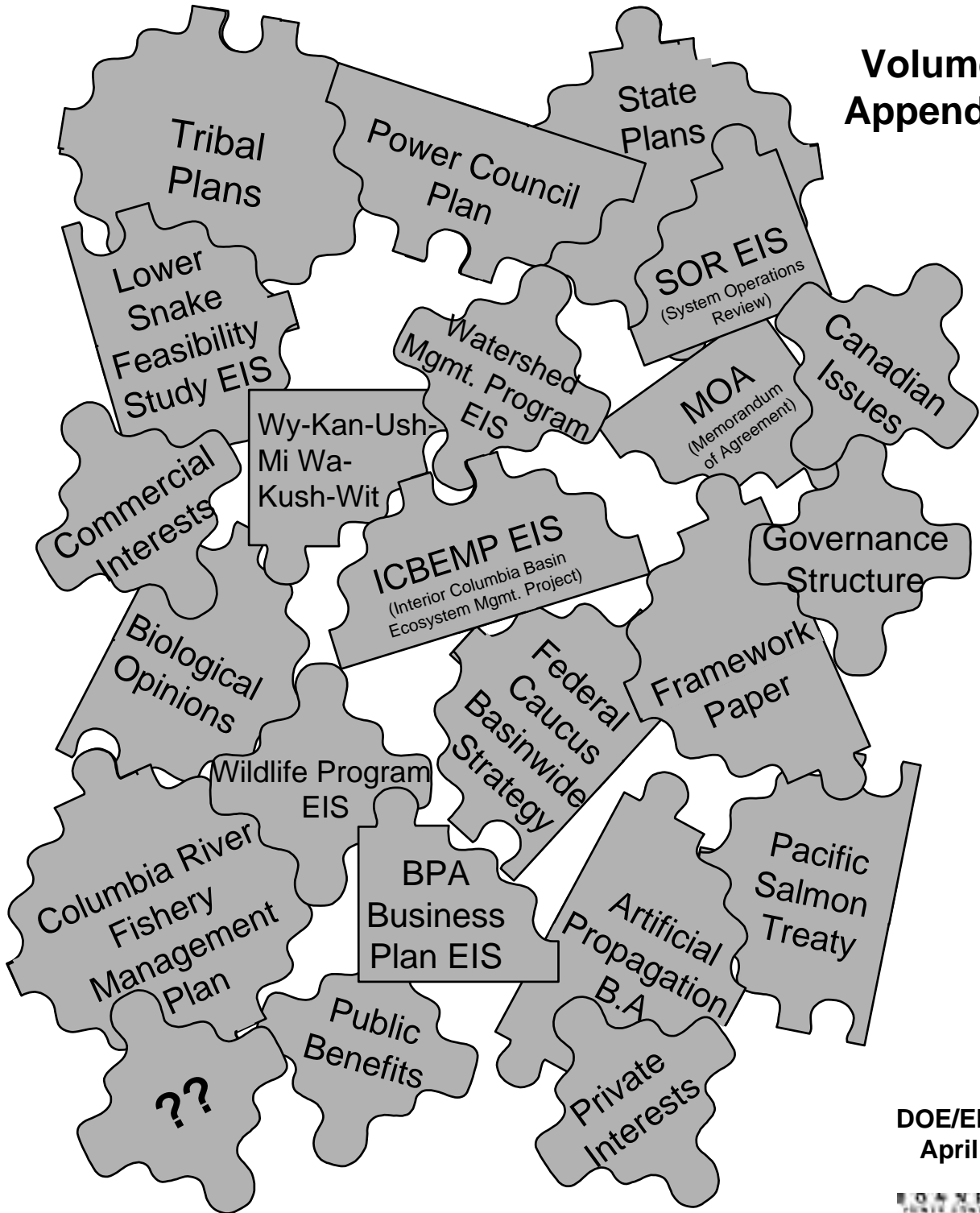


Bonneville Power Administration Fish & Wildlife Implementation Plan Final EIS

"Piecing The Puzzle Together"

**Volume 2:
Appendices**



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April 2003



Appendix A
Fish and Wildlife Funding Principles
for Bonneville Power Administration
Rates and Contracts

Appendix A

FISH AND WILDLIFE FUNDING PRINCIPLES FOR BONNEVILLE POWER ADMINISTRATION RATES AND CONTRACTS

September 16, 1998

Preamble

The purpose of these principles is to conclude the fish and wildlife funding process in which Bonneville has been engaged with various interests in the Region, and provide a set of guidelines for structuring Bonneville's subscription and power rate processes. The principles are intended to "keep the options open" for future fish and wildlife decisions that are anticipated to be made in late 1999 on reconfiguration of the hydrosystem and in early 2000 on the Northwest Power Planning Council's Fish and Wildlife Program.

The agreement resulting from these principles is significantly different from the last Bonneville Fish and Wildlife Budget Memorandum of Agreement. Bonneville and the other participants are not establishing a budget for the 2002-2006 period, and Bonneville will not be picking a single number for the rate case.

These principles will ensure that Bonneville's rates and power contracts give a very high probability of meeting all post-2001 financial obligations, including the future fish and wildlife budget commitment, and that all these obligations can be met without creating a new contract and rate "cliff" at the end of the next 5-year rate period in 2006. Bonneville anticipates that after 1999 its fish and wildlife budget commitment for the post-2001 period will be set out in a budget agreement that, among other things, addresses accountability and provides that funds carried forward under the agreement will remain available for expenditure for the benefit of fish and wildlife.

Bonneville's contracts and rates historically have been set in a manner that assumes there is a low, but not zero probability that it will be unable to cover its costs. Continuing this approach, in such circumstances (e.g. low markets, low water, etc.) all of Bonneville's costs will be reviewed, recognizing that fish and wildlife obligations are one of its highest priorities. Guided by the principles below, Bonneville's goal is to reduce the chances of its being unable to cover its costs to an acceptably low level. Bonneville commits to use these principles and financial mechanisms to achieve this goal. These principles have been reviewed by the Office of Management and Budget and are consistent with the Administration's principles and priorities.

Principles

Bonneville will proceed with its power rate case and contracts for its subscription products for the period 2002-2006 using the following principles:

1. Bonneville will meet all of its fish and wildlife obligations once they have been established, including its trust and treaty responsibilities.
2. Bonneville will take into account the full range of potential fish and wildlife costs.
 - Bonneville will use the full range of potential fish and wildlife costs and financial impacts during the 2002-2006 rate period (currently estimated at \$438 million to \$721 million) for planning purposes. This range is based upon the current calculation of the 5 year average financial impact on Bonneville of thirteen long-term alternatives being evaluated in the Region for configuration of the Federal Columbia River Power System and an estimated range of costs for implementing the Northwest Power Planning Council's Fish and Wildlife Program to protect, mitigate, and enhance fish and wildlife on the Columbia River and its tributaries.
 - In setting its rates Bonneville will incorporate the range of \$438 million to \$721 million in its revenue requirement using a method that calculates probabilities across a range of costs in the same manner as Bonneville treats other cost and revenue uncertainties in its rate setting. Because of the uncertainties of the decisions on fish and wildlife at this time, Bonneville will conduct an analysis that assumes that all 13 system configuration alternatives are equally likely to occur. For the direct program, Bonneville will assume that costs have an equal probability of falling anywhere within the current range of \$100M - \$179M.
3. Bonneville will demonstrate a high probability of Treasury payment in full and on time over the 5-year rate period.
 - A 100 percent probability of Treasury payment is not achievable, but BPA's new rates must be designed to maintain or improve Treasury payment probability, even in view of the range of fish costs.
 - Bonneville will demonstrate a probability of Treasury payment in full and on time over the 5-year rate period at least equal to the 80 percent level established in the last rate case and will seek to achieve an 88 percent level.
4. Given the range of potential fish and wildlife costs, Bonneville will design rates and contracts which will position Bonneville to achieve similarly high Treasury payment probability for the post-2006 period by building financial reserve levels and through other mechanisms.
5. Bonneville will minimize rate impacts on Pacific Northwest power and transmission customers.

- Bonneville's goal is to avoid a wholesale rate increase for requirements customers (including small farm and residential customers of investor owned utilities) by seeking an additional cost reduction of \$130 million in internally manageable costs that are not fish and wildlife costs.
6. Bonneville will adopt rates and contract strategies that are easy to implement and administer.
 7. Bonneville will adopt an approach that is flexible in order to respond to a variety of different fish and wildlife cost scenarios.
 - To create financial flexibility and to avoid another contract "cliff" in 2006, Bonneville's goal will be to have 35% to 45% of its total post-2001 power sales, including secondary sales, in contract terms of 3 years or less, in short-term surplus sales, and/or in cost-based indexed sales.
 - All sales to requirements customers will be renewable at cost-based rates, which will reflect changes in Bonneville's costs subsequent to those reflected in the initial subscription rate.
 8. Bonneville will use a combination of the following mechanisms to achieve principles 1-7. The specific mix and design of these mechanisms will be determined in the rate case and subscription process, but the mix chosen will meet the above principles:
 - Implementing prudent additional cost-reduction efforts to reduce internally manageable costs before exercising any contingent stranded cost recovery mechanism.
 - Use of Bonneville's existing authorities if needed to implement stranded costs recovery on the transmission system, while simultaneously seeking more robust authorities legislatively.
 - Selling subscription products on staggered contract terms - some shorter than 5 years (see Principle 6) and some for longer than 5 years.
 - A cost recovery adjustment clause (CRAC) in power contracts for subscription customers.
 - An option fee from some customers in return for increased price predictability after the initial contract period.
 - Cost-based indexed pricing for some of its products.
 - Using reserve balances carried into the 2002-2006 rate period from the prior period.

Administration Commitments

The Administration will extend the availability of section 4(h)(10)(C) credits for Bonneville's costs related to its fish and wildlife programs for the period 2002-2006 on the same terms as established for the 1995-2001 period.

- The Administration will confirm continued access through 2006 to any funds remaining in the Fish Cost Contingency Fund on September 30, 2001 on the same terms as those established for the period 1995-2001.
- The Administration commits to support Bonneville in its Cost Review and revenue enhancement objectives.

Appendix B
Mission Statements and Statutory Table

Appendix B

MISSION STATEMENTS AND STATUTORY TABLES

This appendix is supplied to help understand the numerous different missions and legal requirements that guide the many entities involved in the Region’s fish and wildlife mitigation and recovery effort. Appendix B has two sections:

- Section A – The Major Stakeholders and Fish and Wildlife Policy Forums
- Section B – Relevant Federal Statutes, Regulations, and Executive Orders.

A. The Major Stakeholders and Fish And Wildlife Policy Forums in the BPA Service Area

Numerous stakeholders influence fish and wildlife policies and program implementation within the BPA Service Area. They include multiple sovereignties and levels of government, as well as interagency forums and independent commissions. Their activities in the fish and wildlife arena are linked by varying degrees of coordination, and their missions reflect their geographic locations and constituents. The following table provides the reader with a sense of the breadth and diversity of the major interest groups concerned with BPA’s Fish and Wildlife Implementation Program.

CANADA	
Fisheries and Oceans Canada	Responsible for policies and programs to support Canada’s interests in the oceans and freshwater habitat, and to conserve and sustain Canada’s fisheries resources in marine and inland waters.
UNITED STATES—FEDERAL AGENCIES	
U.S. Department of Agriculture	
U.S. Forest Service	Manages national forests and grasslands for sustainable multiple use, including fish and wildlife, in all eight states in BPA service area.
Natural Resources Conservation Service	Provides assistance regarding soil and water conservation to private landowners. Has a conservation office in every county.
U.S. Department of Commerce	
NOAA Fisheries (National Marine Fisheries Service)	Responsible for managing and sustaining most marine resources and their habitats in U.S. waters. Provides services to support domestic and international fisheries management.
U.S. Army Corps of Engineers	
Army Corps of Engineers	Operates federal dams in the Columbia River Basin for multiple uses, including fish and wildlife. Salmon migrate through fishways and bypass systems at most dams.

