONSE 07-008**

Healthy salmon populations are not unduly threatened by natural predator populations. The problem in the Pacific Northwest is that many of our salmon populations are far from healthy, and their natural life cycles have been greatly altered in some cases. At the same time, certain predator populations have increased dramatically, sometimes to the detriment of weakened salmon populations. It is, unfortunately, no small undertaking to manage the predator-prey relationship between salmon and predators, whether they be migratory birds or marine mammals protected under various state and Federal laws. The Federal agencies are continuing its efforts to reduce bird predation on juvenile salmon (e.g., the Caspian tern predation in the lower river). Additionally, programs continue to control juvenile predation by non-native fish species in the mainstem. There are no plans to kill marine mammals protected by Federal law and the Federal Caucus is not recommending such action. Marine mammals are not known to be a serious impediment to the recovery of listed Columbia Basin salmon.

**ISSUE 07-009            Native Americans are over-fishing and indiscriminately harvesting fish.**

Some people believe that the Native Americans are harvesting more fish than they need (e.g., selling fish would indicate a surplus catch). Native Americans should be paid to remove their nets in order to prevent over-fishing and indiscriminate harvesting, according to some commentators. Others feel that Native American fishing rights and salmonid recovery and survival may be incompatible.

**RESPONSE 07-009**

It is well established in U.S. Constitution and Federal law case that tribes have a right to harvest salmon in their usual and accustomed areas, both for commercial purposes and ceremonial and subsistence uses. Tribal fishing is not the reason salmon in the basin are in jeopardy. As noted previously, the Federal Caucus continues to work with the tribes to find ways both to meet their treaty-protected fishing rights and contribute to the overall recovery effort. This will include but is not limited to finding ways to reduce impacts on listed fish while affording fishing opportunities on abundant stocks. The reader should refer to Tribal Issues for a more in-depth coverage of these concerns.

**ISSUE 07-010            Adequate space and time for harvest are not provided.**

Some people express concern that Alaska commercial fishermen have a limited fishing season and a limited area within which they are allowed to harvest salmon. They further believe that this penalizes the fishermen from getting the share of the harvest they are paying to produce (e.g., through financial support of state-of-the-art hatcheries).

**RESPONSE 07-010**

Fisheries in Southeast Alaska will continue to be constrained to levels provided under the new Pacific Salmon Treaty agreement. The fairness of the allocation of harvestable hatchery fish is a subjective matter settled in negotiations for the new agreement. As a practical matter, there are limits to the ability of Alaska's ocean fisheries (or any ocean) to use area and time management in order to selectively harvest abundant runs, such as hatchery fish, and avoid increasing impacts on listed species. The only practical means to limit those impacts is through controls on the total harvest, which invariably means limiting fishing seasons.

## 8 INSTITUTIONAL AND REGULATORY ISSUES

**ISSUE 08-001**      **Does the All-H process conflict with laws governing water use in the states within the region?**

The State of Idaho has indicated it will not support any additional release of water that is not authorized by state law governing water management. The All-H Recovery Strategy needs to discuss whether proposed alternatives are consistent with state water laws.

**RESPONSE 08-001**

The All-H Recovery Strategy and the Biological Opinion maintain that additional water for flow augmentation from above Brownlee Dam should come from willing-seller, and from other arrangements that are consistent with applicable state law.

**ISSUE 08-002**      **Commitments made through the authorization of Columbia and Snake River projects must still be honored.**

Some commentators point out that years ago, the Pacific Northwest and the Federal government made a commitment to the economic betterment of the region through development of the Snake River dams. Previous commitments were made to the irrigation farming and transportation industries. Ways need to be found to manage the recovery program with recognition of human needs, they say. Breaching dams will reduce water available for irrigation and power production. Other commentators indicated loss or reductions in these services would not be significant because economic forces are changing the character of employment in the Northwest. The All-H process needs to clarify how previous commitments made to the residents of the region will be honored in the recovery program.

**RESPONSE 08-002**

The COE fulfills the commitments Congress made to the people of the Northwest with regard to the Lower Snake River dams by ensuring that authorized uses of the Lower Snake River facilities continue until Congress chooses to change them.

**ISSUE 08-003**      **Are changes to the current project configuration consistent with the United States' position on global warming?**

Commentors suggested that replacement power is likely to be thermal-based generation from fossil fuels, which creates a potential for increased emissions to the atmosphere and potential impacts to global warming. President Clinton, in his 2000 State of the Union address, expressed considerable concern over actions that have the potential to increase global warming. The All-H process should address the potential of contributing to the global-warming phenomenon from proposed alternatives.

**RESPONSE 08-003**



The power replacement strategy described in the COE Lower Snake FR/EIS relies on gas-fired CTs. Under the strategy, CO2 emissions would increase by 4,187,000 tons from the baseline (existing) condition. This increase, which could occur with dam breaching, is associated with the operation of all the power plants in the Western System Coordinating Council region and the operation of 1,550 MW of new CTs that were assumed to be built. (See the Air Quality Appendix of the Snake FR/EIS.) Suggestions have been made that a conservation and renewable resources approach to replacing the power would result in no net changes in CO2 emissions from the base condition.

**ISSUE 08-004            River flow operational moratoriums.**

Commentors point out that in response to flow augmentation demands, the Bureau of Reclamation (Reclamation) has instituted a moratorium on excess uses of water. The goals of the All-H Recovery Strategy are not achievable with this moratorium in place.

**RESPONSE 08-004**

Reclamation, along with the COE and BPA as the “action agencies,” are currently in consultations with NMFS and USFWS to avoid jeopardy in operating the FRCPS. Until those consultations are completed and the terms and conditions are identified to avoid jeopardy to the listed species, the Federal agencies believe it is premature to consider lifting any water use moratoriums.

**ISSUE 08-005            Are the proposals contained in the All-H Recovery Strategy in compliance with the Clean Water Act?**

Several commentaries raised the issue of whether the various alternatives identified comply with the Clean Water Act. Comments indicate a need for measuring and reporting the total daily load of listed pollutants that exceed standards. States are required to inventory rivers and list Total Maximum Daily Load allowable. In addition, a management plan may be required and the Federal government may have to take a lead in developing such a plan. The Clean Water Act would require at least a partial removal of existing dams. Commentors identified potential costs of \$125 million for compliance with the Clean Water Act under alternatives that leave the dams in place. Other commentors expressed concern that agencies are still debating whether the Clean Water Act actually applies for the kinds of actions anticipated, and another indicated the Act did not apply to the Upper Snake River Basin and should not be used to further regulate those properties. The State of Washington and others asserted that state water quality standards apply to the Snake River, so any alternative will be subject to those regulatory requirements. The final All-H Recovery Strategy needs to identify whether the All-H proposals comply with the Clean Water Act and, if found deficient, identify how compliance will be achieved.

**RESPONSE 08-005**

The CWA does not require partial removal of existing dams. The Federal operating agencies are committed to developing a Water Quality Implementation Plan to address temperature and

dissolved gas issues and balance CWA with ESA fish passage needs. In the short-term the Federal agencies will comply with CWA in providing voluntary spill for fish passage.

**ISSUE 08-006            Is a failure to act in a way that will assure increases in salmon stocks a violation of commitments made to Native American tribes?**

A number of commentors said a failure to increase salmon stocks represents a significant violation of laws and regulations including the Treaty of 1855, and the June 5, 1997, Secretarial Order on “American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act.” Compensation to competing interests in the Columbia River would be substantially less than the value lost if salmon become extinct. Reparations required for the eventual loss of fish could approach several billion dollars. Dams impacted the lives of individuals living in coastal communities, particularly those who were part of the Palmer-Stevens Treaty Tribes.

**RESPONSE 08-006**

Despite critical uncertainties such as poor ocean conditions, the position of the Administration is that “[I]t is our policy that the recovery of salmonid populations must achieve two goals: (1) the recovery and delisting of salmonids listed under the provisions of the ESA; (2) the restoration of salmonid populations, over time, to a level to provide a sustainable harvest sufficient to allow for the meaningful exercise of tribal fishing rights.” Letter from Terry D. Garcia, Assistant Secretary of Oceans and Atmosphere, Department of Commerce, to Ted Strong, Executive Director Columbia River Inter-Tribal Fish Commission (July 21, 1998). The Federal agencies in the Caucus are working to implement this policy and to avoid situations where the government may be liable to Native American tribes for violations of laws and treaties related to fishing.

**ISSUE 08-007            The ESA must be complied with in the implementation of any alternatives.**

Commentors emphasized that efforts to recover salmon are driven by the mandates of the ESA. Solutions to the salmon problem are likely to require the Federal government to take aggressive actions on how private land and water are used, and litigation is likely, according to some commentors. Compliance with the ESA is possible through implementation of the status-quo based alternative. Some commentors expressed a concern about a lack of consistency between the two agencies charged with implementation of the ESA.

**RESPONSE 08-007**

The ESA requires NMFS to list salmon and steelhead as threatened or endangered, as appropriate; to craft recovery plans for listed species; to prohibit “take” of such species; and to ensure Federal agencies do not jeopardize the continued existence of listed species. The All-H Recovery Strategy is intended, in part, to encompass NMFS’ effort to meet each of those requirements. It describes the manner in which NMFS will use its authority to secure improvements in salmon productivity across all salmon life stages. In effect, it provides a

roadmap for achieving ESA compliance across all jurisdictions throughout the Columbia Basin. The Federal Caucus, in its current form and as it is contemplated in the revised paper, is the primary means for ensuring consistency in the way the ESA is applied by NMFS and USFWS. The implementation chapter in the All-H Recovery Strategy further addresses these concerns.