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U.S. Department of Energy	
Bonneville Power Administration	Responsibilities include improvement of Northwest fish and wildlife resources affected by hydropower plants in the Columbia River Basin.
Environmental Protection Agency	Responsible for safeguarding the nation's natural environment - air, water, and land.
U.S. Department of the Interior	
Bureau of Land Management	Manages public lands, including fish and wildlife habitat.
Bureau of Reclamation	Manages, develops, and protects water and related resources.
National Park Service	Responsible for preserving natural resources in national parks.
Fish and Wildlife Service	Responsible for conserving, protecting, and enhancing fish and wildlife, and their habitats. Specifically includes migratory birds, endangered species, certain marine mammals, and freshwater and anadromous fish.
UNITED STATES—STATE GOVERNMENTS	
California Dept. of Fish and Game	Responsible for managing California's fish, wildlife, and plant resources, and the habitats upon which they depend.
Idaho Dept. of Fish and Game	Responsible for preserving, protecting, and perpetuating all fish and wildlife resources in Idaho.
Montana Fish, Wildlife & Parks	Responsible for maintaining and enhancing the health of Montana's natural environment and the vitality of its fish and wildlife resources.
Oregon Dept. of Fish and Wildlife	Responsible for protecting and enhancing Oregon's fish and wildlife and their habitats for use and enjoyment by present and future generations.
Nevada Dept. of Conservation and Natural Resources	Responsible for protecting, preserving, managing, and restoring wildlife and its habitat.
Utah Dept. of Natural Resources	Responsible for coordinated and balanced stewardship of Utah's natural resources.
Washington Dept. of Fish and Wildlife	Responsible for providing sound stewardship of fish and wildlife. Serves as an advocate for fish and wildlife species.
Wyoming Game and Fish Dept.	Responsible for providing adequate and flexible system to control, propagate, manage, protect, and regulate all Wyoming wildlife.
TRIBES	
Blackfoot Tribe	Reservation, 3,000 square miles Northwestern Montana 8,488 tribal members
Burns-Paiute Tribe	Reservation, 1,240 acres plus 11,000 acres in trust for individual Indians Eastern Oregon 286 tribal members
Cedarville Rancheria	Reservation, 20 acres Northwestern California Population: 22
Confederated Tribes of the Chehalis Indian Reservation	Reservation, 4,224 acres Western Washington Number of Chehalis Indians in 1984: 382.

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Chinook Indian Tribe	No reservation or tribal lands Western Washington 2,000 tribal members
Coeur d'Alene Tribe	Reservation, 69,299 acres Northern Idaho 1,216 tribal members
Confederated Tribes of the Colville Reservation	Reservation, 1.3 million acres Northeastern Washington 7,900 tribal members
Confederated Tribes of the Coos, Lower Umpqua, and Siuslaw Indians	Reservation, 6.1 acres South-central Oregon coast 600 tribal members
Coquille Indian Tribe	No reservation 6,400 acres of tribal lands South-central Oregon coast 695 tribal members
Cowlitz Indian Tribe	No reservation Western Washington 1,400 tribal members
Crow Indian Nation	Reservation, 3,521 square miles South-central Montana 9,024 tribal members
Fort Bidwell Reservation	Reservation, 3,335 acres Northwestern California Population: 200
Fort McDermitt Paiute and Shoshone Tribe	Reservation, 16,654 acres in northern Nevada 18,828 acres in southeastern Oregon
Confederated Tribes of the Grand Ronde	Reservation, 10,300 acres Western Oregon 4,104 tribal members
Hoh Tribal Business Community	Reservation, 443 acres Northern Washington coast 212 tribal members
Hoopa Valley Reservation	Reservation, 85,446 acres Northwestern California Population: 2,200
Jamestown S'Kallam Tribal Council	No reservation Northwestern Washington 486 tribal members

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Kalispel Tribe	Reservation, 4,600 acres Northeastern Washington 250 tribal members
Klamath Tribes	No reservation or tribal lands South-central Oregon 3,175 tribal members
Kootenai Tribe of Idaho	Reservation, 2,695 acres Northern Idaho 165 tribal members
Lower Elwha	Reservation, 373 acres Northwestern Washington 638 tribal members
Lummi Indian Tribe	Reservation, 12,000 acres Northwestern Washington 3,670 tribal members
Makah Tribe	Reservation, 27,200 acres Northwestern Washington 2,195 tribal members
Muckleshoot Tribe	Reservation, 1,201 acres of trust land Western Washington 1,170 tribal members
Nez Perce Tribe	Reservation, 88,000 acres North-central Idaho 3,000 tribal members
Nisqually Indian Tribe	No reservation or tribal lands Western Washington 500 tribal members
Nooksack Indian Tribe	Reservation, 2,500 acres including 65 acres of tribally owned trust land Western Washington 1,341 tribal members
Ozette/LaPush Tribes	Reservation, 709 acres Northern Washington coast (Held in trust for the Makah Tribe)
Pit River Indians	Several reservations, Northeastern California 1,350 tribal members
Port Gamble S'Klallam	Reservation, 1,341 acres Northern Washington coast 935 tribal members

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Puyallup Indian Tribe	Reservation, a few square miles Western Washington 2,219 tribal members
Quileute Tribe	Reservation, 594 acres Northern Washington coast 706 tribal members
Quinault Indian Nation	Reservation, 189,621 acres Northwestern Washington 2,453 tribal members
Confederation Tribes of the Salish and Kootenai Tribes of the Flathead	Reservation, 1.2 million acres Western Montana 6,800 tribal members
Samish Tribe	No reservation or tribal lands Western Washington 750 tribal members
Sauk-Suiattle Tribe	Reservation, 23 acres Northwestern Washington 183 tribal members
Shoalwater Bay Tribe	Reservation, 1,035 acres Northwestern Washington 204 tribal members
Northwestern Band of Shoshoni Nation	Reservation, 187 acres Northwestern Utah 411 tribal members
Shoshone-Bannock Tribes of Fort Hall	Reservation, 540,764 acres Idaho 3,951 tribal members
Shoshone-Paiute Tribes of the Duck Valley Reservation	Reservation, 144,274 acres in Nevada Reservation, 145,545 acres in Idaho 1,500 tribal members
Confederated Tribes of the Siletz Indian Reservation	Reservation, 3,669 acres Western Oregon 3,022 tribal members
Skokomish Tribe	No reservation or tribal lands Northwest Washington 796 tribal members
Spokane Tribe	Reservation, 154,000 acres Eastern Washington 2,100 tribal members

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Squaxin Island Tribe	Reservation, a small island Western Washington 650 tribal members
Stillaguamish Tribe	No reservation or tribal lands Western Washington 237 tribal members
Summit Lake Paiute Tribe	Reservation, 10,098 acres Nevada
Suquamish Tribe	Reservation, 2,500 acres Northwestern Washington 665 tribal members
Swinomish Indian Tribe	Reservation, 10 square miles Western Washington 778 tribal members
Tulalip Indian Tribe	Reservation, 8,878 acres Northwestern Washington 2,800 tribal members
Confederated Tribes of the Umatilla Indian Reservation	Reservation, 157,982 acres Eastern Oregon Approximately 2,000 tribal members
Upper Skagit Tribe	Reservation, 99 acres Western Washington 504 tribal members
Confederated Tribes of Warm Springs	Reservation, 641,000 acres Central Oregon 3,755 tribal members
Confederated Tribes and Bands of the Yakama Indian Nation	Reservation, 1.4 million acres South-central Washington 8,870 tribal members

B. Relevant Federal Statutes, Regulations, and Executive Orders

<p>BPA – Bonneville Power Administration BLM – Bureau of Land Management BOR – U.S. Bureau of Reclamation CEQ – President’s Council on Environmental Quality Corps – U.S. Army Corps of Engineers DOC – U.S. Department of Commerce DOI – U.S. Department of Interior</p>	<p>EPA – U.S. Environmental Protection Agency FERC – Federal Energy Regulatory Commission NMFS – National Marine Fisheries Service (as of 2002, known as NOAA Fisheries) NPS – National Park Service USDA – U.S. Department of Agriculture USFS – U.S. Forest Service USFWS – U.S. Fish and Wildlife Service</p>
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Statute or Order	Administering Agencies	Complying Agencies	Statutory Requirements
American Indian Religious Freedom Act of 1978, 42 U.S.C.S. 1996 (1999)	Same as complying agencies	All federal agencies with statutory or administrative responsibilities for management of federal lands	To protect and preserve the American Indians’ inherent right to believe, express, and exercise their traditional religion, including access to sites, use and possession of sacred objects, worship through ceremonials, traditional rites.
Archeological and Historic Preservation Act of 1960 and 1974 16 U.S.C.S. 469 <i>et seq.</i> (1999)	DOI	Any agency constructing a dam or other Federal construction project	Provides for preservation of historic sites, buildings, objects, etc. by providing for preservation of historical and archeological data that might otherwise be irreparably lost or destroyed as the result of flooding, relocation of roads, alterations of terrain, or other acts caused by the construction of a dam by any agency of U.S. or by any private entity holding license issued by such agency or by any alteration of the terrain caused as a result of any Federal construction project or federally licensed activity or program.
Archeological Resources Protection Act, 16 U.S.C.S. 470aa <i>et seq.</i> (1999)	Agency with primary management authority of public lands or DOI	All	Agencies must obtain permits before excavating or otherwise disturbing archaeological resources on public lands and Indian lands.
Bald Eagle Protection Act 16 U.S.C.S. 668 (1999)	USFWS, DOI, Attorney General	All	No one is allowed to take, possess, sell, or purchase bald eagle or golden eagle, dead or alive, or any part, nest or egg thereof.
Clean Air Act, as amended, 42 U.S.C.A. 7401 <i>et seq.</i> (1999)	EPA	All	Agencies must comply with state implementation plans, and follow new source performance standards as required by EPA. Must comply with all federal, state, interstate, and local air pollution requirements.

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Clean Water Act, as amended, 33 U.S.C.S. 1251 <i>et seq.</i> (1999) (Federal Water Pollution Control Act of 1972 and its successors, the Clean Water Act of 1977, and the Water Quality Act of 1987)	EPA	All	Regulates discharge of pollutants into the navigable waters of the U.S. through a permit system. Non-point source requirements control pesticide runoff, agricultural runoff, forestry operations, and parking lots/motor pools. Non-point sources require individual or group permits and must be monitored at the point they enter public waters, storm sewers, or natural waterways.
Coastal Zone Management Act of 1972, as amended, 16 U.S.C.S. 1451 (1999)	USDOC	All	Requires that federal actions be consistent, to the maximum extent practicable, with approved state Coastal Zone Management programs.
Columbia River Gorge National Scenic Area Act, as amended, 16 U.S.C.S. § 544 <i>et seq.</i> (1999)	Columbia River Gorge Commission	All	A violation occurs if there is a willful violation of management plans, land use ordinances, or implementation measures made by the Columbia Gorge Commission.
Comprehensive Environmental Response, Compensation & Liability Act of 1980 (CERCLA), as amended, 42 U.S.C.S. 9601 <i>et seq.</i> (1999)	EPA	All	Requires restoration of those sites with hazardous materials.
Endangered Species Act (ESA), as amended, 16 U.S.C.S. 1531 <i>et seq.</i> (1999)	NMFS, USFWS	Virtually all	Federal agencies must ensure that proposed actions do not jeopardize the continued existence of any endangered or threatened species, or cause the destruction or adverse modification of their habitat.
Environmental Quality Improvement Act of 1970, as amended, 42 U.S.C.S. 4371 <i>et seq.</i>	CEQ and Office of Environmental Quality	All federal agencies conducting or supporting public works projects	Federal agencies must comply with environmental statutes.

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<p>Executive Order 11514 Protection and Enhancement of Environmental Quality, Mar. 5, 1970, 3 C.F.R. 902 (1966-1970), 35 Fed. Reg. 30,959</p> <p>(Amended by Executive Order 11991, May 24, 1977, 3 C.F.R. 123 (1977), 42 Fed. Reg. 26,967)</p>	CEQ	All	<p>Directs Federal agencies to initiate measures needed to direct their policies, plans, and programs to meet national environmental goals. Federal agencies are responsible for developing procedures (e.g., public hearings, information on alternative courses of action) to ensure the public can review, understand, and comment on Federal plans and programs with environmental impacts in a timely manner.</p> <p>The Council on Environmental Quality (CEQ) developed regulations requiring EISs to be more concise, clear, and to the point (and therefore more useful to the decisionmakers) in response to this Executive Order.</p>
<p>Executive Order 11644 Use of Off-Road Vehicles on Public Lands, Feb. 8, 1972, 37 Fed. Reg. 2877, as amended by Executive Order 11989, May 24, 1977, 42 Fed. Reg. 26,959</p>	DOI, USDA	BLM, USFS	<p>Establishes policies and procedures for use of off-road vehicles on public land to protect resources of those lands. Includes any vehicle whose use is authorized by respective agency head under permit, license, lease, or contract.</p>
<p>Executive Order 11988 Floodplain Management, May 24, 1977, 3 C.F.R. 117 (1977) 42 Fed. Reg. 26961. Amended by Executive Order 12148, July 12, 1975, 3 C.F.R. 412 (1979), 44 Fed. Reg. 43,239</p>	Water Resources Council	BLM, USFS	<p>Federal agencies are required to avoid or minimize adverse impacts associated with short-term or long-term modification and occupancy of floodplains.</p> <p>If activities are going to occur within the 100-year floodplain or within wetlands the agency must first prepare a floodplain/wetlands assessment (similar to NEPA requirements).</p>
<p>Executive Order 11990 Protection of Wetlands, May 24, 1977, 3 C.F.R. 121 (1977), 42 Fed. Reg. 26,961</p>	Each agency	All	<p>Federal agencies are required to issue or amend existing procedures to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands.</p>
<p>Executive Order 12088 Federal Compliance with Pollution Control Standards, Oct 13, 1978, 3 C.F.R. 243 (1978), 43 Fed. Reg. 47,707, (amended by Executive Order 12580, Jan. 12, 1987, 3 C.F.R. 103 (1987), 52 Fed. Reg. 2423, amended by Executive Order 13016, Aug. 28, 1996, 61 Fed. Reg. 45871)</p>	EPA	All	<p>This Executive Order delegates responsibility to the head of each executive agency for ensuring that all necessary actions are taken for the prevention, control, and abatement of environmental pollution. This order gives the EPA authority to conduct reviews and inspections to monitor Federal facility compliance with pollution control standards.</p>

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Executive Order 12898 Environmental Justice, Feb. 11, 1994, 59 Fed. Reg. 7629, amended by Executive Order 12948, Jan. 30, 1995, 60 Fed. Reg. 6381	Interagency Working Group on Environmental Justice convened by EPA	All	Directs all federal agencies to ensure that their actions do not result in disproportionately adverse environmental or human health effects on minority and/or low-income populations. In addition, federal agencies must analyze the environmental effects of the actions, including human health, economic, and social effects, and effects on minority and low-income communities.
Executive Order 12962 Recreational Fisheries, June 7, 1995, 60 Fed. Reg. 30769	USFWS, NMFS	All	Requires federal agencies to implement laws in manner that will conserve, restore, and enhance aquatic systems that support recreational fisheries; to evaluate the effects of federal funded, permitted, or authorized actions on aquatic systems and recreational fisheries; and to document those effects.
Farmland Protection Policy Act 7, as amended, U.S.C.S. 4201 <i>et seq.</i> (1999)	USDA	All	Directs federal agencies to identify and quantify adverse impacts of federal programs on farmlands. The Act's purpose is to minimize the number of federal programs that contribute to the unnecessary and irreversible conversion of agricultural land to non-agricultural uses.
Federal Insecticide, Fungicide, and Rodenticide Act, as amended 7 U.S.C.S. 136 <i>et seq.</i> (1999) (amended by the Federal Environmental Pesticide Control Act of 1972)	EPA	All	Registers and regulates the manufacture and use of pesticides, including herbicides.
Federal Land Policy and Management Act 43, U.S.C.S. 1701 <i>et seq.</i> (1999)	BLM, USFS	Agencies with federal land management responsibilities	Establishes public land policy and guidelines for its administration and provides for the management, protection, development, and enhancement of the public lands. Requires permits for right-of-way access for activities not in accord with the primary objective of the management of public or Indian lands under the Act.

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Statute or Order	Administering Agencies	Complying Agencies	Statutory Requirements
Fish and Wildlife Act of 1965 PL 85-624, 16 U.S.C.S. 742 <i>et seq.</i> (1999)	USFWS, NMFS (if appropriate), state agencies with jurisdiction over wildlife resources	Any federal agency that proposes to control or modify any body of water	Authorizes the Secretary of the Interior to take steps required for the development, management, advancement, conservation, and protection of fisheries and wildlife resources through research, acquisition of refuge lands, development of existing facilities, and other means. Designed to protect the aquatic environment as it affects fish and wildlife resources. Wildlife conservation should receive equal consideration and be coordinated with other aspects of water resources development.
Fish and Wildlife Conservation Act of 1980, 16 U.S.C.S. 2901 <i>et seq.</i> (1999)	DOI	All	Encourages federal agencies to conserve and promote conservation of non-game fish and wildlife species and their habitats.
Fish and Wildlife Coordination Act, as amended, 16 U.S.C.S. 661 <i>et seq.</i> (1999)	USFWS, NMFS, (if appropriate), DOI, state agencies with jurisdiction over wildlife resources	Any federal agency that proposes to control or modify any body of water	Designed to protect the aquatic environment as it affects fish and wildlife resources. Wildlife conservation should receive equal consideration and be coordinated with other aspects of water resources development.
Forest and Rangeland Renewable Resources Planning Act of 1974, as amended, 16 U.S.C.S. sec. 1600 <i>et seq.</i> (1999) (National Forest Management Act of 1976, 16 U.S.C.S. 1600 <i>et seq.</i> (1999))	USDA	BLM, USFS	Requires Federal agencies to develop resource management plans on land affected by their actions. Includes Forest Management Plans.
Magnuson-Stevens Fishery Conservation and Management (Sustainable Fisheries Act of 1996), Act. 16 U.S.C.S. 1801 <i>et seq.</i> (1999)	NMFS	All	Development of regional fishery management plans for off-shore fisheries, anadromous species and Continental Shelf fisheries. Promote protection of essential fish habitat in review of projects conducted under federal permits, licenses, or other authorities that affect or have the potential to affect such habitat.
Marine Mammal Protection Act, 16 U.S.C.S. 1361 <i>et seq.</i> (1972)	NMFS	All	Established moratorium, with exemptions, on the taking of marine mammals in U.S. waters and by U.S. citizens on the high seas.
Migratory Bird Treaty Act of 1918, 16 U.S.C.S. 703 <i>et seq.</i> (1999).	USFWS	All	An activity violates the Act if the action can kill or take a migratory bird. If the action is unavoidable, a permit can be obtained from the Fish and Wildlife Service.

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Statute or Order	Administering Agencies	Complying Agencies	Statutory Requirements
National Environmental Policy Act (NEPA), as amended, 42 U.S.C.S.4321 <i>et seq.</i>	EPA	Applies to all federal projects or projects that require federal involvement.	Requires Federal agencies to assess the impacts that their proposed actions may have on the environment.
National Historic Preservation Act of 1966, as amended, 16 U.S.C.S. 470 <i>et seq.</i> (1999)	DOI, NPS, states	All	Requires the agency official consider the effects an undertaking may have on historic properties and provide an opportunity for the State Historic Preservation Officer (SHPO) and/or the Advisory Council (AC) to comment on such effects.
National Trail System Act, 16 U.S.C.S. 1241 <i>et seq.</i> (1999)	DOI, USDA	BLM, USFS, BPA	Establishes and protects trails in urban areas and in scenic areas and along historic travel routes. Designates the Oregon National Historic Trail. Provides for additional national scenic or historical trails. Violations are designated by the agency that manages the area. Includes such regulations as requiring permits when burning or making unreasonable disturbances, or requiring special-use authorization for construction and maintenance in the area.
National Wildlife Refuge Administration Act, as amended, 16 U.S.C.S. 668dd (1999)	DOI (BLM, USFWS)	All	Protects designated wildlife refuges areas. Several are listed in Oregon and Washington.
Native American Graves Protection and Repatriation Act (ARPA) of 1990, 25 U.S.C.S. 3001 <i>et seq.</i> (1999)	DOI	All	Prior to intentional removal of Native American grave remains, obtain an ARPA permit and consult with tribes. When gravesites are unintentionally disturbed, halt work immediately, consult land management entity, and consult with tribes. Activity may resume 30 days after confirmation of notification to tribes.
Noise Control Act of 1972, as amended, 42 U.S.C.S. 4901 <i>et seq.</i> (1999)	EPA	All	Requires that federal entities comply with state and local requirements regarding noise. Requires all federal agencies to correct and abate any environmental noise in violation of EPA standards.
Noise Pollution and Abatement Act of 1970, 42 U.S.C.S. 7642 (1999)	EPA	All	Federal agency carrying out or sponsoring activity resulting in noise that is determined to be public nuisance shall abate such noise.
Pacific Northwest Electric Power Planning and Conservation Act (Northwest Power Act) 16 U.S.C.S. 839 <i>et seq.</i> (1999)	Pacific Northwest Power and Conservation Planning Council, DOE	BPA, FERC, BOR, Corps, NMFS, USFWS	Contains provisions to protect, mitigate, and enhance the fish and wildlife, including their spawning grounds and habitat, of the Columbia River and its tributaries.

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Statute or Order	Administering Agencies	Complying Agencies	Statutory Requirements
Pollution Prevention Act of 1990, 42 U.S.C.S. 13101 <i>et seq.</i> (1999)	EPA	All	Prevent pollution through source reduction practices.
Reservoir Salvage Act of 1960. 16 U.S.C.S 469 <i>et seq.</i> (amended by the Archeological and Historic Preservation Act, see above) to extend the provisions of the 1960 Act to all Federal construction activities and all federally licensed/assisted activities that cause loss of scientific, prehistoric, or archeological data	DOI	All	The act requires Federal agencies building or permitting the building of reservoirs to notify the Secretary of the Interior when such activities might destroy important archaeological, historic, or scientific data. That Secretary is authorized to conduct appropriate investigations to protect those data. The act also authorizes agencies to spend up to 1 percent of their construction funds on the protection of historic and archaeological resources. In 1974, the Reservoir Salvage Act was amended by the Archeological and Historic Preservation Act to extend the provisions of the 1960 Act to all Federal construction activities and all federally licensed or assisted activities that cause loss of scientific, prehistoric, or archeological data.
Resource Conservation and Recovery Act of 1976 (RCRA), as amended, 42 U.S.C.S. 6910 <i>et seq.</i> (1999) (Solid Waste Disposal Act)	EPA	All	Regulates the storage, use, and disposal of solid and hazardous wastes. Imposes requirements on generators and transporters of this waste, and on owners and operators of treatment, storage, and disposal (TSD) facilities.
Rivers and Harbors Act of 1938, as amended, 33 U.S.C.S. 540 <i>et seq.</i> (1999)	Corps	Any agency involved in waterway improvements	If a proposed action includes a structure or work in, under, or over a navigable water of the U.S.; structure or work affecting a navigable water of the U.S.; or the deposit of fill material or an excavation that in any manner alters or modifies the course, location, or capacity of any navigable water of the U.S., a permit is required from the Corps. Activities shall include a due regard for wildlife conservation.
Rivers and Harbors Appropriations Act of 1899, as amended, 33 U.S.C.S. 401 <i>et seq.</i> (1999)	Corps	All	Requires consent of Congress and approval from the Corps for construction of bridge, causeway, dam or dike over or in port, navigable river or other navigable waters.
Safe Drinking Water Act as amended, 42 U.S.C.S. 300f <i>et seq.</i> (1999)	EPA	All	Applies to public water systems. Act specifies contaminants that may have adverse health effects, and contains criteria and procedures to assure a supply of drinking water that complies with established maximum permissible contamination levels.

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Appendix B: Mission Statements and Statutory Tables

Statute or Order	Administering Agencies	Complying Agencies	Statutory Requirements
Soil and Water Resources Conservation Act of 1977, as amended, 16 U.S.C.S. 2001 <i>et seq.</i> (1999)	USDA	BLM, USFS, all USDA programs	Provides for program to conserve, protect and enhance soil, water and related resources (within scope of Department of Agriculture programs).
Surface Mining Control and Reclamation Act of 1977, 30 U.S.C.S. 1201 <i>et seq.</i> (1999)	DOI: Office of Surface Mining Reclamation and Enforcement		Focus mostly on coal but seems to include surface mining of other minerals. Provides for reclamation of mined areas that prevent or damage beneficial use of land or water resources or endanger health or safety of the public.
Taylor Grazing Act, as amended, 43 U.S.C.S. 315 <i>et seq.</i> (1999)	DOI	BLM, USFS	To preserve grazing land and its resources from destruction or unnecessary injury; defines grazing rights and protects them by regulation.
Toxic Substances Control Act, as amended, 15 U.S.C.S. 2601 <i>et seq.</i> (1999)	EPA	All	Intended to protect human health and the environment from toxic chemicals. Regulation of toxic chemicals including methods of use and disposal and protection of employees.
Water Bank Act as amended, 16 U.S.C.S. 1301 <i>et seq.</i> (1999)	USDA in coordination with DOI	Implementing agencies	Establishes program to prevent serious loss of wetlands and the preserve, restore, and improve such lands through conservation agreements with property owners.
Watershed Protection and Flood Prevention Act as amended, 16 U.S.C.S. 1001 <i>et seq.</i> (1999)	USDA	All	Prevention of erosion, floodwater, and sediment damages in watersheds of rivers of U.S.; furthering the conservation, development, use, and disposal of water, and the conservation and use of land and thereby preserving, protecting, and improving the nation's land and water resources and the quality of the environment. Federal agencies cooperate with and assist states and local governments.
Wild and Scenic Rivers Act PL90-542, 16 U.S.C.S. 1270 <i>et seq.</i> (1999)	DOI, USDA	BLM, USFS, Corps, BPA	Provides for preservation of designated rivers. Rivers are managed to preserve their natural qualities, with recreational opportunities reduced to prevent deterioration of the environment. Incompatible development in the river corridor or in areas directly affecting the river is prohibited. Listed rivers or river segments in Idaho, Oregon, and Washington.
Wilderness Act, as amended, 16 U.S.C.S. 1131 <i>et seq.</i> (1999)	USDA, USFS	All	There can be no settlement, mechanized activities, or commercial development within designated wilderness areas.

Appendix C
Threatened and Endangered Fish and Wildlife
Species in the BPA Service Area: Listing and
Legal Protections

Appendix C

THREATENED AND ENDANGERED FISH AND WILDLIFE SPECIES IN THE BPA SERVICE AREA: LISTING AND LEGAL PROTECTIONS

The following tables provide information on those plant and animal species found in states that are within the BPA Service Territory and are: listed as endangered and threatened under the federal Endangered Species Act; are proposed to be listed, or are a candidate species. Table A lists the types of species and provides information regarding their listing status and region. Table B identifies the legal documentation that provides the listed species with protection or identifies their status. These listings, and proposed listings, continuously change. The purpose of this Appendix is to show what types of fish and wildlife get listed as well as how to find such resource information.