**ISSUE 08-008            Compliance with the Coastal Zone Management Act.**

Commentors indicate that the Coastal Zone Management Act places requirements on Federal agencies. The All-H process must consider protection of salmon in the context of the Coastal Zone Management Act, as well as other state and Federal laws.

**RESPONSE 08-008**

The Caucus agencies will comply with the Coastal Zone Management Act where applicable to specific activities and development projects.

**ISSUE 08-009            Compliance with the Clean Air Act.**

Commentors suggested that breaching the Snake River dams would increase dust in the construction area. The State of Washington is empowered to implement the Clean Air Act, including the regulation of windblown dust. The All-H process should identify how it intends to comply with requirements of the Clean Air Act, in any alternative likely to be out of compliance.

**RESPONSE 08-009**

Fugitive emissions from construction related activities associated with Alternative 4, Dam Breaching, will increase for the time of construction. However, standard construction practices would be used to reduce the effect of these construction-related emissions. In addition, by implementing dam breaching over a 2-year period the total emissions would be reduced for each construction year.

Chapters 4 and 5, Draft FR/EIS have discussions on the existing air quality conditions, along with state requirements, and on the effects to air quality of the 4 alternatives being considered on the LSRP. The Revised Draft FR/EIS will expand these discussions further. In addition, Appendix P, Air Quality discusses air effects and requirements in greater detail.

**ISSUE 08-010            Cumulative Effects.**

Commentors stated that because the National Environmental Policy Act regulations require studies to include a discussion of indirect and cumulative impacts and the Clean Water Act calls for a consideration of cumulative effects “to the extent reasonable and practical,” the All-H Recovery Strategy should discuss the cumulative ramifications of proposed or potential actions.

**RESPONSE 08-010**

The All-H Recovery Strategy is not a study under NEPA or the Clean Water Act. As a draft outline for a conceptual All-H Recovery Plan, the paper is a document of recommendations. As Caucus agencies individually or collectively propose to take actions discussed in the All-H Recovery Strategy, they will undertake the appropriate NEPA studies and discuss direct, indirect and cumulative impacts. For instance, anticipating a change in regional policy direction for fish mitigation and recovery, BPA has already initiated an EIS under NEPA to examine implementing the various policy alternatives being discussed in the NWPPC's Multi-species Framework process, the All-H Recovery Strategy, and other forums. Information on BPA's Fish and Wildlife Implementation Plan EIS can be found on the Web at <http://www.efw.bpa.gov/cgi-bin/PSA/NEPA/SUMMARIES/FishWildlifeImplementation>.

**ISSUE 08-011            BPA is required to provide inexpensive power to citizens in the Northwest.**

Provide for development of low-cost hydropower in the Pacific Northwest, some commentors raise historic arrangements in the Northwest Power Planning Act (NWPPA). They suggest that there are goals between NWPPA and the ESA, which requires that BPA assure there are salmon left in the river. Commentors urge Federal agencies to reconcile these conflicts.

**RESPONSE 08-011**

Under the Northwest Power Act, BPA does have the responsibility for providing the Pacific Northwest an adequate, efficient, economical and reliable power supply. The NWPPC also requires BPA to protect, mitigate and enhance fish and wildlife affected by the FCRPS and treat fish and wildlife equitably along with other purposes of the hydrosystem. While the NWPPA covers all species, the ESA requires agencies to avoid jeopardizing listed species and to aid in their recovery. By outlining how all agencies can contribute to the survival and recovery of listed species, the All-H Recovery Strategy will help reduce the potential conflicts between the mandates of ESA and the Northwest Power Act.

**ISSUE 08-013            Lax enforcement of existing pollution laws could be a cause of increased incidences of cancer.**

Commentors suggest that contaminated salmon may be a cause of increased incidences of cancer among Native American people. Salmon is a staple of Native Americans diets.

**RESPONSE 08-013**

Water-borne contaminants, especially chemical contaminants, and how they enter the food chain and lead to human disease is a serious concern. In order to address this concern, studies need to be done to determine sources of contamination and whether they can be addressed with better enforcement of existing pollution laws. Such actions are outside the scope of the All-H Recovery Strategy but some aspects of water quality may be addressed during implementation of specific basin and subbasin measures.

**ISSUE 08-014            Role of the Pacific Salmon Treaty.**

The Pacific Salmon Treaty was implemented with assistance from the published 1995 Proposed Recovery Plan, which established a recovery program for salmon. There is concern that the All-H process will attempt to use the Pacific Salmon Treaty to impose additional restrictions on salmon fishing, according to some comments. The All-H process is unclear on potential effects to salmon fishing in Alaska and needs to be more specific. The Pacific Salmon Treaty has been working for Alaska and provides certainty to the fishing industry. The All-H process needs to clarify how the Pacific Salmon Treaty is being considered in the decision process.

**RESPONSE 08-014**

For ocean fisheries, particularly including the Southeast Alaska fisheries, the All-H paper specifically calls for full implementation of the 1999 Agreement between the United States and Canada under the Pacific Salmon Treaty. That specific recommendation is not modified by the general references contained throughout the draft recovery strategy that harvest should be “capped at” or “constrained to” recent levels and opportunities aggressively pursued to reduce harvest further where necessary and effective.

The United States is fully committed to the 1999 PST agreement, and is actively implementing that agreement. The result of long and exceedingly difficult negotiations between the United States and Canada, the agreement includes a comprehensive abundance-based management regime for Chinook salmon. For the three ocean “AABM” fisheries, which includes the Southeast Alaska fishery, annual Chinook catches will vary pursuant to an agreed schedule of abundance indices and catches. Our use of the terms “caps” or “constraints” in the All-H general recommendations should be understood to mean the annual harvest limits specified in the 1999 PST agreement, for both the “AABM” fisheries and the “ISBM” fisheries.

**ISSUE 08-015            Compliance with the Regulatory Flexibility Act.**

The All-H process must demonstrate compliance with the Regulatory Flexibility Act.

**RESPONSE 08-015**

Under the Regulatory Flexibility Act, agencies proposing rules that would have a significant economic impact on small business, small not-for-profit organizations, or small governmental entities must prepare a Regulatory Flexibility Analysis and try to find less burdensome ways for small organizations to comply with Federal requirements. The All-H Recovery Strategy is not proposing rules, so the Federal Caucus does not believe that law applies to this process. It may be relevant in certain implementation activities, they require one or more agencies to propose specific rules.

**ISSUE 08-016            Opportunities for partnerships exist with affected stakeholders.**

Some commentators offered assistance through the development of partnerships. Some suggested areas of partnership include

- Improved Habitat Rental program.
- Habitat Enhancement Incentives program.
- Safe Harbor Assurance program.

**RESPONSE 08-016**

The Federal Caucus agrees that developing partnerships among local, state and Federal governments, tribes, local landowners and other organizations is an effective way to implement habitat protection and recovery activities. An approach that maximizes coordination among the various interests is the most likely way to achieve sustainable and most cost-effective results. Some of these partnerships and coordinated efforts are already under way, and have impressive histories of encouraging local participation and achieving results. The Federal Caucus' objective was to develop a conceptual foundation for recovery efforts across all Hs, with the idea that implementation would be a regional effort that involves numerous agencies, organizations and individuals. With the All-H Recovery Strategy as a guide, the Federal agencies intend to encourage and facilitate habitat recovery activities in a number of ways, including building on existing programs where possible and working to initiate new programs where needed.

**ISSUE 08-017                      Compliance with the National Historic Preservation Act.**

Commentors indicated that the provision of Section 106 of the National Historic Preservation Act (NHPA) may apply to the All-H process, and has been ignored. Some commentors believe the Advisory Council on Historic Preservation should have an oversight role in the All-H process.

**RESPONSE 08-017**

Because the All-H Recovery Strategy is an outline for a conceptual Recovery Strategy, it is not formally proposing implementation of any specific actions; i.e., it is not a document contemplated under either NEPA or ESA. Without knowing what specific actions agencies will take based on the paper, it is difficult to incorporate NHPA planning and compliance at this time. As a result of Federal agency consultation with Columbia Basin tribes, the paper now has a separate section addressing cultural resources. We intend this new section to be the beginning point for how the agencies can work with the tribes and states to address historic and cultural resource issues under the NHPA and other related statutes.

## 9 SCIENCES

### **ISSUE 09-001 Additional quantitative information needed.**

Commentors suggest that quantitative comparisons of fish mortality rates are needed for the following dam components:

- Slack water pool behind the dam;
- High pressure gradient turbine duct system;
- High diffusion rate spillway (super saturated nitrogen); and
- Low capture ratio high acquisition time, mono-directional fish ladders.

Analyses of this information may show that there is a common fault design for the dams on the Columbia River. A detailed functional test was not performed for safe fish-passage verification.

### **RESPONSE 09-001**

A variety of analyses have addressed many of these issues. Survival rates for both juvenile and adults in the reservoirs are described in the dam passage ‘white paper’ ([www.nwfsc.noaa.gov](http://www.nwfsc.noaa.gov)). Passage through a variety of turbine designs, spillway designs and fish ladders are being assessed by the Federal agencies. In general, adult entrances to fish ladders are very effective in attracting fish to collection channels, which convey them to ladders, which allow them to readily pass over dams.