Table A: Federally Listed Threatened and Endangered Species within the BPA Service Area (as of August 2002)

Species Type	Common Name	Scientific Name	Federal Status ¹	State In Which Listed ²
Mammals	Columbia Basin DPS Pygmy Rabbit	<i>Brachylagus idahoensis</i>	PE	ID, MT, NV, OR, UT, WA, WY
	Gray Wolf	<i>Canis lupus</i>	E	ID, MT, WA, WY
	Gray Wolf	<i>Canis lupus</i>	EXPN	ID, MT, WY
	Gray Wolf	<i>Canis lupus</i>	AT	ID, MT, OR, UT, WA, WY
	Black-tailed Prairie Dog	<i>Cynomys ludovicianus</i>	C	MT, WY
	Utah Prairie Dog	<i>Cynomys parvidens</i>	T	UT
	Steller Sea-lion	<i>Eumetopias jubatus</i>	T	OR, WA
	Canada Lynx	<i>Lynx canadensis</i>	T	ID, MT, OR, UT, WA, WY
	Humpback Whale	<i>Megaptera novaeangliae</i>	E	OR, WA
	Black-footed Ferret	<i>Mustela nigripes</i>	E	MT
	Black-footed Ferret	<i>Mustela nigripes</i>	EXPN	MT
	Columbian White-tailed Deer	<i>Odocoileus virginianus leucurus</i>	E	OR, WA
	Woodland Caribou	<i>Rangifer tarandus caribou</i>	E	ID, WA
	Southern Idaho Ground Squirrel	<i>Spermophilus brunneus endemicus</i>	C	ID
	Northern Idaho Ground Squirrel	<i>Spermophilus burnneus brunneus</i>	T	ID
	Washington Ground Squirrel	<i>Spermophilus washingtoni</i>	C	OR, WA
	Mazama Pocket Gopher	<i>Thomomys mazama</i>	C	WA
	Grizzly Bear	<i>Urus arctos horribilis</i>	T	ID, MT, WA, WY
	Grizzly Bear	<i>Urus arctos horribilis</i>	EXPN	ID, MT
	Preble's Meadow Jumping Mouse	<i>Zapus hudsonius preblei</i>	T	WY
Birds	Marbled Murrelet	<i>Brachyramphus marmoratus</i>	T	OR, WA
	Western Sage Grouse	<i>Centrocercus urophasianus phaios</i>	C	WA
	Western Snowy Plover	<i>Charadrius alexandrinus nivosus</i>	T	OR, WA
	Piping Plover	<i>Charadrius melodus</i>	T	MT
	Mountain Plover	<i>Charadrius montanus</i>	PT	MT, NV, UT, WY
	Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	C	ID, MT, NV, OR, UT, WA, WY
	Southwestern Willow Flycatcher	<i>Empidonax traillii eximius</i>	E	UT
	Streaked Horned Lark	<i>Eremophila alpestris strigata</i>	C	OR, WA
	Whooping Crane	<i>Grus americana</i>	EXPN	ID, UT, WY
	Whooping Crane	<i>Grus americana</i>	E	ID, MT, UT
	California Condor	<i>Gymnogyps californianus</i>	EXPN	NV, UT

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in the BPA Service Area

Species Type	Common Name	Scientific Name	Federal Status ¹	State In Which Listed ²
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	T	ID, MT, NV, OR, UT, WA, WY
	Eskimo Curlew	<i>Numenius borealis</i>	E	MT
	Brown Pelican	<i>Pelecanus occidentalis</i>	E	OR, WA
	Short-tailed Albatross	<i>Phoebastria albatrus</i>	E	OR, WA
	Least Tern	<i>Sterna antillarum</i>	E	MT
	Northern Spotted Owl	<i>Strix occidentalis caurina</i>	T	OR, WA
	Mexican Spotted Owl	<i>Strix occidentalis lucida</i>	T	UT
Reptiles and Amphibians	Wyoming Toad	<i>Bufo baxteri</i>	E	WY
	Boreal Toad	<i>Bufo boreas boreas</i>	C	WY
	Loggerhead Sea Turtle	<i>Caretta caretta</i>	T	OR, WA
	Green Sea Turtle	<i>Chelonia mydas</i>	T	OR, WA
	Leatherback Sea Turtle	<i>Dermochelys coriacea</i>	E	OR, WA
	Desert Tortoise	<i>Gopherus agassizii</i>	T	NV, UT
	Columbia Spotted Frog	<i>Rana luteiventris</i>	C	ID, NV, OR
	Mountain Yellow-legged Toad	<i>Rana muscosa</i>	E	NV
	Relict Leopard Frog	<i>Rana onca</i>	C	NV
	Oregon Spotted Frog	<i>Rana pretiosa</i>	C	OR, WA
Fish	White Sturgeon (Kootenai R.)	<i>Acipenser transmontanus</i>	E	ID, MT
	Warner Sucker	<i>Catostomus warnerensis</i>	T	OR
	Shortnose Sucker	<i>Chasmistes brevirostris</i>	E	OR
	Cui-ui	<i>Chasmistes cujus</i>	E	NV
	June Sucker	<i>Chasmistes liorus</i>	E	UT
	White River Springfish	<i>Crenichthys baileyi baileyi</i>	E	NV
	Hiko White River Springfish	<i>Crenichthys baileyi grandis</i>	E	NV
	Railroad Valley Springfish	<i>Crenichthys nevadae</i>	T	NV
	Devils Hole Pupfish	<i>Cyprinodon diabolis</i>	E	NV
	Ash Meadows Amargosa Pupfish	<i>Cyprinodon nevadensis mionectes</i>	E	NV
	Warm Springs Pupfish	<i>Cyprinodon nevadensis pectoralis</i>	E	NV
	Lost River Sucker	<i>Deltistes luxatus</i>	E	OR
	Pahrump Poolfish	<i>Empetrichthys latos</i>	E	NV
	Desert Dace	<i>Eremichthys acros</i>	T	NV
	Hutton Tui Chub	<i>Gila bicolor ssp.</i>	T	OR
	Borax Lake Chub	<i>Gila boraxobius</i>	E	OR
	Humpback Chub	<i>Gila cypha</i>	E	UT
	Bonytail Chub	<i>Gila elegans</i>	E	NV, UT
	Pahrnagat Roundtail Chub	<i>Gila robusta jordani</i>	E	NV
	Virgin River Chub	<i>Gila seminuda</i>	E	NV, UT
	White River Spinedace	<i>Lepidomeda albivallis</i>	E	NV
	Big Spring Spinedace	<i>Lepidomeda mollispinis pratensis</i>	T	NV
	Moapa Dace	<i>Moapa coriacea</i>	E	NV
	Chinook Salmon (Lower Columbia R.)	<i>Oncorhynchus tshawytscha</i>	E	OR, WA
	Chinook Salmon (Puget Sound, Upper Columbia R., Upper White Salmon R., Upper Clackamas R. [Fall/Summer], and Upper Willamette R.)	<i>Oncorhynchus tshawytscha</i>	T	OR, WA
	Chinook Salmon (Snake R., Tucannon R., Grande Ronde R., Imnaha R., Salmon R., and Clearwater R. [All Fall Only])	<i>Oncorhynchus tshawytscha</i>	T	ID, OR, WA
	Chinook Salmon (Snake R., Tucannon R., Grande Ronde R., Imnaha R., and Salmon R. [All Spring/Summer])	<i>Oncorhynchus tshawytscha</i>	T	ID, OR, WA
	Chum Salmon (Columbia R. [Year-Round], Olympic Peninsula Rivers [Summer], Hood Canal [Summer], and Dungeness Bay [Summer])	<i>Oncorhynchus keta</i>	T	OR, WA
	Coho Salmon (OR Coastal Areas)	<i>Oncorhynchus kisutch</i>	PT	OR
	Coho Salmon (OR SW River Basins)	<i>Oncorhynchus kisutch</i>	T	OR
Lahontan Cutthroat Trout	<i>Oncorhynchus clarki henshawi</i>	T	NV, OR, UT	
Sockeye Salmon (Ozette Lake and Tributary Streams)	<i>Onchohynchus nerka</i>	T	WA	

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Species Type	Common Name	Scientific Name	Federal Status ¹	State In Which Listed ²
	Sockeye Salmon (Snake R. and Wherever Found in ID)	<i>Oncorhynchus nerka</i>	E	ID, OR, WA
	Steelhead Trout (Lower and Middle Columbia R., Hood R., Upper Willamette R., and Lower Willamette R. [Winter Only])	<i>Oncorhynchus mykiss</i>	T	OR, WA
	Steelhead Trout (Snake River Basin)	<i>Oncorhynchus mykiss</i>	T	ID, OR, WA
	Steelhead Trout (Upper Columbia River)	<i>Oncorhynchus mykiss</i>	E	OR, WA
	Oregon Chub	<i>Oreonichthys crameri</i>	E	OR
	Woundfin	<i>Plagopterus argentissimus</i>	E	NV, UT
	Colorado Pikeminnow	<i>Ptychocheilus lucius</i>	E	UT, WY
	Independence Valley Speckled Dace	<i>Rhinichthys osculus lethoporus</i>	E	NV
	Ash Meadows Speckled Dace	<i>Rhinichthys osculus nevadensis</i>	E	NV
	Clover Valley Speckled Dace	<i>Rhinichthys osculus oligoporus</i>	E	NV
	Foskett Speckled Dace	<i>Rhinichthys osculus ssp.</i>	T	OR
	Kendall Warm Springs Dace	<i>Rhinichthys osculus thermalis</i>	E	WY
	Bull Trout	<i>Salvelinus confluentus</i>	T	ID, MT, NV, OR, WA
	Pallid Sturgeon	<i>Scaphirhynchus albus</i>	E	MT
	Razorback Sucker	<i>Xyrauchen texanus</i>	E	NV, UT, WY
Aquatic Invertebrates	Banbury Springs Limpet	<i>Lanx sp.</i>	E	ID
	Bliss Rapids Snail	<i>Taylorconcha serpenticola</i>	T	ID
	Bonneville Pondsnailed	<i>Stagnicola bonnevillensis</i>	C	UT
	Bruneau Hot Springsnailed	<i>Pyrgulopsis bruneauensis</i>	E	ID
	Ogden Deseret Mountainsnailed	<i>Oreohelix peripherica wasatchensis</i>	C	UT
	Kanab Ambersnailed	<i>Oxyloma haydeni kanabensis</i>	E	UT
	Idaho Springsnailed	<i>Fontelicella idahoensis</i>	E	ID
	Snake River Physa Snail	<i>Physa natricina</i>	E	ID
	Utah Valvata Snail	<i>Valvata utahensis</i>	E	ID, UT
	Vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	T	OR
Insects	Ash Meadow Naucorid	<i>Ambrysus amargosus</i>	T	NV
	Coral Pink Sand Dunes Tiger Beetle	<i>Cicindela limbata albissima</i>	C	UT
	Fender's Blue Butterfly	<i>Icaricia icarioides fenderi</i>	E	OR
	Mardon Skipper	<i>Polites mardon</i>	C	OR, WA
	Carson Wandering Skipper	<i>Psuedocopaeodes eunus obscurus</i>		
	Oregon Silverspot Butterfly	<i>Speyeria zerene hippolyta</i>	T	OR, WA
	Warm Springs Zaitzevian Riffle Beetle	<i>Zaitzevia thermae</i>	C	MT
Plants	Horseshoe Milk-vetch	<i>Astragalus equisolensis</i>	C	UT
	Holmgren Milk-vetch	<i>Astragalus homgreniorum</i>	E	UT
	Heliotrope Milk-vetch	<i>Astragalus montii</i>	T	UT
	Ash Meadows Milk-vetch	<i>Astragalus phoenix</i>	T	NV
	Slender Moonwort	<i>Botrychium lineare</i>	C	MT, OR, WA
	Navajo Sedge	<i>Carex specuicola</i>	T	UT
	Aquarius Paintbrush	<i>Castilleja aquariensis</i>	C	UT
	Christ's Paintbrush	<i>Castilleja christii</i>	C	ID
	Golden Paintbrush	<i>Castilleja levisecta</i>	T	OR, WA
	Spring-loving Centaury	<i>Centaurium namophilum</i>	T	NV
	Jones Cycladenia	<i>Cycladenia jonesii</i>	T	UT
	Ash Meadows Sunray	<i>Enceliopsis nudicaulis var. corrugata</i>	T	NV
	Basalt Daisy	<i>Erigeron basalticus</i>	C	WA
	Willamette Daisy	<i>Erigeron decumbens decumbens</i>	E	OR
	Maguire Daisy	<i>Erigeron maguirei</i>	T	UT
	Umtanum Desert Buckwheat	<i>Eriogonum codium</i>	C	WA
	Steamboat Buckwheat	<i>Eriogonum ovalifolium var. williamsiae</i>	E	NV
	Gentner's Fritillary	<i>Fritillaria gentneri</i>	E	OR
	Colorado Butterfly Plant	<i>Gaura neomexicana coloradensis</i>	T	WY
	Ash Meadows Gumplant	<i>Grindelia fraxino-pratensis</i>	T	NV
	Showy Stickseed	<i>Hackelia venusta</i>	E	WA
	Water Howellia	<i>Howellia aquatilis</i>	T	ID, MT, OR, WA
	Ash Meadows Ivesia	<i>Ivesia kingii var. eremica</i>	T	NV