### **ISSUE 09-002 All-H Recovery Strategy should incorporate ineffectiveness of smolt transportation.**

Some commentors claim that the report should incorporate the conclusion of PATH’s weight of evidence process and the Scientific Review Panel report that showed that smolt transportation was unlikely to be a viable recovery tool for listed Snake River stocks. Any option that relies heavily on the continued use of smolt transportation to reverse a 20-year decline, during which time transportation has been the principal strategy, is likely to fail. Juvenile fish trucking and barging has never produced SARs that are sufficient to maintain or restore ESA-listed Snake River stocks. The only significant population rebounds occurred when barging did not occur (e.g., the mid-1980s when there were high spring flows). The commentors recommended that normalized strategies should be pursued.

### **RESPONSE 09-002**

The first draft of the All-H Recovery Strategy incorporates the results of a variety of scientific analyses, including PATH, and PATH weight-of-evidence reports. Survival during

trucking and barging is high; however, there is considerable scientific debate about delayed effects of trucking and barging.

**ISSUE 09-003            CRI model makes unrealistic assumptions about salmon and smolt populations.**

Several commentors suggested that the CRI model was not the best source of scientific information for decisionmaking. In support of their views, they cite a series of criticisms from two scientific sources. In regard to salmon populations, the scientific critics noted:

- The model assumes that half the spawners are female and equal fecundity across age. Available information indicates that 10 percent of 3-year-olds and 67 percent of five-year-old spawners are females. Older fish produce more eggs.
- The CRI analysis uses egg-to-smolt survival as less than 2 percent when PATH and other studies have shown egg-to-smolt survival at about 5 percent. The lower, CRI estimate could incorrectly support improvement of spawning and rearing habitat as the best alternative for saving spring/summer salmon.
- The model used higher post-Bonneville smolt mortality and higher smolt-to-adult returns than either that estimated by BPA or those available in the literature. When commonly accepted survival estimates are used, the most important variable is not first-year survival but post-Bonneville survival. This indicates that the most important variable is delayed or extra mortality occurs in the ocean.
- In using Alaskan sockeye data for adult ocean survival and Oregon coho to estimate survival through the early ocean for spring/summer chinook, the CRI model produces smolt-to-adult returns higher than has been seen since the Snake River dams were constructed. As such, these questionable SARs affect the estimated dam-related mortality impacts and undervalue the benefits of major changes to the hydrosystem.

**RESPONSE 09-003**

The CRI researchers have previously responded to these criticisms, both in writing ([www.nwfsc.noaa.gov/cri](http://www.nwfsc.noaa.gov/cri)), and in a public workshop held March 31, 2000, as well as in a meeting with representatives from the state of Idaho and the NWPPC on April 6, 2000. Brief responses to each of these points are presented below.

1. The Leslie matrix used by CRI only follows females and adjusts for the frequency of females returning at specific ages. CRI researchers would like to include estimates of age-specific fecundity; however, these estimates have not been published or made available. Thus, CRI researchers have used published estimates of fecundity.
2. The CRI analysis has been revised to utilize smolt-to-adult return estimates for the time period analyzed, thereby altering the distribution of mortality in the freshwater rearing



and estuarine/early ocean phases. Original CRI analyses indicated that both the freshwater rearing and estuarine/early ocean phases were important; revised analyses also indicate that both the freshwater rearing and estuarine/early ocean phases are important. CRI has revised estimates of mortality at these stages.

3. See response No. 2 above. These analyses do not address the source of that mortality.
4. See response No. 2. Adult ocean survival is extremely difficult to quantify. The estimate used in the CRI Leslie matrix analysis is one of the only published (peer-reviewed) estimates, and is comparable to those used in PATH.

**ISSUE 09-004            CRI model underestimates extinction risks.**

In regard to CRI estimates of extinction risks, commentors identified the following shortcomings.

- The model uses a “quasi-extinction threshold” that is lower than values typically used in extinction risk assessment. This causes the risk of extinction to be underestimated. This particular criticism was also put forth by a number of lay commentors.
- The model inappropriately uses averages in lieu of trends in population growth rate. As a result, model output underestimates the likelihood of extinction.

**RESPONSE 09-004**

The CRI researchers have also responded to these criticisms in the above mentioned forums. Brief responses to each of these points are presented below.

1. CRI now uses two risk measures: absolute extinction and the risk of substantial declines. Absolute extinction is used for the purpose of comparing risk across stocks and regions of different potential productivity, since it has the most easily interpreted biological meaning. The risk of substantial declines, on the other hand, provides a measure of risk independent of absolute abundance and is critical for those ESUs for which there are no measures of absolute abundance.
2. Extinction risk assessments do not use average population growth rate, but rather, the full range of population growth rates over the time period analyzed. However, a declining trend in this rate will cause the risk of extinction to be underestimated. The CRI has tested for these trends, and is exploring appropriate technical methods to include them where they exist.

**ISSUE 09-005            Scientific models used to assist in decisionmaking can be tailored to support predetermined conclusions**

Many commentors note that science can become subjective when politics and emotion are involved in selection of alternatives. They perceive that supporting studies, statistics, conclusions, and subsequent peer review can be consciously or unconsciously manipulated to produce predetermined conclusions. Several suspect that some governmental groups or individuals are manipulating their studies in such a way as to get politically expedient answers. In regard to the conflicting results obtained from various analyses, commentors observe that the answers obtained from science depend upon the questions that are asked. Assessments of extinction risks and management options for ESA listed salmon populations in the Columbia and Snake River Basins vary greatly depending on the parameters, data, and models used in each analysis. In several cases, commentors have questioned the motivation of investigators using dated or unsubstantiated data in models and weighing decisions made in the peer review process. By weighting a particular combination of data, parameter and models, nearly any desired result can be obtained. Commentors suggested that when PATH and CRI analyses used the same data, results were very similar.

#### **RESPONSE 09-005**

The Federal Caucus agrees that the outcome of scientific analyses is indeed influenced by the combination of data and assumptions included. Subjective weighting processes can particularly influence results. The best approach in evaluating conclusions achieved from any scientific endeavor is to understand thoroughly the underlying assumptions and biases contained in the analyses.

#### **ISSUE 09-006      Need more information on salmon survival rates.**

Several commentors related that in order to determine the best management solution (transport versus breach) estimates of survival are needed (e.g., post transport survival, extra mortality after dams, ocean mortality, number of spawning adults per year). Commentors shared their views and observations regarding a number of scientific models and processes, such as PATH, FLUSH, and CRiSP.

#### **RESPONSE 09-006**

The Federal agencies and the NMFS Northwest Science Center considered technical comments as well as the results from related scientific models and processes in the development of the final All-H Recovery Strategy and the Biological Opinions.

#### **ISSUE 09-008      The survival of transported fish is less than that of in-river migrants.**

Delayed mortality is a theoretical concept that tries to explain survival differences between transported and in-river fish. Some scientists and commentors postulate that before transported fish return to spawn, they suffer mortality that exceeds what would have occurred if they were not barged. The FLUSH model estimates that more than 80 percent of the fish transported will die, the CRiSP model estimates 60 percent, and recent PIT tagging studies indicate a loss of 45 percent.

Several commentors noted that many smolts die during their estuarine life cycle. They contend a part of this mortality is due to damage inflicted during transportation. Reports on the initial mortality of juvenile fish that are barged and trucked around the dams put the figure at 1 to 2 percent. One commentor, an experienced hauler who performed two mortality studies, cited a correlation between immediate and long-term mortality. He concluded that 1 to 2 percent mortality does not suggest the fish are so stressed that they would die in large numbers once out of sight. Another commentor observed that when the transported fish are released in the estuary they apparently become “disorientated” due to a water temperature differential and that many are eaten by sea gulls.

One commentor cites that in nearly all barging studies, the survival of returning adults barged as juveniles was 50 to 300 percent greater than the survival of adults that were not barged. Another suggested that some in-river smolts are undetected at dams and return at higher rates than those that were transported. While some differences in SAR exist between transported and undetected in-river migrants, no significant differences have been observed.

Delayed mortality is an important parameter with regard to deciding the role of juvenile fish transportation and assessing other alternatives relative to this mitigation measure. NMFS and CRI state that further studies could reduce the uncertainty surrounding delayed mortality; but do not specify the types of experiments.

#### **RESPONSE 09-008**

Many controlled studies as well as recent PIT tag returns demonstrate that transportation results in significantly more adult returns than migration through the hydropower system under the best possible (highest in-river survival) conditions. Whether or not transportation fully mitigates for in-river mortality (hydro-related) is not completely understood or defined at this time; i.e., is there some delayed mortality that is higher for transported than non-transported smolts? It appears transportation will return more adults than in-river migration, but it is not known at this time how much the process will mitigate for smolt mortality during passage through the hydropower system. Please refer to the white paper entitled “Summary of research related to transportation of juvenile anadromous salmonids around Snake and Columbia River dams” found at <http://www.nwfsc.noaa.gov/publications>.

Recent PIT tag data recovered from Rice Island indicate bird predation is the same for transported and in-river migrants. Because the barges are flow-through systems, temperatures are the same in and outside the barges.

The Federal Caucus recommends establishing adult returns as a performance standard for recovery actions in order to consistently evaluate results. Ultimately, barging or other passage improvements will be evaluated according to their capacity to return healthy adult fish and maintain population growth.

**ISSUE 09-009      Inadequate data gathering.**

Some commentors believe that there are oversights in data gathering apparent in the draft All-H Recovery Strategy. For example, the absence of salmon in the Klamath River, which has no dam, is not discussed. Similarly, there is no discussion on declines in salmon on such rivers as the Cowlitz and Nestucca that have no dams. Other factors are apparently involved, and an understanding of these factors may be of general importance to the decision process.

#### **RESPONSE 09-009**

Scientific analyses indicate that listed Columbia River ESUs are in danger of substantial (continuing) declines in the short- and long-term. The declines are attributable to the full range of human impacts on each phase of the salmon life cycle. The analysis examines the life stages in which the greatest improvements are possible. For Snake River populations the first 2 years of life hold the key, which points to issues affecting spawning and rearing habitat, from the tributaries through the hydro system, and into the estuary.

There is considerable uncertainty surrounding the effectiveness of many management actions, including habitat and hatchery changes, as well as dam breaching. We will never know everything about factors affecting salmon survival at various life stages. The level of risk that is 'acceptable' in the face of this uncertainty is a policy decision. The Strategy is designed to pursue improvements in species productivity based on rigorous monitoring and evaluation and adaptive management principles.

#### **ISSUE 09-011            CRI model uses non-standard and untested methods.**

Several commentors expressed reservations of the CRI model based on the critique of one scientific reviewer. In general, the reviewer noted that the model should be using standard risk assessment methodology as well as:

- The model does not use most recent available brood year data. Because these populations have been declining at an accelerating rate, the choice of older data produces more optimistic results than analyses that are based on the entire data record.
- The model relies on a non-standard method of sensitivity analysis. The standard percent method used by CRI indicates that mortalities affecting fish populations in the first year of life are the most important, and that each subsequent year of life is less important. When textbook recommended (elasticity) method is applied to the CRI model, it indicates that adult mortalities have the most impact on results.
- Because of the unorthodox approach taken in the CRI analyses, it is important to have the model validated (i.e., compare model predictions to actual data, discuss the impact of errors and assumptions, and compare methods and results to other model). Because these models may be used to justify delaying or taking a very risky decision, they should be peer-reviewed.

## **RESPONSE 09-011**

The CRI researchers have previously responded to these criticisms, both in writing ([www.nwfsc.noaa.gov/cri](http://www.nwfsc.noaa.gov/cri)), and in a public workshop held March 31, 2000, as well as in a meeting with representatives from the State of Idaho and the NWPPC on April 6, 2000. Brief responses to each of these points are presented below.

1. CRI analyses follow risk assessment methodology commonly used in the scientific literature.
2. CRI has always used the documented data that has been made available. Current analyses utilize all available data through 1999.
3. Sensitivity analyses are used to determine life stages at which there is potential to improve population trajectories by reducing mortality, and to determine life stages for which further research should be a priority. CRI conducts both elasticity and a standard reduction in mortality as sensitivity analyses. These analyses indicate that adult ocean survival has the highest elasticity, but that standard reductions in mortality at the freshwater rearing and estuarine/early ocean phases produce the largest impact on annualized rates of population change. This is because elasticity analyses put the greatest emphasis on stages with the greatest survival and reproductive value, whereas the mortality analysis puts the greatest emphasis on stages with high mortality. Further analyses; however, indicate that even if adult mortality in the ocean were reduced to zero, the change in population growth rate would not be sufficient to produce a stable population. CRI utilizes alternative sensitivity analyses because these traditional sensitivity analyses can obviously produce misleading results and additional analyses can provide important insight into population dynamics.
4. CRI scientists have continued to work to test the assumptions of all the analyses utilized.

In addition, CRI analyses are currently being submitted for publication in peer-reviewed journals.

## 10 ECONOMICS

### **ISSUE 10-001 Dam removal will cause negative economic impact to the Pacific Northwest.**

Among all the concerns regarding economics, the economic impact of dam removal (partial or full) received the most attention from commentators. While some people believe that removal of the dams will be good for the economy, boost the fishing industry, and create jobs, others believe that breaching the dams will devastate industry and the economy, and threaten jobs. Many people support dam removal while recognizing it could have a negative impact on the economy.

Specific concerns expressed with respect to economic loss of dam breaching include:

- Displacement of jobs due to local businesses closing or the high cost of operations if hydropower generation is lost.
- Increased cost of grain transportation, which will make dry land farming uneconomical for the region (Montana, North and South Dakota, Idaho, and Washington).
- High cost of maintaining and expanding transportation infrastructure.
- Decreased use of fishing opportunities, parks and campsites, golf, and the general tourist attractions along the Snake River, resulting in economic loss.
- High costs entailed in physical removal.
- The reductions in use and value of agricultural land, and the uncertain advantages it would provide for salmon recovery.

Areas where people feel dam removal will most likely lead to economic gain:

- Creation of more than 3,100 recreation-related jobs.
- Creation of stronger economy in general for the Northwest.
- Resurrection of a failed \$3 billion a year salmon recovery program.
- Recovery of salmon.

### **RESPONSE 10-001**

The Draft FR/EIS describes the economic effects of the 4 alternatives being considered for improvements to fish passage in Chapter 5. The Revised Draft FR/EIS will address additional

economics and help clarify economic impacts. Greater economic analysis detail can be found in Appendix I, Draft FR/EIS.

The specific concerns expressed have been addressed in Chapter 5 of the Lower Snake Draft FR/EIS. These are real economic losses and there would be increased costs associated with implementation of Alternative 4 - Dam Breaching. There are also some potential economic gains; however, these gains need additional analysis to verify the assumptions used.

**ISSUE 10-002            Cost and benefit analysis of dam removal is incomplete and inaccurate.**

Many commentors voiced concern that the scope of the cost accounting is too narrowly applied. They felt that information and dollar figures are absent, preventing people from making meaningful comparisons of alternatives. Some feel that selecting the best-case scenario for dam removal and the worst-case scenario for dam retention biases the cost figures. In some views, the cost of dam removal is inflated; in others, the cost of dam removal is underestimated.

Commentors urge reexamination and consideration of the following potential costs:

- Cost of meeting Clean Water Act water quality standards not addressed;
- Costs of reparation to tribes if salmon go extinct;
- Loss of secondary benefits such as hotels, restaurants, equipment sales and other services, to communities from decreased fishing and recreation;
- Costs of dredging;
- Costs of trucking smolts;
- Costs of replacing barge transportation with rail, including rail costs from Idaho and Montana;
- Loss of agricultural lands and irrigation;
- Costs of harvest restrictions, including economic and social consequences to fishermen;
- Costs of increased flooding;
- Costs of eliminating hatchery programs and related jobs, especially for Tribes and in Idaho;
- Costs of mining, grazing and agricultural restrictions for habitat improvements;

- Costs of replacement power; and
- Costs of hydropower generation.

Commentors urge reexamination of the following potential benefits:

- Improved quality of life and positive economic benefits from dam removal;
- Benefits of salmon to Native American tribes such as ceremonial, subsistence and religious values;
- Benefits of dam removal to commercial fisheries from Oregon to Alaska;
- Benefits of recreational activities to local communities; and
- Benefits of increased revenues from reduced spill and flow.

#### **RESPONSE 10-002**

All the above items are addressed in the draft COE Lower Snake River FR/EIS. Details in the Economics Appendix help to understand the cost and benefit information. In the revised draft COE Lower Snake River FR/EIS, additional discussions and tables will be provided to elaborate on potential economic impacts.

The Federal Caucus did not conduct an economic analysis of each alternative. There are a number of other studies that have tackled economic impacts of several of the major Federal actions under consideration in the All-H Recovery Strategy. The COE' COE Lower Snake River FR/EIS includes detailed investigations into implementation costs and effects of dam breaching on navigation, irrigation and power generation. Other individual and joint studies by Federal Caucus members, including the COE, Reclamation, BPA, the U.S. Forest Service, Bureau of Land Management (BLM), and EPA, incorporate analyses of the costs of various recovery measures, as well as economic impacts and other effects. The NWPPC conducted extensive economic analyses related to its Multispecies Framework Project, which the Federal Caucus referred to in the All-H Recovery Strategy. The Federal Caucus coordinated its work with the Framework staff, and the alternatives in the All-H Recovery Strategy are similar and in some cases identical to those in the Framework. The Framework report, including its economic analyses, can be found at [www.nwframework.org](http://www.nwframework.org).

#### **ISSUE 10-005      Economic loss associated with flow augmentation.**

The Snake FR/EIS and All-H Recovery Strategy discuss flow augmentation as a potential mitigation strategy for the salmon, but augmentation costs are not presented in either document. An additional 1 million acre-feet for flow augmentation results in an average loss of about \$430 million annually to the economy of southern Idaho, according to a recent study by Reclamation. This water is used for irrigation by Idaho's potato industry. Similarly, compensation or



mitigation is needed for farmers in eastern Washington and Oregon for water volumes needed to achieve target flows in non-breaching scenarios.

#### **RESPONSE 10-005**

The Federal Caucus did not conduct an economic analysis of each alternative. There are a number of other studies that have tackled economic impacts of several of the major Federal actions under consideration in the All-H Recovery Strategy. The All-H Recovery Strategy made reference to a study by Reclamation that was prepared for the COE for its Lower Snake River Juvenile Salmon Migration Feasibility Study/EIS. That study provided a preliminary economic, financial and hydrologic analysis of impacts from additional flow augmentation from the Snake River and included a broad array of impacts from increased flow augmentation including agriculture, local economies recreation, etc. The study can be found at [www.nw.usace.army.mil](http://www.nw.usace.army.mil). Reclamation's analysis assumed that flow augmentation water would be acquired from willing sellers, and compensation to those sellers was included in the cost analysis. Third-party financial impacts were not included in the annual cost estimate. Also, institutional considerations were identified but no recommendations were made to resolve them.