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Species Type	Common Name	Scientific Name	Federal Status ¹	State In Which Listed ²
	Webber Ivesia	<i>Ivesia webberi</i>	C	NV
	Barneby Ridge-cress	<i>Lepidium barnebyanum</i>	E	UT
	Slick Spot Peppergrass	<i>Lepidium papilliferum</i>	C	ID
	Kodachrome Bladderpod	<i>Lesquerella tumulosa</i>	E	UT
	White Bluffs Bladderpod	<i>Lesquerella tuplashensis</i>	C	WA
	Western Lily	<i>Lilium occidentale</i>	E	OR
	Large-flowered Woolly Meadowfoam	<i>Limnanthes floccosa grandiflora</i>	PE	OR
	Bradshaw's Desert Parsley (Lomatium)	<i>Lomatium bradshawii</i>	E	OR, WA
	Cook's Lomatium	<i>Lomatium cookii</i>	PE	OR
	Kincaid's Lupine	<i>Lupinus sulphureus kincaidii</i>	T	OR, WA
	Ash Meadows Blazingstar	<i>Mentzelia leucophylla</i>	T	NV
	MacFarlane's Four-O'Clock	<i>Mirabilis macfarlanei</i>	T	ID, OR
	Amargosa Niterwort	<i>Nitrophila mohavensis</i>	E	NV
	San Rafael Cactus	<i>Pediocactus despainii</i>	E	UT
	Siler Pincushion Cactus	<i>Pediocactus sileri</i>	T	UT
	Winkler Cactus	<i>Pediocactus winkleri</i>	T	UT
	Graham Beardtongue	<i>Penstemon grahamii</i>	C	UT
	Blowout Penstemon	<i>Penstemon haydenii</i>	E	WY
	White River Beardtongue	<i>Penstemon scariosus albifluvis</i>	C	UT
	Clay Phacelia	<i>Phacelia argillacea</i>	E	UT
	Rough Popcornflower	<i>Plagiobothrys hirtus</i>	E	OR
	Soldier Meadows Cinquefoil	<i>Potenilla basaltica</i>	C	NV
	Maquire Primrose	<i>Primula maquirei</i>	T	UT
	Autumn Buttercup	<i>Ranunculus aestivalis</i>	E	UT
	Tahoe Yellow Cress	<i>Rorippa subumbellata</i>	C	NV
	Clay Reed-mustard	<i>Schoenocrambe argillacea</i>	T	UT
	Barneby Reed-mustard	<i>Schoenocrambe barnebyi</i>	E	UT
	Shrubby Reed-mustard	<i>Schoenocrambe suffrutescens</i>	E	UT
	Uinta Basin Hookless Cactus	<i>Sclerocactus glaucus</i>	T	UT
	Wright Fishhook Cactus	<i>Sclerocactus glaucus</i>	T	UT
	Nelson's Checker-mallow	<i>Sidalcea nelsoniana</i>	T	OR, WA
	Wenatchee Mountains Checker-mallow	<i>Sidalcea oregona calva</i>	E	WA
	Spalding's Catchfly	<i>Silene spaldingii</i>	T	ID, MT, OR, WA
	Ute Ladies'-tresses	<i>Spiranthes diluvialis</i>	T	ID, MT, UT, WA, WY
	Malheur Wire-lettuce	<i>Stephanomeria malheurensis</i>	E	OR
	Howell's Spectacular Thelypody	<i>Thelypodium howellii spectabilis</i>	T	OR
	Last Chance Townsendia	<i>Townsendia aprica</i>	T	UT
	Desert Yellowhead	<i>Yermo xanthocephalus</i>	T	WY

¹ Status Definitions:

- AT = Proposed Reclassification to Threatened
- C = Candidate
- E = Endangered
- EmE = Emergency listing as Endangered
- EXPN = Experimental Population, Non-Essential
- PE = Proposed Endangered
- PT = Proposed Threatened
- T = Threatened

² State in Which Listed:

- ID = Idaho
- MT = Montana
- NV = Nevada
- OR = Oregon
- UT = Utah
- WA = Washington
- WY = Wyoming

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Appendix C: Threatened and Endangered Fish and Wildlife Species
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Table B: Legal Documentation Supporting the Federal Listing of Threatened and Endangered Species in the BPA Service Area (as of July 2002)

Common Name	Date First Listed ¹	Federal Register Reference (Most Recent)	Lead USFWS Region	Critical Habitat	Special Rules
MAMMALS					
Black-footed Ferret	11-Mar-6- E 18-Aug-94- EXPN	32 FR 4001- E 59 FR 42696- EXPN	6	None	50 CFR 17.84(g)
Black-tailed Prairie Dog	None	67 FR 40657	6	None	None
Canada Lynx	24-Mar-00	65 FR 16051	6	None	50 CFR 17.40(k), 50 CFR 23.54
Columbia Basin DPS Pygmy Rabbit	30-Nov-01	66 FR 59769	1	None	None
Columbian White-tailed Deer	11-Mar-67	32 FR 4001	1	None	None
Gray Wolf	11-Mar-67- E 22-Nov-94- EXPN	42 FR 29527- E 59 FR 60266- EXPN	AT=3; E=3; EXPN=6	50 CFR 17.95(a)	50 CFR 17.40(d), 50 CFR 17.84(i), 50 CFR 17.84(k)
Grizzly Bear	11-Mar-67- E 17-Nov-00- EXPN	40 FR 31734- E 65 FR 69623- EXPN	6	None	50 CFR 17.40(b), 50 CFR 17.84(l)
Humpback Whale	2-Jun-70	35 FR 8491	NMFS	None	50 CFR 224.101, 50 CFR 224.103
Mazama Pocket Gopher	None	67 FR 40657	1	None	None
Northern Idaho Ground Squirrel	5-Apr-00	65 FR 17779	1	None	None
Preble's Meadow Jumping Mouse	13-May-98	63 FR 26517	6	None	50 CFR 17.40(l)
Southern Idaho Ground Squirrel	None	67 FR 40657	1	None	None
Stellar Sea-lion	5-Apr-90	56 FR 58184	NMFS	50 CFR 226.202	50 CFR 223.102, 50 CFR 223.202
Utah Prairie Dog	4-Jun-73	38 FR 14678	6	None	50 CFR 17.40(g)
Washington Ground Squirrel	None	67 FR 40657	1	None	None
Woodland Caribou	14-Jan-83	49 FR 7390	1	None	None
BIRDS					
Bald Eagle	12-Jul-95	64 FR 35999	3	None	50 CFR 17.41(a)
Brown Pelican	2-Jun-70	35 FR 16047	1	None	None
California Condor	11-Mar-67	61 FR 54043	1	50 CFR 17.95(b)	50 CFR 17.84(j)
Eskimo Curlew	11-Mar-67	35 FR 8491	7	None	None
Least Tern	28-May-85	50 FR 21784	3	None	None
Marbled Murrelet	1-Oct-92	57 FR 45328	1	50 CFR 17.95(b)	None
Mexican Spotted Owl	16-Mar-93	58 FR 14248	2	50 CFR 17.95(b)	None
Mountain Plover	None	67 FR 40657	6	None	None
Northern Spotted Owl	26-Jun-90	55 FR 26114	1	50 CFR 17.95(b)	None
Piping Plover	11-Dec-85	50 FR 50726	3	50 CFR 17.95(b)	None
Short-tailed Albatross	2-Jun-70	65 FR 46643	7	None	None
Southwestern Willow Flycatcher	27-Feb-95	60 FR 10693	2	50 CFR 17.95(b)	None
Streaked Horned Lark	None	67 FR 40657	1	None	None
Western Sage Grouse	None	67 FR 40657	1	None	None
Western Snowy Plover	5-Mar-93	58 FR 12864	1	50 CFR 17.95(b)	None
Whooping Crane	11-Mar-67 22-Jan-93	32 FR 4001- E 62 FR 38932- EXPN	2 4	50 CFR 17.95(b)	50 CFR 17.84(h)
Yellow-billed Cuckoo	None	67 FR 40657	1	None	None

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Common Name	Date First Listed ¹	Federal Register Reference (Most Recent)	Lead USFWS Region	Critical Habitat	Special Rules
REPTILES AND AMPHIBIANS					
Boreal Toad	None	67 FR 40657	6	None	None
Columbia Spotted Frog	None	64 FR 57533	1	None	None
Desert Tortoise	20-Aug-80	55 FR 12178	1	50 CFR 17.95(c)	50 CFR 17.42(e)
Green Sea Turtle	28-Jul-78	43 FR 32800	4, NMFS	50 CFR 226.208	50 CFR 17.42(b), 50 CFR 223.205, 50 CFR 223.206, 50 CFR 223.207, 50 CFR 224.104
Leatherback Sea Turtle	2-Jun-70	35 FR 8491	4, NMFS	50 CFR 17.95(c), 50 CFR 226.207	50 CFR 224.104
Loggerhead Sea Turtle	28-Jul-78	43 FR 32800	4, NMFS	None	50 CFR 17.42(b), 50 CFR 223.205, 50 CFR 223.206, 50 CFR 223.207
Mountain Yellow-legged Frog	2-Jul-02	67 FR 44382	1	None	None
Oregon Spotted Frog	None	67 FR 40657	1	None	None
Relict Leopard Frog	None	67 FR 40657	1	None	None
Wyoming toad	17-Jan-84	49 FR 1992	6	None	None
FISH					
Ash Meadows Amargosa Pupfish	10-May-82	48 FR 40178	1	50 CFR 17.95(e)	None
Ash Meadows Speckled Dace	10-May-82	48 FR 40178	1	50 CFR 17.95(e)	None
Big Spring Spinedace	28-Mar-85	50 FR 12298	1	50 CFR 17.95(e)	50 CFR 17.44(i)
Bonytail Chub	23-Apr-80	45 FR 27710	6	50 CFR 17.95(e)	None
Borax Lake Chub	28-May-80	47 FR 43957	1	50 CFR 17.95(e)	None
Bull Trout	10-Jun-98	64 FR 58909	1	None	50 CFR 17.44(w) and 50 CFR 17.44(x)
Chinook Salmon (Snake R., Tucannon R., Grande Ronde R., Imnaha R., Salmon R., and Clearwater R. [All Fall Only])	22-Apr-92	59 FR 13836	NMFS	50 CFR 226.204, 50 CFR 226.205	None
Chinook Salmon (Snake R., Tucannon R., Grande Ronde R., Imnaha R., and Salmon R. [All Spring/Summer])	22-Apr-92	59 FR 13836	NMFS	50 CFR 226.204, 50 CFR 226.205	None
Chinook Salmon (Puget Sound, Upper Columbia R., Upper White Salmon R., Upper Clackamas R. [Fall/Summer], and Upper Willamette R.)	2-Aug-99	59 FR 13836	NMFS	50 CFR 226.204, 50 CFR 226.205	50 CFR 223.203
Chinook Salmon (Lower Columbia R.)	2-Aug-99	59 FR 13836	NMFS	50 CFR 226.204, 50 CFR 226.205	None
Chum Salmon (Columbia R. [Year-Round], Olympic Peninsula Rivers [Summer], Hood Canal [Summer], and Dungeness Bay [Summer])	2-Aug-99	64 FR 41835	NMFS	50 CFR 226.212	50 CFR 223.203
Clover Valley Speckled Dace	10-Oct-89	54 FR 41448	1	None	None
Coho Salmon (OR Coastal Areas)	25-Jul-95	60 FR 38011	NMFS	None	50 CFR 223.203
Coho Salmon (OR SW River Basins)	18-Jun-97	61 FR 59028	NMFS	None	None