#### **ISSUE 10-007      Economics of Alaska fishing rights.**

Commentors claimed that harvest limits already affect Alaska fishermen negatively. King salmon season went from 160 days in the 1970s to 11 days in 1999. Further restrictions on ocean fishing makes little biological sense, considering that only one ESA-listed stock, Snake River fall chinook, is taken in significant quantities. Elimination of the entire Southeast Alaska salmon troll fishery would result in only five to 68 additional Snake River fall chinook making it back to their spawning grounds. Commentors estimate that a harvest cutback of approximately 10,000 Pacific chinook salmon is required to save every additional Snake River fall chinook and would come at a cost of \$2 million to coastal fishing communities with no other major sources of income. Commentors also suggest that mortality rates from the Alaska fishery are insignificant compared with mortality rates caused during migration additional harvest restrictions.

#### **RESPONSE 10-007**

Although there may be differences of opinion on the statistics cited in these comments, the points are well taken. Northern fisheries have been reduced in recent years, in some cases very significantly. There is clear evidence that a large number of chinook in the Alaska fishery would have to be foregone for each Snake River salmon that would be "saved." And in order to return to spawn, a Snake River fish would have to pass unharmed through a number of other fisheries on the West Coast. Further reductions in Alaska fisheries would have a major impact on Southeast Alaska fishing and related communities. In the Caucus' view, the question for the All-H Recovery Strategy is whether there is justification for further reducing Alaska fisheries to recover ESA-listed salmon, given the likely costs and effectiveness of that action compared with the potential offered by other alternatives.

**ISSUE 10-009            Role of private funding in project implementation.**

Some commentators suggest that if removal of dams is not an economically viable alternative, advocates for removal should consider making a financial contribution to potentially impacted communities.

**RESPONSE 10-009**

The Federal Caucus recognizes that communities will experience adverse impacts as well as benefits from recovery measures. The Snake River Juvenile Salmon Migration Feasibility Study Economic Analysis assessed impacts to the region and to local communities for all alternatives under consideration. In addition, an array of possible mitigation impacts was presented in the analysis. The Federal agencies are calling for a further study of potential mitigation measures.

**ISSUE 10-010            Cumulative economic impacts are not adequately addressed and render many of the proposed alternatives unjustified.**

Executing several of the options in the All-H Recovery Strategy would result in significant economic impacts in a number of areas. Commentors identify potential impacts related to loss of hydropower, loss of irrigated cropland, cost of breaching dams, loss of navigation capability, and loss of productivity due to use of water for augmentation. Commentors suggested that the Federal agencies did not total these potential costs and identify the commutative economic impact.

**RESPONSE 10-010**

The Federal Caucus set as a goal, “minimizing adverse economic impacts.” This goal would apply to all sectors of the region’s economy, including the agricultural, mining, grazing, and timber industries. Cumulative effects are definitely a consideration in determining the extent of adverse economic impacts. Implementation of any of the All-H alternatives will no doubt require additional analysis of economic effects and proposals for mitigating them. While there is already considerable economic information and analysis available, the Caucus recognizes that more work may need to be done in this area as implementation proceeds on some measures.

## 11 RANGE OF ALTERNATIVES

### **ISSUE 11-003      The Federal Caucus needs to improve integrated alternatives.**

Commentors urged the Federal Caucus to improve the options and make the integrated alternatives more realistic. Suggestions including:

- The harvest option should be more than a range of harvest rates. It should include changes in harvest methods, timing, location, equipment, and gear to allow larger harvest with less impact on listed stocks.
- The hatchery option should be coordinated with recovery goals and the harvest policies.
- The hydro options should be broader and not narrowly focused on the removal of Snake River dams.
- The habitat options should define who will participate without describing the types of actions that might be considered and without providing a basis for setting priorities.
- The description of the Pacific Salmon Treaty found in harvest Annex C should be expanded and included in the body of the document. The document should clarify for readers what the Pacific Salmon Treaty role is with regard to harvest management and explain that, of the four Hs, the harvest sector is already playing a significant role in terms of recovery of listed salmon.

### **RESPONSE 11-003**

The draft All-H Recovery Strategy stipulates that the options and alternatives are not absolute, nor do they represent the only choices. Rather, it makes clear that the options and alternatives are intended to establish a general range of possible actions. The revised All-H Recovery Strategy goes into considerably more detail in expressing a recommended action plan than does the draft. The hatchery and harvest elements reflect the comments above. The hydro element expresses basin-wide policy that should apply to all hydro projects, and uses the FCRPS biological opinion as a specific example of this policy in practice. The habitat element sets forth specific strategies to improve habitat function throughout the basin and proposes a framework for pursuing them. The Pacific Salmon Treaty agreement is described in detail in the harvest element.

### **ISSUE 11-009      Alternatives should include discussion of Hells Canyon and other upstream developments**

Some commentors suggested that the Federal agencies should focus on alternatives to recover Snake River salmon stocks by including a discussion of Hells Canyon and other upstream development. The Federal Energy Regulatory Commission (FERC) reauthorization of the Hells

Canyon project could have great effect on Snake River fall chinook by providing passage beyond Hells Canyon. Possible benefits, from measures such as requiring fish passage, should be considered within the All-H analysis of options as well as during relicensing.

**RESPONSE 11-009**

The revised All-H Recovery Strategy expresses a general hydro policy that should apply to projects throughout the basin. It specifically references the utility of establishing biologically based performance standards for all hydro facilities, regardless of ownership, and mentions the mid-Columbia public utility projects and the Hells Canyon complex as examples. Finally, it recognizes the importance of achieving efficiencies in salmon recovery efforts by applying policies on a consistent basis and in a manner that accommodates the provisions of competing Federal statutes such as ESA, the Federal Power Act and the Clean Water Act.

**ISSUE 11-010 Breaching option should include mitigation for juvenile and adult fish passage.**

Commentors said it is not clear why the breaching option does not include increased mitigation measures at the four Columbia River dams to assist with juvenile and adult fish passage. For example, since the listing of Snake River fall chinook, harvest as a percentage of the total run has decreased (1988-92 about 58 percent of run harvested, 1993-97 about 36 percent of run harvested) while the percentage of returning adult fish associated with dam loss has increased (1988-92 about 28 percent lost, 1993-97 about 32 percent lost). The reasons for this increased adult non-harvest mortality and solutions to the problem should be identified.

**RESPONSE 11-010**

The breaching option in the draft All-H Recovery Strategy is admittedly Snake River-centric. It discusses dam breaching in the context of the Lower Snake River dams because those are the facilities at which breaching has been most thoroughly studied. The revised, final All-H Recovery Strategy addresses this comment by calling for the establishment of biologically based performance standards for all hydro facilities within the Columbia Basin. This includes lower Columbia projects and contemplates that aggressive measures would be pursued at these projects in an effort to meet performance standards tied to species' survival needs. This issue is specifically addressed in the executive summary and in the hydro element of the recommended action plan.

**ISSUE 11-013 Integrated alternatives and options presented in the All-H Recovery Strategy are not comprehensive.**

Some commentors suggest that ultimately, a recovery plan must address all the goals, be comprehensive across the life cycle of the listed stocks, internally consistent, and economically and politically achievable. The examples of integrated alternatives used in the draft All-H Recovery Strategy do not seem to achieve these necessary conditions, according to some comments. Commentors urged the Federal Caucus to ensure that the integrated alternatives are

a consistent assemblage of recovery and fisheries management options that will achieve the stated goals.

**RESPONSE 11-013**

The draft All-H Recovery Strategy stipulates that the options and alternatives are not absolute, nor do they represent the only choices. Rather, the All-H Recovery Strategy makes clear that the options and alternatives are intended to establish a general range of possible actions and to show the spectrum of possible choices. The goals of the draft All-H Recovery Strategy are expressed as broad strategies--with the idea that specific recovery measures will be developed over time. The revised final All-H Recovery Strategy goes into greater detail than the draft and includes a recommended action plan. It suggests specific strategies and measures within each life stage and proposes an implementation structure for pursuing them. The Federal Caucus anticipates that recovery plans will set goals and get into greater detail for individual species. The recovery planning process is described in detail in the revised paper in Section 2.

**ISSUE 11-014            The Federal Caucus should consider additional alternatives to those presented in the All-H Recovery Strategy.**

Commentors indicated that there are an insufficient number of alternatives presented. Many commentors did not refer to specific alternatives by number, but provided suggestions for issues that should be addressed either in new alternatives or options within existing alternatives. The following topics were presented to enhance alternatives and options for salmon recovery:

- Modifying COE flood control management.
- Including the Clean Water Act to achieve water quality standards in the main-stem.
- Improving and streamlining coordination among Federal agencies.
- Estimating the impact of dam removal on bull trout populations in Montana that have already been negatively impacted by the existing drawdown schedule.
- Providing for increased mitigation measures at the four Columbia River dams to assist juvenile and adult fish passage (consider the potential benefits of drawdown of John Day Dam).
- Limiting the alternatives to those that can be implemented consistent with all present statutory authorities, not just the ESA.

Some commentors suggested new alternatives. These included:

- Work with the NWPPC in developing a fourth alternative that features a new flow regime for the Columbia River system combined with significant investments in habitat improvement. The alternative would eliminate or curtail spring supplemental flows and set summer flows at levels for a “low water year.” Voluntary spill would be reduced if no demonstrated biological value is obtained and the current level of barging smolts would continue.
- Pursue a partial breach design plan for the Lower Salmon River dams to enhance salmon access to upper reaches of the river and allow continued hydropower production.
- Adding Alternative 6 from the Multi-Species Framework process as an alternative in the All-H Recovery Strategy; this alternative would result in a 30 percent increase of chinook stock compared to slightly more than 20 percent for dam breaching and 25 percent for the Federal Aggressive Approach.
- Add a new option that maximizes juvenile salmon and steelhead transportation.
- Clone fish that are endangered stock and not breach dams.
- Turn off lights at dams to eliminate predation on smolts by squawfish and limit navigation to daylight hours.
- Improve salmon recovery by using large pumps installed by the Department of Energy to pump water from the north part of the Hanford Reservation to create new streams draining into the Columbia; streams would provide “efficient spawning and rearing channels.”
- Construct a large underwater pipeline that would pass below the reservoirs and bypass the dams to transport smolts to the mouth of the Columbia River.
- Direct fish away from the dam turbines using a low voltage electric grid, instead of barging.

#### **RESPONSE 11-014**

The draft All-H Recovery Strategy stipulates that the options and alternatives are not absolute, nor do they represent the only choices. Rather, the draft All-H Recovery Strategy makes clear that the options and alternatives are intended to establish a range of possible actions. Many of the comments and suggestions above fall within that spectrum of choices. For example, many of the hydrosystem operational and capital improvements mentioned in these comments fall within the “aggressive program” outlined in the hydro element of the All-H Recovery Strategy.

In addition, the Federal Caucus coordinated with the Multi-Species Framework process to a significant extent. Most of the Framework options have some correlation to the All-H Recovery

Strategy options and alternatives. But the All-H Recovery Strategy relies on a set of analytical tools that suggest continuing improvements in salmon and steelhead survival in all life stages will be critical to achieving survival and recovery of the species. The All-H Recovery Strategy does not contemplate doing less than is currently being done in each life stage, and each of the options and alternatives represent improvements over the status quo.

#### **ISSUE 11-015          Elements of an action plan.**

Many commentors expressed support for the following elements of a new action plan:

- Centralize activities with NMFS.
- Modify hydropower systems.
- Provide technical and financial assistance to landowners and managers to improve riparian conditions.
- Eliminate mixed stock harvest in the Columbia River.
- Mark all hatchery salmon, improve genetic stock, and modernize Mitchell Act Hatcheries.
- Eliminate predators (Caspian Terns, marine mammal, etc.).
- Do oceanographic research to improve the understanding of biological limits and constraints within the ocean. Adjust the plan accordingly for decreases in ocean productivity.

#### **RESPONSE 11-015**

The revised All-H Recovery Strategy addresses the comments in several respects. It suggests actions that encompasses all salmon life stages and proposes a structure for implementation. The hydro element of the All-H Recovery Strategy describes the manner in which performance standards would be established for hydro projects throughout the basin. The hatchery element addresses the need to mark hatchery-released fish, and the harvest element addresses the importance of establishing selective fisheries that minimize impacts on listed species. The chapter on existing conditions highlights the importance of predator control, ocean research and socio-economic impacts. Predator control and ocean-related issues are further discussed in the recommended action plan.

## 12 PUBLIC INVOLVEMENT PROCESS

### **ISSUE 12-001      People are interested in salmon recovery issues and appreciated the opportunity to comment on the All-H Recovery Strategy and process.**

Many people commented that they really cared about the issue of salmon decline and the alternatives being considered to recover salmon populations. People expressed the need to involve a broad group of stakeholders in the development of implementation plans. They appreciated the opportunity to provide input into the decisionmaking process and asked that their comments be included in an official record. Many of the people attending the public hearings expressed appreciation to the Federal Caucus for scheduling hearings and making Caucus members available to hear comments and answer questions.

### **RESPONSE 12-001**

The Federal agencies agree that aggressive action is needed to recover ESA-listed salmon and steelhead species in the Columbia River Basin. The Caucus based its timeframe for achieving recovery on the extensive scientific analysis and modeling that has been conducted in the region and on the expertise of the staff and policymakers at NMFS and USFWS. The Federal agencies are implementing measures today as part of the ESA-mandated recovery plan for Snake River salmon and under the NMFS and USFWS Biological Opinions. There have been major changes in the way the hydroelectric system is operated and configured as a result of the ESA listings, as well as ongoing improvements in habitat, hatcheries, and harvest practices. There are some promising signs that these measures are beginning to yield larger numbers of salmon returning to the basin. The final All-H Recovery Strategy includes a structure and schedule for implementation that aims to maximize the effectiveness of federally funded recovery efforts across the Hs. In addition, the programs in each H will incorporate performance measures to provide the agencies with a means to gauge the relative costs and effectiveness of various recovery actions.

### **ISSUE 12-002      Concerns with public involvement process.**

Some people expressed frustration with the All-H public involvement process. They felt the public hearings did not serve the purpose of providing a dialogue on salmon recovery. Some argued that the paper was of limited use because it contributed little new information to the debate. Others were more critical, commenting that the public process became a popularity contest between those for dam breaching and those against dam breaching, thus contributing to increased polarization within the region on an already contentious issue. Still others believe that at least some of the Federal agencies are not really interested in public comment nor will consider public comment in the decisionmaking process. The Caucus was also criticized for treating stakeholders unequally in the process. Individuals felt more consideration was given to some views than others. Interest groups were criticized for massive mail campaigns and “stacking meetings.” Commentors believed these approaches contributed little to the debate beyond generating more paper. Other commentors said there was inadequate input from experienced technical people in the field, which cast doubts on the conclusions drawn in the document and at



the hearings. Some people expressed frustration with scheduling or logistical problems with the meetings or the meeting locations.

### **RESPONSE 12-002**

The Federal Caucus' All-H process was designed to explore a range of strategies for salmon recovery. At the outset of the All-H process, the Federal agencies pointed out that the debate over salmon recovery in the region has focused in recent years on dam breaching, to the exclusion of some other options. Breaching the four Lower Snake River dams is an enormous step. It would have far-reaching consequences throughout the region and severe impacts on some local economies. The Federal Caucus believes that other possibilities and combinations of activities need to be explored. The strategies in the All-H Recovery Strategy are intended to address factors that affect all ESA-listed aquatic species in the basin, not just Snake River salmon.

### **ISSUE 12-003      The Federal Caucus did not allow the public adequate time to comment.**

Some people expressed concern about the magnitude of the issues discussed in the All-H Recovery Strategy and the limited time given the public to absorb and comment on those issues. They commented that the public and researchers were unfairly disadvantaged by the timeframes for comment and expressed concern that the limited time prevented meaningful consideration of the issues and could lead to rash conclusions and implementation plans.

### **RESPONSE 12-003**

The Federal Caucus agrees that the timeframe for review of the All-H Recovery Strategy but was short, but was mindful of the importance of completing a contextual framework for the Biological Opinions. We also made an extensive public involvement effort, which included 15 public meetings that drew 9,000 participants. During the public comment period on the All-H Recovery Strategy, we received 60,000 comments. Input and comments from technical experts around the region was also accepted through a series of technical workshops sponsored by the NMFS Fish Science Center, as well as in written comments during the formal public process. As specific measures are being implemented in each of the Hs, there will be additional opportunities for public participation.

The Federal Caucus also believes that much of the information in the All-H Recovery Strategy and many of the issues raised have already undergone months, if not years of regional critique and debate. In other words, while the Federal Caucus approach may be new, most of the issues are not. All of the Hs have been explored extensively in other forums in the region. For example, the NWPPC has been conducting a comprehensive review of hatcheries and hatchery policy since 1998, and the U.S. Forest Service and BLM are involved in a multiyear process to develop a strategy for managing public land in the interior Columbia River Basin, including aquatic and riparian habitats. These and other efforts have acquainted the region with many of the issues that were brought together in the All-H Recovery Strategy.

## **13 RELATIONSHIP TO COE EIS, JOHN DAY, BPA EIS, ICBEMP, ETC.**

### **ISSUE 13-001 Relationship to COE EIS, COE John Day Study, BPA EIS, ICBEMP, and other basin initiatives.**

Some people commented on issues outside the All-H Recovery Strategy, mostly related to specific options, recommendations, methodologies, and scope of the COE' EIS on the four Lower Snake River dams and its John Day drawdown study. Many of the comments received on the COE' EIS were also relevant to the All-H Recovery Strategy, particularly those related to dam breaching. Some comments addressed issues outside the All-H content, such as specific alternatives or recommendations for a preferred alternative in the COE Lower Snake River FR/EIS.

### **RESPONSE 13-001**

The Federal Caucus hosted a series of 15 public meetings across five states in February and March 2000. During the same period, the COE had been planning to host related sets of public meetings on the draft Snake FR/EIS and the John Day Drawdown Phase 1 Study. Also, the BPA Fish and Wildlife Implementation EIS began its formal comment period at the same time. The Federal Caucus received requests from individuals and organizations to coordinate these processes so people did not have to attend so many different public meetings. The Federal agencies agreed to try to coordinate a format that would pull all of the meetings under the same tent. The Communications Team designed an agenda that accommodated all of the topics at a single meeting, while meeting the discrete administrative and legal requirements for each process. Distinct comment forms for each process were included in welcome packets for the public meetings. Therefore many comments were made outside the specific scope of the All-H Recovery Strategy.

All comments received were entered into the official record for the All-H process, and forwarded to the appropriate official record for the COE Snake FR/EIS and John Day Study.

### **ISSUE 13-003 The Columbia Basin Project, managed by Reclamation, needs to be a contributor to the water augmentation program.**

The NMFS has proposed changes affecting both Lake Roosevelt and Banks Lake. One commentary has suggested that it is not appropriate to impact one fish and wildlife resource to the benefit of another. A formal consultation between the NMFS and Reclamation to determine water needs of the Columbia Basin Project, and what contribution the project should make to the water augmentation program.