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Colorado Pikeminnow	11-Mar-67	50 FR 30188	6	50 CFR 17.95(e)	50 CFR 17.84(b)
Cui-ui	11-Mar-67	32 FR 4001	1	None	None
Desert Dace	11-Mar-67	50 FR 50304	1	50 CFR 17.95(e)	50 CFR 17.44(m)
Devils Hole Pupfish	11-Mar-67	32 FR 4001	1	None	None
Foskett Speckled Dace	28-Mar-85	50 FR 12302	1	None	50 CFR 17.44(j)
Hiko White River Springfish	27-Sep-85	50 FR 39123	1	50 CFR 17.95(e)	None
Humpback Chub	11-Mar-67	32 FR 4001	6	50 CFR 17.95(e)	None
Hutton Tui Chub	28-Mar-85	50 FR 12302	1	None	50 CFR 17.44(j)
Independence Valley Speckled Dace	10-Oct-89	54 FR 41448	1	None	None
June Sucker	31-Mar-86	51 FR 10851	6	50 CFR 17.95(e)	None
Kendall Warm Springs Dace	13-Oct-70	35 FR 16047	6	None	None
Lahontan Cutthroat Trout	13-Oct-70	40 FR 29863	1	None	50 CFR 17.44(a)
Lost River Sucker	18-Jul-88	53 FR 27130	1	None	None
Moapa Dace	11-Mar-87	32 FR 4001	1	None	None
Oregon Chub	18-Oct-93	58 FR 53800	1	None	None
Pahranagat Roundtail Chub	13-Oct-70	35 FR 16047	1	None	None
Pahrump Poolfish	11-Mar-67	58 FR 49279	1	None	None
Pallid Sturgeon	6-Sep-90	55 FR 36641	6	None	None
Railroad Valley Springfish	31-Mar-86	51 FR 10857	1	50 CFR 17.95(e)	50 CFR 17.44(n)
Razorback Sucker	23-Oct-91	56 FR 54957	6	50 CFR 17.95(e)	None
Shortnose Sucker	18-Jul-88	53 FR 27130	1	None	None
Sockeye Salmon (Snake R. and ID)	3-Jan-92	57 FR 212	NMFS	50 CFR 226.205	None
Sockeye Salmon (Ozette Lake and Tributary Streams)	25-Mar-99	57 FR 212	NMFS	None	50 CFR 223.203
Steelhead Trout (Lower and Middle Columbia R., Hood R., Upper Willamette R., and Lower Willamette R. [Winter Only])	17-Jun-98	64 FR 41835	NMFS	None	50 CFR 223.203
Steelhead Trout (Snake River Basin)	17-Jun-98	64 FR 41835	NMFS	None	50 CFR 223.203
Steelhead Trout (Upper Columbia River)	17-Jun-98	64 FR 41835	NMFS	None	None
Virgin River Chub	24-Aug-89	54 FR 35305	6	50 CFR 17.95(e)	None
Warm Springs Pupfish	13-Oct-70	35 FR 16047	1	None	None
Warner Sucker	27-Sep-85	50 FR 39117	1	50 CFR 17.95(e)	50 CFR 17.44(l)
White River Spinedace	12-Sep-85	50 FR 37194	1	50 CFR 17.95(e)	None
White River Springfish	27-Sep-85	50 FR 39123	1	50 CFR 17.95(e)	None
White Sturgeon (Kootenai R.)	6-Sep-94	59 FR 45989	1	50 CFR 17.95(e)	None
Woundfin	13-Oct-70	35 FR 16047	6	50 CFR 17.95(e)	50 CFR 17.84(b)
AQUATIC INVERTEBRATES					
Banbury Springs Limpet	14-Dec-92	57 FR 59244	1	None	None
Bliss Rapids Snail	14-Dec-92	57 FR 59244	1	None	None
Bonneville Pondsnailed	None	67 FR 40657	6	None	None
Bruneau Hot Springsnailed	25-Jan-93	58 FR 5938	1	None	None
Idaho Springsnailed	14-Dec-92	57 FR 59244	1	None	None
Kanab Ambersnailed	8-Aug-91	57 FR 44340	6	None	None
Ogden Deseret Mountainsnailed	None	67 FR 40657	6	None	None
Snake River Physa Snail	14-Dec-92	57 FR 59244	1	None	None
Utah Valvata Snail	14-Dec-92	57 FR 59244	1	None	None
Vernal Pool Fairy Shrimp	19-Sep-94	59 FR 48136	1	None	None

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INSECTS					
Ash Meadow Naucorid	20-May-85	50 FR 20777	1	50 CFR 17.95(i)	None
Carson Wandering Skipper	29-Nov-01	67 FR 51116	1	None	None
Coral Pink Sand Dunes Tiger Beetle	None	67 FR 40657	6	None	None
Fender's Blue Butterfly	25-Jan-00	65 FR 3875	1	None	None
Mardon Skipper	None	67 FR 40657	1	None	None
Oregon Silverspot Butterfly	2-Jul-80	45 FR 44935	1	50 CFR 17.95(i)	None
Warm Springs Zaitzevian Riffle Beetle	None	67 FR 40657	6	None	None
PLANTS					
Amargosa Niterwort	20-May-85	50 FR 20777	1	50 CFR 17.96(a)	None
Aquarius Paintbrush	None	67 FR 40657	6	None	None
Ash Meadows Blazingstar	20-May-85	50 FR 20777	1	50 CFR 17.96(a)	None
Ash Meadows Gumplant	20-May-85	50 FR 20777	1	50 CFR 17.96(a)	None
Ash Meadows Ivesia	20-May-85	50 FR 20777	1	50 CFR 17.96(a)	None
Ash Meadows Milk-vetch	20-May-85	50 FR 20777	1	50 CFR 17.96(a)	None
Ash Meadows Sunray	20-May-85	50 FR 20777	1	50 CFR 17.96(a)	None
Autumn Buttercup	21-Jul-89	54 FR 30550	1	None	None
Barneby Ridge-cress	28-Sep-90	55 FR 39860	6	None	None
Basalt Daisy	None	67 FR 40657	1	None	None
Blowout Penstemon	1-Sep-87	52 FR 32926	6	None	None
Bradshaw's Desert-Parsley	30-Sep-88	53 FR 38448	1	None	None
Christ's Paintbrush	None	67 FR 40657	1	None	None
Clay Phacelia	28-Sep-78	43 FR 44811	6	None	None
Clay Reed-mustard	14-Jan-92	57 FR 1398	6	None	None
Colorado Butterfly Plant	18-Oct-00	65 FR 62302	6	None	None
Cook's Lomatium	15-May-00	67 FR 40657	1	None	None
Desert Yellowhead	14-Mar-02	67 FR 11442	6	None	None
Gentner's Fritillary	10-Dec-99	64 FR 69195	1	None	None
Golden Paintbrush	11-Jun-97	62 FR 31740	1	None	None
Graham Beardtongue	None	67 FR 40657	6	None	None
Heliotrope Milk-vetch	6-Nov-87	60 FR 49854	6	50 CFR 17.96(a)	None
Holmgren Milk-vetch	28-Sep-01	66 FR 49560	6	None	None
Horseshoe Milk-vetch	None	67 FR 40657	6	None	None
Howell's Spectacular Thelypody	26-May-99	64 FR 28393	1	None	None
Jones Cycladenia	5-May-86	51 FR 16526	6	None	None
Kincaid's Lupine	25-Jan-00	65 FR 3875	1	None	None
Kodachrome Bladderpod	6-Oct-93	58 FR 52027	6	None	None
Large-flowered Woolly Meadowfoam	15-May-00	67 FR 40657	1	None	None
Last Chance Townsendia	21-Aug-85	50 FR 33734	6	None	None
MacFarlane's Four-O'Clock	26-Oct-79	61 FR 10693	1	None	None
Maguire Daisy	5-Sep-85	61 FR 31054	6	None	None
Maguire Primrose	21-Aug-85	50 FR 33731	6	None	None
Malheur Wire-lettuce	10-Nov-82	47 FR 50881	1	50 CFR 17.96(a)	None
Navajo Sedge	8-May-85	50 FR 19370	2	50 CFR 17.96(a)	None
Nelson's Checker-mallow	12-Feb-93	58 FR 8235	1	None	None
Rough Popcornflower	25-Jan-00	65 FR 3866	1	None	None
San Rafael Cactus	16-Sep-87	52 FR 34914	6	None	None
Showy Stickseed	6-Feb-02	67 FR 5515	1	None	None
Shrubby Reed-mustard	6-Oct-87	52 FR 37416	6	None	None
Siler Pincushion Cactus	26-Oct-79	58 FR 68476	2	None	None
Slender Moonwort	None	67 FR 40657	1	None	None
Slick Spot Peppergrass	None	67 FR 40657	1	None	None
Soldier Meadows	None	67 FR 40657	1	None	None

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Cinquefoil					
Spalding's Catchfly	10-Oct-01	66 FR 51597	1	None	None
Spring-loving Centaury	20-May-85	50 FR 20777	1	50 CFR 17.96(a)	None
Steamboat Buckwheat	8-Jul-86	51 FR 24669	1	None	None
Tahoe Yellow Cress	None	67 FR 40657	1	None	None
Uinta Basin Hookless Cactus	11-Oct-79	44 FR 58868	6	None	None
Umatanum Desert Buckwheat	None	67 FR 40657	1	None	None
Ute Ladies'-tresses	17-Jan-92	57 FR 2048	6	None	None
Water Howellia	14-Jul-94	59 FR 35860	6	None	None
Webber Ivesia	None	67 FR 40657	1	None	None
Wenatchee Mountains Checker-mallow	22-Dec-99	66 FR 54807	1	50 CFR 17.96(a)	None
Western Lily	17-Aug-94	59 FR 42171	1	None	None
White Bluffs Bladderpod	None	67 FR 40657	1	None	None
White River Beardtongue	None	67 FR 40657	6	None	None
Willamette Daisy	25-Jan-00	65 FR 3875	1	None	None
Winkler Cactus	20-Aug-98	63 FR 44587	6	None	None
Wright Fishhook Cactus	11-Oct-79	44 FR 58866	6	None	None

¹ Species are listed by either the date they were first listed as threatened or endangered, or in the case of proposed species, the date the proposal for listing was published. Candidate species, since they are neither listed nor proposed for listing, do not have a date listed.

Appendix D

**Major Public Comment Issues,
Northwest Power Planning Council
Framework Concept Papers, and
Public Positions on Fish and
Wildlife Management and Recovery**

Appendix D

MAJOR PUBLIC COMMENT ISSUES, NORTHWEST POWER PLANNING COUNCIL FRAMEWORK CONCEPT PAPERS, AND PUBLIC POSITIONS ON FISH AND WILDLIFE MANAGEMENT AND RECOVERY

The information in this appendix forms the underlying foundation of concerns and issues throughout the region. As time progresses, these issues and concerns will continue to be raised; and as better science and a more in-depth understanding of fish and wildlife management evolves, answers will emerge.

A. Major Public Comment Issues

The key questions listed below were identified from a three-day conference held in November 1998. These questions have been, and will continue to be the questions asked over time, which is why they have been included in this appendix.

DRAFT 3/1/99
QUESTIONS FROM THE 3-DAY NOVEMBER CONFERENCE
*CREATING AND PRESERVING A HEALTHY, RESILIENT AND SUSTAINABLE
SOCIAL AND ECOLOGICAL SYSTEM*

KEY QUESTIONS (More Than 5 Votes)

1. **(77)** Will politics continue status quo because of:
 - a. conflicting legal mandates (e.g., ESA, CWA, NWPA)?
 - b. a mismatch between political and ecological boundaries?
 - c. Corporate interests?
 - d. environmental groups strong campaign for their interests?
 - e. the lack of regional and/or national political will to resolve the problem?
2. **(35)** Will there be a proliferation of process by the sheer number of decision makers and stakeholders?
3. **(90)** Will the increasing Population lead to:
 - a. an urban and rural split?
 - b. reliance on mining and natural resources for economic development?
 - c. an increase in per capita consumption?
 - d. an unwillingness to examine/model futures analyses?
4. **(10)** Will there be a change in values:
 - a. that creates an unavailability of funding?
 - b. that constantly causes changes in economies and values?

- c. that end in greed?
5. **(11)** Is there a lack of trust:
 - a. with the government agencies?
 - b. among stakeholders?
 - c. others?
6. **(34)** Are we:
 - a. pitting species and resources against each other (using mitigation of one to "justify" loss of another)?
 - b. causing conversions of habitat we can't get back?
7. **(50)** Are we failing to manage ourselves:
 - a. by not focusing on species and systems?
 - b. because it is cheaper/easier to avoid responsibility than to take responsibility?
 - c. by transferring costs of one resource to another (e.g., not internalizing costs)?
 - d. by following private agendas (i.e., tragedy of common good)?
 - e. by the lack of developing a stewardship paradigm?
8. **(11)** Are there incompatible goals for river use?
9. **(16)** Is there an inability to deal with uncertainty (analysis paralysis) because:
 - a. there is an inability to move from crisis management to planning?
 - b. every interest group has ability to veto a plan?
 - c. there is an inability to change?
 - d. the cynicism is inhibiting the development of solutions?
 - e. there is an unwillingness to act in face of imperfect information?
10. **(23)** Is there something to learn from historical mistakes?
11. **(28)** Will an engineering solution work for the biological/environmental problems (techno-fix)?
12. **(87)** Is there a lack of an ecosystem approach to species recovery because of:
 - a. a lack of understanding of the natural spawning process?
 - b. a lack of a total system focus?
 - c. an increasing awareness of natural/normative solutions?
 - d. a lack of understanding the importance location of headwaters to the system makes?
 - e. an increasing recognition of place (i.e., local involvement)?
 - f. a violation of basic ecological principles?
 - g. conversion of irreplaceable habitat?
13. **(47)** Is the Government living up to promises of sovereignty:
 - a. involving public v. sovereign concerns?
 - b. by understanding Indian Treaty rights?