### **RESPONSE 13-003**

NMFS has prescribed a 5-foot drawdown (or refill reduction) of Banks Lake to allow more water to remain in Lake Roosevelt while meeting downstream flow objectives by releasing water from

Grand Coulee Dam (9.6.1.2.4). This amounts to approximately 130,000 acre-feet of deferred storage at Banks Lake.

## 14 COMMENTS PERTAINING TO THE TRIBES (7/17)

### **ISSUE 14-001      Salmon are an integral part of Native American culture and religion and should be protected.**

Many Indians and non-Indians noted that salmon have an essential role in the heritage, traditions, culture and religion of the Columbia basin tribes and should be protected. The commentators believe that the current conditions of the river have had a very negative impact on the quality of life for Tribes. They favor restoration of the fisheries as the most important goal in the Columbia River Basin.

### **RESPONSE 14-001**

The Federal agencies recognize that salmon have an essential role in culture and religion of certain Northwest tribes. During meetings between Federal and tribal government policy officials, the tribes repeatedly emphasized the importance of salmon to their culture and religion--past, present and future. Further, salmon are protected by treaty rights and as such require special attention by the Federal government.

### **ISSUE 14-002      Federally recognized Indian Tribes hold a right to fish salmon in the Columbia River Basin.**

Many people, Indians and non-Indians, feel strongly that Indian fishing rights must be upheld. They expressed the following views:

- Treaties guarantee the rights of Columbia Basin tribes to fish in their usual and accustomed places (as defined in 1855). The United States has an obligation to honor tribal fishing rights, and breaching the dams is the only option that would not violate treaty obligations.
- The economic costs of letting salmon go extinct are huge. Using taxpayer dollars to recover salmon is much better than incurring the huge costs (over \$10 billion) of compensating Tribes for violation of treaty rights if the salmon go extinct.
- There should be no further restrictions on Tribal harvest of salmon in the Columbia River Basin. Current restrictions, the commentators believe, have already placed fishing rights in jeopardy. They further noted that Native Americans have voluntarily restricted harvest of some species in the past, and these efforts did not produce any measurable improvement in salmon populations.

### **RESPONSE 14-002**

Decisions regarding harvest allocation for tribal and non-tribal fishing are determined through the court-mandated *US vs. Oregon* and *US vs. Washington* processes. The Federal government,

working with tribes and states, will continue to work to provide harvestable quantities of salmon for the exercise of the important treaty rights.

**ISSUE 14-003            Indian Tribes should have a greater role in developing salmon recovery plans.**

Some people commented that tribal hatcheries and other recovery efforts had been successful and should be integrated into salmon recovery plans for the basin. People commented that Tribes ought to be more directly involved in the decisionmaking processes, both with regard to salmon recovery in general and in formal government-to-government negotiations. One commentor noted that the Federal Caucus was in violation of Section 106 of the National Historic Preservation Act because it had not formally consulted with the tribes or the State Historic Preservation Offices regarding potential impacts of the various alternatives considered in the All-H Recovery Strategy to cultural resources.

**RESPONSE 14-003**

The agencies agree that tribal participation in recovery efforts throughout the Northwest is critical. The Federal agencies intend to continue to work closely with the tribes to determine the best use of Federal, state and tribal hatcheries in the recovery efforts. Those efforts will include technical and policy, government-to-government, discussions, consultations and negotiations. The action agencies will be responsible for compliance with all applicable legal requirements, including Section 106 of the National Historic Preservation Act, planning and implementing recovery actions.

**ISSUE 14-004            The Tribal environmental ethic provides a model for balancing human and environmental needs in the region.**

Many commented that Indian beliefs or ethics regarding protection and sustenance of the earth's resources provide a lesson in balancing the needs of people and salmon in the Northwest. Several commentors praised and credited the Indian environmental ethic for thousands of years of productive fisheries in the Northwest.

**RESPONSE 14-004**

The Federal agencies recognize and appreciate that Indian tribes have a tradition and culture that firmly embraces a strong environmental ethic.

**ISSUE 14-005            Indian treaties are too old and not relevant to today's environment.**

Several commentors questioned the legitimacy of treaties negotiated with Indian tribes over 150 years ago before the development and population boom in the Northwest. The commentors maintain that tribal interests are too prominently represented in decisionmaking and that present

conditions ought to provide the basis for negotiations between the Federal government and the tribes.

**RESPONSE 14-005**

Treaties have a special status under the U.S. Constitution. The Federal government has an affirmative responsibility to honor the treaties with Tribal governments. Just as the Federal agencies cannot ignore legislation passed by the Congress, they cannot ignore the requirements of signed and ratified treaties. Judicial decisions have stated that tribes have a treaty right to 50 percent of the harvestable portion of the salmon and other treaty fisheries, and therefore the tribes must be consulted regarding management of the treaty resources. Courts have continually affirmed the unique and distinctive relationship between the Federal government and federally recognized tribal governments, all tribal governments (treaty and executive order tribes). The Federal Caucus is committed to working with the tribes to address the recovery of the salmon.

**ISSUE 14-006      Tribal fishing practices must be modified in order to recover salmon in the basin.**

Many of the persons making this comment suggested a ban on net fishing in the rivers. Others suggested restricting tribal harvest to areas under the dams or restricting their harvest to nonbreeding stock. Some people suggested that Indians were taking more fish than they needed and selling surpluses. These people believe Native American salmon harvest has significantly affected salmon populations and that there can be no salmon recovery without the modification or elimination of tribal salmon harvest in the Columbia Basin.

**RESPONSE 14-006**

Decisions regarding tribal harvest, including the number of salmon available for harvest are subject to court-mandated processes under *U.S. vs. Oregon and U.S. vs. Washington*. Negotiation with the tribes includes identifying the amount of fish that should be made available for harvest, in light of the recovery needs of the ESA-listed species. The courts have the task of balancing the treaty fishing rights of the tribes with ESA concerns in approving tribal fishing harvests and seasons.

**ISSUE 14-007      Decisions regarding tribal trust resources are governed by the U.S. Constitution and must be made in a government-to-government setting.**

Commenters stated that Article XI of the Constitution places treaties in a position of supremacy over the laws of the United States. Since the decisions facing the Federal agencies are, to a degree, based on a treaty executed in 1855, they must be made in a way that acknowledges the treaty obligations as controlling law. A Presidential Memorandum, executed by President Clinton, requires government-to-government discussions with tribes on issues that affect tribal trust resources.

**RESPONSE 14-007**

The Federal Caucus recognizes its responsibilities under treaties and the Presidential Memorandum for Government-to-Government relations with Indian tribes. Both Federal law and the treaties, which have equal footing in law and must accommodate both as much as feasibly possible in reaching their decision, bind the agencies. Regional executives and senior Administration officials have met on several occasions and consulted with the tribes in the Columbia River Basin. Treaty rights and trust responsibility issues were at the fore in those meetings. Summaries of those meetings are included in Volume 3 of the All-H Recovery Strategy.

**ISSUE 14-008**

Tribes expressed the desire to redefine “cultural resources” to include natural and other resources that are of religious and cultural value to the tribes.

**RESPONSE 14-008**

Federal agency authority to manage and protect cultural resources is defined in various laws, principally the National Historic Preservation Act. This and other cultural resources laws provide the definitions of “cultural resources” and “historic properties” that agencies must use. Agencies do not have the authority to redefine Congress’s intent, as expressed in law. However, the agencies understand that tribes have a broader definition that incorporates natural resources, and will seek to avoid harming the those culturally important resources where we have the authority and ability to do so while accomplishing our larger responsibilities.

## 15 IMPLEMENTATION ISSUES/NEXT STEPS

### **ISSUE 15-001            A 25-year timeframe is too long.**

Commentors suggest that the 25-year period discussed in the draft All-H Recovery Strategy for achieving recovery is arbitrary, inconsistent with law, and likely to result in further delay of meaningful recovery measures. The goals should be met as soon as possible while minimizing economic harm. Neither the ESA nor Federal treaties with the Columbia River Tribes permit such delays and citizens of the region should not be subjected to the large uncertainties caused by inaction. Commentors urged the Federal Caucus to implement known, effective recovery actions at once, given the high risk of imminent extinction for several stock. In addition, the All-H Recovery Strategy should also discuss the relative cost of delay, including costs for actions extended over time and increased value for those actions that would have immediate benefits.

### **RESPONSE 15-001**

The Federal agencies agree that aggressive action is needed to recover ESA listed salmon and steelhead species in the Columbia River Basin. The Caucus based its timeframe for achieving recovery on the extensive scientific analysis and modeling that has been conducted in the region and on the expertise of the staff and policymakers at NMFS and USFWS. The Federal agencies are implementing measures today as part of the ESA-mandated recovery plan for Snake River salmon and under the NMFS and USFWS Biological Opinions. There have been major changes in the way the hydroelectric system is operated and configured as a result of the ESA listings, as well as ongoing improvements in habitat, hatcheries, and harvest practices. There are some promising signs that these measures are beginning to yield larger numbers of salmon returning to the basin. The final All-H Recovery Strategy includes a structure and schedule for implementation that aims to maximize the effectiveness of federally funded recovery efforts across the Hs. In addition, the programs in each H will incorporate performance measures to provide the agencies with a means to gauge the relative costs and effectiveness of various recovery actions.

### **ISSUE 15-002            The government should focus on how salmon should be saved and not on the debate about whether dams should be removed.**

Many people feel that breaching the Lower Snake River dams is not the answer and should only be considered as the last resort because of: (1) the potential negative impact on the regional economy; and (2) the highly uncertain outcomes for salmon survival. Many commentors were not supportive of putting local economies in jeopardy. Many commentors expressed concern that dam removal would address only four of 26 coast-run salmon and steelhead listed under ESA.



## **RESPONSE 15-002**

The Federal Caucus' All-H process was designed to explore a range of strategies for salmon recovery. At the outset of the All-H process, the Federal agencies pointed out that the debate over salmon recovery in the region has focused in recent years on dam breaching, to the exclusion of some other options. Breaching the four Lower Snake River dams is an enormous step. It would have far-reaching consequences throughout the region and severe impacts on some local economies. The Federal Caucus believes that other possibilities and combinations of activities need to be explored. The strategies in the All-H Recovery Strategy are intended to address factors that affect all ESA-listed aquatic species in the basin, not just Snake River salmon.

## **ISSUE 15-003            The government must have a specific work plan for habitat improvement.**

Although proponents of dam removal are very firm in their position, those who are against breaching the dams are equally vehement. Many commentators have in common is a desire to see salmon habitats protected, restored and maintained. Many opposed to dam removal point to other factors that contribute to salmon decline and feel that measures should be implemented or strengthened in those areas. Dam proponents suggested the following habitat improvements:

- If the dams are removed, the sediment needs to be prevented from affecting the clear stream and not interfering with salmon habitat.
- If the dams are removed, fish ladders should be installed in dams in upper streams in order for returning salmon to spawn.
- All mitigation measures should be used in conjunction with dam removal to ensure the success of salmon population.

Those who are against breaching the dams propose the following actions regarding salmon habitat:

- Habitat protection needs to be measurable and accountable.
- The COE must stop shipping sediment to the manmade islands on the lower Columbia River.
- The COE must ensure that the river system complies with the Clean Water Act.
- Water quality improvement and continual habitat maintenance and restoration have to be enforced.

### **RESPONSE 15-003**

The Federal agencies are committed to developing and implementing a sound, scientifically based habitat strategy for the region that includes water quality. The NWPPC's Fish and Wildlife Program incorporates a number of habitat-related measures, and the Council has been active in supporting the efforts of local watershed Councils, as well as tribes, and state and local government agencies involved with habitat restoration and improvement. The Federal agencies will coordinate closely with the Council to develop plans for implementing a comprehensive habitat strategy. The ICBEMP, sponsored by the U.S. Forest Service and BLM, will also play a key role in future habitat protection and restoration activities in the basin. When it is complete, ICBEMP will provide long-term guidance for managing habitat on over 140 million acres in the Northwest, including 64 million acres of Federal land in the upper and middle reaches of the basin's watersheds.

### **ISSUE 15-004      The All-H Recovery Strategy ought to address mitigation strategies for those adversely affected by the proposed solutions for salmon recovery.**

Many people commented that the All-H Recovery Strategy needed to address mitigation for the "losers" in the salmon recovery. They suggested there needed to be a better understanding of the consequences of various options as well as some protections for those that would suffer under chosen options during the difficult transition period. Many of these commentors offered specific mitigation measures or strategies they believe need to be considered.

### **RESPONSE 15-004**

The Federal agencies will call for a study of potential mitigation measures. The first step will be the compilation of existing information as part of the Bonneville Power Administration's programmatic EIS for its fish and wildlife recovery actions. The second phase will involve additional evaluation by the Department of Commerce, in coordination with the Department of the Interior.

### **ISSUE 15-005      Financial issues with implementing the All-H alternatives.**

Some commentors expressed concern that financial constraints are not addressed. Although the aggressive program and dam breaching alternatives rely heavily upon additional dollars being available in the future and the All-H Recovery Strategy is silent as to how funding would be secured. For example, the aggressive program contains \$750 million to \$1.0 billion for reconfiguration activities between 2001 and 2010 (Hydropower Appendix, page 109). The Habitat Appendix, page 104, states that "a total investment of over \$3 billion would be required to adequately address habitat needs in the Columbia River Basin through 2015." To the extent the aggressive program requires additional flow and spill as described in the Hydropower Appendix, the document does not address these measures. What the aggressive program will mean to BPA in terms of additional foregone revenue from power production should be discussed. The Federal Caucus needs to recognize that funding is a constrained resource and that

the financial burden of recovery measures will in all likelihood rest mainly on the shoulders of Northwest citizens. The avoided-costs figure cited does not include costs associated with Clean Water Act compliance (estimated at approximately \$125 million/year) and others that would be required if dams remain in place. Nor do the costs associated with partial dam removal account for reduced impacts that maybe possible with targeted transition investments and mitigation.

**RESPONSE 15-005**

The final All-H Recovery Strategy includes a section on implementation that sets out the common vision of the Caucus agencies regarding how Federal funding shall be prioritized. The Caucus believes that a regionally accepted recovery approach based on scientifically supported performance standards, Federal, state, and tribal coordination, and prioritized actions will present a package for appropriations approval to Congress that will have a greater chance of success than past efforts. The Federal agencies will commit to a coordinated approach to joint development of budgets and appropriations requests and present Congress with requests that are consistent with the regionally accepted recovery strategy.

## **16 ISSUES NOT FULLY CONSIDERED/ADDITIONAL INFORMATION**

### **ISSUE 16-001      Need improved dam analyses.**

Commentors asked about the size of the historical runs before dam construction and what impact the dams have had on the run numbers. In similar areas without dams and continued pristine conditions, what has happened to runs over time?

### **RESPONSE 16-001**

The salmon runs in the Columbia Basin were estimated to be from 11 to 16 million before Europeans arrived in the region. This number is from a 1987 NWPPC report. Other estimates (Chapman, 1991) put the number at 6 to 8 million. Before the construction of the Federal dams, populations had been reduced substantially by overharvest, loss and destruction of habitat, and by misguided fisheries management practices. When Bonneville Dam was completed in 1938, the region had its first opportunity to count the number of fish returning up the Columbia. In 1938, fewer than 500,000 fish were counted. The numbers have fluctuated over time, and the highest count ever recorded at Bonneville Dam was 1,139,848 salmon and steelhead in 1986. The number of adult salmonids returning each year can be estimated from the number of fish counted over Bonneville Dam and the landing figures from the Lower Columbia River harvest data. The 10-year average counted over the Bonneville Dam is just over 600,000 fish per year.

The Lower Snake River dams are among the newest of eight Federal dams that have created a slack-water navigation system to Lewiston, Idaho. The Snake River dams have caused gas supersaturation to be a severe problem in high flow years, which has contributed to a decline in Snake River fish runs from the 1970s to the 1990s. From 1978 through 1992, 11 hatcheries were modified or constructed to compensate for fish losses related to the Snake River dams. These hatcheries produce over 25 million juvenile salmon. From the 5 to 8 million smolts that used to migrate from the Snake, 25 to 30 million have started the migration in recent years.

When the Lower Snake River Fish and Wildlife Compensation Plan was being formulated, it was estimated that per dam survival would be 85 percent, and the cumulative loss through the four dams would be 47 percent. Recent studies by the NMFS using PIT tags indicate that per dam survival is 96 to 97 percent and survival through the four-dam reach is over 75 percent.

The Fraser River in British Columbia provides the best example of what is happening in a river similar to the Columbia that does not have dams. The Fraser has runs of chinook, sockeye, coho, pinks, chum, and steelhead, which have declined at similar rates to those in the Columbia River. Overfishing has been a major cause of decline, but runs are also affected by habitat destruction and pollution.

One of the key measurements in comparing the Fraser and Columbia River fish runs is the smolt-to-adult return ration (SAR). SARs for Columbia River runs have plummeted from 2 to 6 percent to 0.1 to 0.5 percent in recent years. At the same time, Fraser River SARs went from

6 to 10 percent to 0.5 to 1 percent. Coincidentally, SARs for Oregon coastal runs, and Puget Sound runs also plummeted. British Columbia scientists attribute this drastic reduction to loss of productivity and changes in ocean conditions.

The most recent news on Columbia River runs is the 2000 counts. The spring chinook run is at a record high and could top 200,000 returning fish. The jack count (fish that have spent a year in the ocean) is over 20,000, more than twice as many as in 1999. The jack count is a predictor for the following year, and numbers indicate the spring chinook run could be over 400,000 in 2001. Based on jack counts, summer and fall chinook runs could also be larger this year.

In the Snake River, over 36,000 spring chinook have crossed Ice Harbor Dam. The jack count is even more exciting – 20 percent of the Snake River run is jacks. The run up the mid-Columbia is half that of the Snake, and the jack count is only 3 percent. Something is going right in the Snake River – the runs are improving.

**ISSUE 16-002            Effect of radioactive pollutants on Hanford spawning beds.**

One commentor expressed concern about the leaking of storage containers at the Hanford reservation. This commentor pointed to a June 1999 Spokesman-Review newspaper article that indicated Strontium 90 and chromium are migrating near salmon beds and pose a potential problem to the fish.

**RESPONSE 16-002**

At the June meeting of the NWPPC, a presentation was given regarding on tritium, chromium, and strontium contaminants in the Hanford Reach of the Columbia River by Mike Thompson, US Department of Energy at Hanford; Ted Posten, Batelle Pacific Northwest Laboratories; Did Goswami, Washington Department of Ecology Nuclear Waste Program. The Federal Caucus will track the development of this study to consider any actions that may be necessary to protect water quality for endangered species.