B. Framework Alternatives

In November 1998, the Framework Project received 28 submitted concept papers on how the Columbia River Basin should be managed (see Section C below). Over one-hundred individual fish and wildlife recovery strategies were developed from these papers. The strategies were then distilled into seven alternatives. The alternatives reflect a range of options that span the views of regional interests. This wide variance of opinion is why these alternatives have been included in this appendix.

In February 2000, the Northwest Power Planning Council published these alternatives in The Year of the Decision, Renewing the Northwest Power Planning Council's Fish and Wildlife Program. However, drafts of the alternatives were reviewed throughout the Framework Process. Numerous Sample Implementation Actions were taken from these various drafts. Although some of the actions cited in the SIA Tables (Volume 3) may not appear in the final Framework alternatives, they still reflect specific steps that have been, or are being, considered by the Region for fish and wildlife.

Summary of Alternative 1: A connected, self-sustaining ecosystem

Vision

Alternative 1 suggests that the only way to restore fish and wildlife is to restore the ecosystem to a much more natural state by eliminating dams, hatcheries, and other artificial constraints and approaches, and by taking very aggressive actions to protect and restore habitat. Alternative 1 suggests that it is not possible to provide artificial mitigation for the losses caused by development.

Instead, Alternative 1 focuses on restoring as many areas as possible through natural means. This alternative virtually eliminates human services such as power generation and transportation on the Lower Snake River, and would significantly reduce them on the Columbia River. This alternative puts creation of a more natural ecosystem ahead of short-term economic needs.

Under Alternative 1, effort and money now spent to maintain relatively constant conditions that benefit economic needs would be redirected toward changing the ecosystem back toward the condition it was in before large-scale human development. Management of fishing would change as well: Alternative 1 would put the short-term needs of native fish and wildlife ahead of fishing needs.

Biological Objectives

This alternative seeks to help native fish, wildlife, and plant communities by restoring the Columbia River Basin's natural characteristics and functions and by discouraging proliferation of non-native species. Alternative 1 would apply the most aggressive approach to habitat improvement on both public and private lands.

Hydropower

Alternative 1 seeks to eliminate or significantly reduce fish and wildlife impacts caused by construction and operation of the hydroelectric system through dam breaching and other significant changes. This alternative supports those measures that restore or mimic natural ecosystem functions.

Habitat

This option focuses intensively on habitat improvements in both the mainstem sections of the Columbia and Snake rivers and their tributaries. The habitat measures would require significant land use changes on both public and private lands.

Hatcheries

Alternative 1 distinguishes itself from other alternatives because it does not support the use of fish hatcheries except for the temporary preservation of extremely endangered species. It also discourages the proliferation of non-native species and conditions favoring non-native species below and above dams that have permanently blocked salmon migration. Alternative I suggests that artificial approaches such as hatcheries are unlikely to produce long-term improvements.

Harvest

This alternative would reduce virtually all fishing except that related to tribal ceremonial, subsistence, and commercial purposes. This alternative would also require that fish be caught in their rivers of origin to emphasize benefits to local economies and to minimize impacts on weak wild stocks that sometimes mix with healthier stocks in mainstem portions of the Columbia River.

Human Effects Objectives

Of all the alternatives, Alternative 1 puts the highest priority on the aesthetic, environmental, and amenity values of the river and its natural resources. Alternative 1 assumes that restoring the most natural conditions on the river is the best way to provide significant economic, social, and cultural value to the Northwest over the long run.

Strategies

- Breach the John Day, McNary, and four Lower Snake dams.
- Manage the river and river uses for seasonal flows and water quality consistent with the life cycle needs of salmon, steelhead, and resident fish species (those that do not migrate to the ocean).
- Reduce the amount of water stored for hydropower production to provide for more natural flows, including periodic flooding and droughts to restore native plants.
- Protect, connect, and restore habitat on the tributaries throughout the Basin.
- Restore salmon and steelhead passage into upper portions of the Basin at Chief Joseph, Grand Coulee, and Hells Canyon dams.

- Increase connections among habitats in the Basin, including ocean environments.
- Phase out use of artificial means of salmon recovery, such as barging and hatcheries, as habitat is restored.

Summary of Alternative 2: A reconnected ecosystem to support salmon fishing

Alternative 2 suggests that restoring habitat in the mainstem Columbia and Snake rivers is the most critical factor for fish and wildlife recovery. Unlike Alternative 1, however, this alternative suggests it is possible to mitigate damage caused by the hydrosystem. This alternative emphasizes increasing and sustaining salmon fishing while moving the system toward the condition it was in before large-scale human development. Alternative 2 treats areas above and below the dams that block salmon migration as separate systems.

Vision

Alternative 2 seeks to restore and manage the ecosystem primarily for native fish, wildlife, and plants. Alternative 2 explicitly recognizes tribal harvest obligations and is willing to accept some increased risk to native species to increase fishing opportunities. Alternative 2 takes a middle-ground approach to habitat requirements on private and public lands.

Biological Objectives

This alternative seeks to take immediate action to stop further loss of biological diversity of fish, wildlife, and plants, especially those listed under the Endangered Species Act. Immediate objectives include enhancing conditions for healthy fish and wildlife populations; emphasizing restoration and enhancement of conditions compatible with native species; discouraging proliferation of non-native species except in special circumstances; and, managing human activities to meet regional and Federal air and water quality standards.

Hydropower

Alternative 2 seeks to eliminate or significantly reduce fish and wildlife impacts caused by construction and operation of the hydropower system. Alternative 2 calls for the breaching of the four lower Snake River dams.

Habitat

Alternative 2 applies moderately intensive habitat measures on both public and private lands, and instead focuses more aggressive actions on dams. It also calls for the acquisition and development of wildlife habitats as mitigation for habitat damage caused by hydropower development.

Hatcheries

Alternative 2 would use hatcheries to help restore weak fish runs and to ensure increased fishing opportunities. For areas below dams that block salmon migration, Alternative 2 would require that hatcheries produce fish that closely match those lost,

but would accept slightly more risk to native species to increase fishing opportunities. For areas above the dams that block salmon migration, this alternative would allow hatcheries to produce native-type fish that could survive in the changed ecosystem.

Harvest

Alternative 2 emphasizes the fact that fishing provides important cultural, spiritual, and commercial benefits to the Region. This alternative seeks to provide conditions to meet ceremonial, subsistence, and commercial fisheries consistent with court interpretations of Indian treaties. The alternative would shift fishing toward spawning areas to emphasize benefits to local economies and to reduce the risk to weak stocks that mix with healthier stocks caught in the mainstem section of the river. Finally, Alternative 2 emphasizes sport fishing over non-Native American Indian commercial fishing.

Human Effects Objectives

In establishing regional priorities for economic development and environmental restoration, Alternative 2 puts a high priority on the ecological values of the river and its natural resources, in particular certain fisheries. It puts a greater emphasis than Alternative 1 on ensuring more fish for tribal and sport fishing.

Alternative 2 takes a moderate approach to public and private lands when it comes to protecting or restoring habitat. As the river is modified to accomplish its vision, Alternative 2 would mitigate for significant economic costs by continuing to provide existing levels of flood control, a hydropower backbone for the power system (albeit reduced from current levels); and, significant contributions to regional transportation and agricultural needs.

Strategies

- Breach the four Lower Snake dams.
- Manage the river to return seasonal flow patterns for salmon and steelhead while also protecting upriver fish that do not migrate to the ocean.
- Increase habitat connections throughout the Basin, including estuary and marine areas.
- Make careful use of hatcheries as part of a coordinated plan that restores habitat for the fish that are released. Alternative 2 would develop new hatchery production in the John Day pool to mitigate for lost mainstem salmon habitat.
- Eliminate fish barging.
- Above the dams that block salmon and steelhead migration, tailor programs to provide resident fish and wildlife required by local conditions and management needs.

Summary of Alternative 3: A Snake River that is ecologically connected to the Columbia River

This alternative breaches the Lower Snake River dams and relies on increased use of fish hatcheries. The focus of this alternative is to increase the number of Snake River fall chinook salmon, using dam breaching and hatcheries, so that more of the healthy Hanford Reach salmon runs can be caught without endangering the Snake River fish that migrate with them.

Vision

This alternative envisions an ecosystem that increases currently productive fish and wildlife populations and recovers depleted populations to the point of self-sustainability, with a very low probability of extinction in the foreseeable future.

The ecosystem would be restored and managed primarily for native fish, wildlife, and plants. However, Alternative 3 would put a greater emphasis on the use of fish hatcheries to address tribal harvest obligations and to increase recreational and commercial harvest.

Biological Objectives

Alternative 3 seeks to increase the overall productivity and resilience of the Columbia River ecosystem by taking immediate action to stop further loss of biological diversity of fish, wildlife, and plants, especially those listed under the Federal Endangered Species Act. Alternative 3 also would try to enhance conditions for currently productive fish and wildlife populations, emphasizing native species, while discouraging proliferation of non-native species except in special circumstances.

Hydropower

Alternative 3 seeks to reduce fish and wildlife impacts associated with the dams, but takes an approach that is less aggressive than Alternatives 1 and 2. Fish migration improvements at the dams are contemplated.

Habitat

Alternative 3 would place the highest priority for habitat improvements on public lands. Alternative 3 would reduce the habitat burden on private lands compared with Alternatives 1 and 2. Alternative 3 also would seek to acquire and develop wildlife habitat to mitigate for habitat lost to hydropower development.

Hatcheries

Alternative 3 would allow use of hatcheries in areas below dams that block salmon migration, but would require that the fish released closely match those lost. For areas above dams that block salmon migration, Alternative 3 would try to restore and enhance conditions to increase and maintain native resident fish species wherever possible. This option would allow mitigation with non-native species only in situations where those species would have limited interaction with native species.

Harvest

Alternative 3 seeks to provide productive regional and local fisheries, in particular, ceremonial, subsistence, and commercial fishing consistent with court interpretations of Native American Indian treaties. Alternative 3 would shift fishing toward spawning areas to emphasize benefits to local economies and to reduce the risk to weak stocks that mix with healthier stocks harvested in the mainstem portion of the river. Finally, Alternative 3 would emphasize sport fishing over non-Native American Indian commercial fishing.

Human Effects Objectives

Alternative 3 puts a high priority on the ecological and amenity values of the river and its natural resources. Alternative 3 would attempt to mitigate for significant transitional economic impacts by providing existing levels of flood control; the hydropower backbone for an adequate, economical, efficient, and reliable power supply; and regional transportation and agricultural needs. This alternative's biological focus on the Snake River would concentrate its human effects in that region as well.

Strategies

- Restore mainstem habitat in the Snake River by breaching the four Lower Snake dams.
- Manage the river to return some seasonal flow pattern for salmon and steelhead, while also protecting upriver populations that do not migrate to the ocean.
- Protect, connect, and restore key habitats.
- Make careful use of some artificial methods (such as hatcheries).
- Eliminate fish barging.

Summary of Alternative 4: Experiment to reduce scientific uncertainty

In Alternative 4, current programs would continue but would be managed more like carefully designed experiments to test uncertainties critical to the decision to move forward with the actions contemplated in Alternatives 2, 3 or 5. Findings would be evaluated before major changes were made to dams.

Vision

This alternative continues existing programs while reducing scientific uncertainty. Alternative 4 seeks the middle ground between short-term economic return and longer-term environmental quality.

Biological Objectives

Because of its emphasis on experimentation, Alternative 4 is described in terms of uncertainties that are suggested by differences in Alternatives 2, 3 and 5. In addition to the experimental design, Alternative 4 includes tributary habitat measures that are moderately intensive on both public and private land.

Hydropower

Alternative 4 would test drawdown, leaving more water in the river, passing fish over dams, and other techniques before making significant changes to the hydrosystem.

Habitat

Alternative 4 is less aggressive than previous alternatives on both public and private land. Alternative 4 also seeks to acquire and develop terrestrial habitats to mitigate for wildlife lost to hydropower development.

Hatcheries

For areas below dams that block salmon and steelhead migration, Alternative 4 would use hatcheries to help specific species. Hatcheries would be required to produce fish species that closely match those lost. For areas above dams that block salmon passage, Alternative 4 would restore and enhance conditions to increase and maintain native resident fish species wherever possible.

Harvest

Alternative 4 seeks to create an ecosystem that can provide productive regional and local fisheries, in particular, conditions to meet ceremonial, subsistence, and commercial fisheries consistent with court interpretations of Native American Indian treaties. Alternative 4 would shift fisheries toward spawning areas to emphasize benefits to local economies and to reduce the risk to weak stocks that mix with healthier stocks that are harvested in mainstem sections of the river. Alternative 4 emphasizes sport fishing over non-tribal commercial fishing.

Human Effects Objectives

Alternative 4 would attempt to mitigate for significant economic impacts by providing existing levels of flood control; the hydropower backbone for an adequate, economical, efficient and reliable power supply; and regional transportation and agricultural needs. Finally, Alternative 4 seeks to ensure that significant costs would be justified by effective fish and wildlife recovery before they were incurred. This justification would be made through research and experimentation.

Strategies

- Use drawdown to test restoration effects on mainstem habitat.
- Use hatcheries to make up for lost habitat.
- Reduce in-ocean harvest to increase numbers of returning adult salmon.
- Test the effectiveness of restoring habitat in tributary watersheds.
- Test the delayed effects of dams on salmon survival.
- Continue existing flow, spill, and fish barging programs, except where the design of experiments requires changes.
- Above the dams that block salmon migration, tailor programs to provide resident fish and wildlife required by local conditions and management needs.

To evaluate uncertainties, some potential experiments are as follows:

- Limited drawdown of the reservoir behind McNary dam.
- More water from the Snake River Basin, and possibly for Canada, would be left in the river for fish.
- Elimination of certain fisheries, such as that in Southeast Alaska
- Implementation of innovative habitat programs

Summary of Alternative 5: Rebuild fish and wildlife by doing everything but breaching dams

Alternative 5 suggests that the changes caused by dams can be mitigated through the use of aggressive habitat restoration, fish hatcheries, and other measures short of breaching dams. This alternative aims to build healthy, harvestable salmon populations and to stabilize weak stocks, while preserving current human benefits of the multipurpose dams. Alternative 5 would rely on improved technology and tributary habitat improvements to achieve its vision without dam breaching.

Vision

This alternative sees a Columbia River that provides a substantial contribution to the regional economy while attempting to ensure that natural amenities are retained and that legal obligations to the tribes and the environment are met. This alternative puts a slightly greater emphasis on short-term economic return than the previous alternatives. Alternative 5 envisions the most aggressive habitat improvements on both public and private land. It also envisions significant effort to improve fish survival at dams through the use of improved water management and new technology.

Biological Objectives

Increase the overall productivity and resilience of the Columbia River ecosystem by stopping the loss of biological diversity of fish, wildlife, and plants, especially those listed under the Endangered Species Act. Alternative 5 also would try to enhance conditions for currently productive fish and wildlife populations, emphasize restoration and enhancement of conditions compatible with native species, and discourage proliferation of non-native species except in special circumstances.

Hydropower

Alternative 5 seeks to reduce fish and wildlife impacts associated with the hydrosystem using improved technology, but would not breach any dams. It would use flow augmentation, surface fish bypass, changed operations, extended length fish screens, and other measures short of dam breaching to improve fish migration.

Habitat

Alternative 5 would place high priority and significant intensity on habitat improvement on both public and private land. It would match the most aggressive habitat actions (with the exception of dam breaching to create mainstem habitat)

called for by the previous alternatives. Finally, Alternative 5 seeks to acquire and develop wildlife habitats to mitigate for losses caused by hydropower development.

Hatcheries

Alternative 5 calls for the extensive use of hatcheries to make up for lost habitat.

Harvest

Alternative 5 seeks to provide productive regional and local fisheries, in particular, conditions to meet ceremonial, subsistence, and commercial fisheries consistent with court interpretations of Native American Indian treaties. Alternative 5 would shift fisheries toward spawning areas to emphasize benefits to local economies and to promote known stock fisheries and would emphasize sport harvest over non-Native American Indian commercial harvest.

Human Effects Objectives

Because it does not call for breaching any dams, Alternative 5 would provide existing levels of flood control, hydropower, and other economic benefits. Alternative 5 also seeks to improve opportunities for fishing through the use of hatcheries. Finally, Alternative 5 seeks to select actions to restore and enhance the environment with the greatest likelihood of achieving the ecological objectives at the least cost.

Strategies

- Continue current flow programs, with some protection for upstream reservoirs. Secure use of water from Canadian storage reservoirs to meet flow needs.
- Make capital improvements at the mainstem dams designed to approximate natural conditions (e.g., surface bypass).
- Manage flows in the Hanford Reach to match natural seasonal and daily patterns.
- Set aside the Hanford Reach as an ecological preserve.
- Make use of fish transportation as appropriate.
- Increase habitat connections throughout the Basin.
- Use significantly more hatcheries to replace lost spawning areas.
- Above the dams that block salmon and steelhead migration, tailor programs to provide resident fish and wildlife required by local conditions and management needs.

Summary of Alternative 6: Rebuild species, enhance current river uses

Alternative 6 would allow for adjustments in river operations for fish to increase investment in habitat and other measures. Like Alternative 5, this alternative aims to build healthy, harvestable salmon populations and stabilize weak stocks at reduced costs. A key difference between this alternative and others is that it contemplates the use of non-native species as mitigation for changes caused by development.

Vision

This alternative sees a Columbia River where strong salmon and steelhead runs increase in number and inhabit more of the river system. It would allow for recurring levels of harvest, sustained resident fish species and rebuilt weakened or marginal stocks of subspecies where there is a sufficient likelihood of recovery at socially acceptable costs. The Columbia River Basin would continue to support full spectrums of river-related economic activities and accommodate anticipated regional growth. All existing mainstem hydroelectric projects would remain in place. The river system's stewards would both maintain and improve multipurpose Federal projects, and also promote and ensure the completion of a variety of programs throughout the Basin to improve the ecosystem generally or individual watersheds specifically.

Biological Objectives

Alternative 6 seeks to increase the overall productivity and resilience of selected fish and wildlife species, especially those listed under the Endangered Species Act and others that can contribute to regional fisheries. Alternative 6 would take immediate action to stop further loss of biological diversity of fish, wildlife, and plants, especially those listed under the Endangered Species Act. Alternative 6 would enhance conditions for currently productive (as opposed to solely native) fish and wildlife populations.

Hydropower

Alternative 6 seeks to reduce the current hydropower cost impacts caused by fish and wildlife recovery measures by decreasing the amount of water dedicated to fish in the spring and increasing the amount of water available for fish in the summer. These changes would produce hydropower cost savings that would be used to make investments in other measures to restore fish and wildlife. Alternative 6 would attempt to reduce fish and wildlife impacts associated with the hydrosystem using improved technology such as surface fish bypass, extended-length fish screens, maximized fish barging, and other measures that do not reduce the hydropower output of the system.

Habitat

Alternative 6 would use moderate habitat approaches on private land and moderate-to-intense approaches on public land. This alternative would seek to increase hydropower revenues, and would use the increases to invest in habitat improvements.

Hatcheries

Alternative 6 seeks extensive use of fish hatcheries to meet fishing needs. This alternative seeks to create an ecosystem that can provide productive regional and local fisheries. Alternative 6 would permit use of artificially supplemented stocks to meet tribal harvest objectives and would use artificial production techniques to meet non-Native American Indian harvest objectives.

Harvest

Alternative 6 seeks to provide conditions to meet ceremonial, subsistence, and commercial fisheries consistent with court interpretations of Native American Indian

treaties. It would shift fisheries effort to emphasize benefits to local economies and to reduce risks to weak stocks that mix with stocks harvested in the river's mainstem sections. Finally, Alternative 6 emphasizes sport harvest over non-Native American Indian commercial harvest.

Human Effects Objectives

Alternative 6 seeks to provide traditional economic benefits, while reducing impacts on the environment and fish and wildlife. It would mitigate for the loss of native species without jeopardizing existing economic activities. It would provide traditional flood control and commercial supplies of salmon through the most efficient economic means. Alternative 6 prioritizes tribal and then recreational fisheries over traditional commercial fisheries. It would seek to protect the regional power system's ability to financially support fish and wildlife recovery efforts by maintaining or improving electricity generation as a high priority river use.

Strategies

Strategies would be similar to those of Alternative 5, with the following differences:

- Change the flow augmentation program to produce additional funds for fish and wildlife measures.
- Use supplemented stocks in the river to meet tribal harvest objectives.
- Meet non-Indian harvest objectives through artificial production.
- Improve and maximize fish barging.

Summary of Alternative 7: Rebuild species through managed approaches

This alternative envisions a river system managed to provide maximum economic benefits, including increased power production, increased irrigation, and increased fishing under scientific management.

Vision

Alternative 7 would increase the multiple benefits of dams and the river through application of quantifiable data. It would increase hydropower production; improve harvest, habitat, and hatchery management; maintain existing irrigation and allow more consumptive water use; maintain navigation to river ports; and use experiments to gather useful data.

Biological Objectives

This alternative seeks to quantify the benefits and costs of proposed strategies and implement them solely on the basis of cost-effectiveness. This alternative calls for improved measurements of survival to identify high mortality areas and the use of computer models to organize data and depict relationships to enable survival predictions. This alternative would focus on "hot spots" of mortality, abandon spring flow augmentation and real-time flow management, and experiment with late summer/fall

flow augmentation in low water years. Finally, Alternative 7 would introduce predators to control terns and allow limited marine mammal hunting.

Hydropower

Alternative 7 would enhance the ability of the hydrosystem to produce economic benefits. It would limit hydropower funding of fish and wildlife recovery to offset the effects of hydropower construction and operation. Finally, this alternative would limit fish and wildlife impacts on the hydrosystem by maximizing fish barging, expanding surface collection, and replacing old turbines with fish-friendly turbines.

Habitat

This alternative would sort habitat into "nature preserve" and production categories, decentralize habitat decisions, and focus regional habitat decisions on inter-jurisdictional issues. This alternative would leave habitat issues to local decision-makers, eliminate wildlife mitigation, and use the BPA Environmental Foundation to fund habitat improvements.

Hatcheries

Alternative 7 seeks to unify hatchery reporting and measure hatchery success by returns to watersheds. It calls for the marking of all hatchery fish. This alternative would provide funds for genetic research to increase fish size, improve disease resistance, and aid adaptation to warm temperatures. This alternative would share fishing tag revenues with hatcheries that return fish to watersheds, move hatchery management to tribes, and declare some tributaries off limits to hatchery production and others as production and supplementation watersheds.

Harvest

This alternative seeks to manage harvest to protect weak stocks by stopping all harvest of wild fish; adopting tributary-specific escapement goals; eliminating ocean harvest; redirecting lower river mixed stock harvest to terminal areas; redirecting tribal mixed-stock harvest to ladder and tributary fishing; buying selective gear for harvesters; and by improving harvest enforcement.

Human Effects Objectives

Alternative 7 seeks the maximum use of natural economic incentives to implement only cost-effective strategies. This alternative puts human economic needs above changes designed to enhance the natural environment.

Strategies

In addition to the actions in Alternative 6, Alternative 7 would:

- Abandon all spring flow augmentation and real-time management of flow for fish. Focus flow programs solely on temperature control.
- Focus mainstem research efforts on measurement of survival through alternate passage methods at dams to reduce "hot spots" for mortality.
- Engineer spawning channels to expand natural spawning areas.

- Abandon efforts to protect existing wild stocks in tributaries where there is already significant hatchery influence.
- Declare specific tributaries "off-limits" to hatcheries to provide buffer zones against genetic problems with hatchery production.
- Move hatcheries to tribal management in settlement of treaty obligations.
- Ban harvest of wild stocks in the mainstem.
- Work toward elimination of ocean salmon harvest.
- Redirect tribal mixed-stock commercial harvest to selective harvest at fish ladders and in tributaries.
- Take direct action to control the bird population on Rice Island, marine mammals, and Northern pikeminnow that prey on salmon.
- End federal, regional, and state regulation of habitat restoration.

C. Summary of Framework Concept Papers

The following is a summary of the 28 concept papers prepared by the Framework Workgroup. These concept papers were submitted to the Framework for consideration as possibilities as multi-species plans for fish and wildlife recovery in the Columbia River Basin. The following information and letters form the foundation of values, perspectives, and suggested actions for fish and wildlife mitigation and recovery policy in the Region to build on.

Northwest Power Planning Council
FRAMEWORK CONCEPT PAPERS
November 1998

No. Concept Paper

1. Save Our Wild Salmon Coalition

GOAL

Abundant, harvestable, self-sustaining, wild, native fishes.

OBJECTIVES

- Protect and restore habitat;
- Improve artificial production;
- Improve harvest management by protecting wild stocks and targeting strong stocks; and
- Reduce dam mortality by moving toward normative river conditions and providing safe passage at all projects.

STRATEGIES

- Habitat: Manage lands to protect f/w habitat; reduce commodity subsidies, protect and restore wetlands, estuaries & riparian areas; provide stream flows, provide water from upper Snake

- pending dam removal; conserve water; screen diversions; sustainable farming; end water waste; comply with Clean Water Act; control non-native predators.
- Hatcheries: plant fish consistent with watershed carrying capacity avoid harm to wild fish; don't use in lieu of habitat; reduce spending in favor of habitat spending.
 - Harvest: allow escapement and renegotiate international treaties.
 - Dams: no new dams, end transport, take out lower Snake dams, lower JDA to spillway; move to normative conditions elsewhere; remove unmitigable dams (Condit, Enloe); meet agency and tribal flow targets, spill, pay the true cost of hydropower.

MANAGEMENT ACTIONS

None identified

2. Idaho Rivers United, Idaho Steelhead and Salmon United, and Trout Unlimited

GOAL

Attain naturally sustainable f/w to support harvest by restoring biological integrity and diversity; delist ESA stocks; maintain affordable energy and strong BPA for regional prosperity.

OBJECTIVES

- Snake stocks at harvestable levels via 2-6% smolt-adult returns, and improved egg-smolt survival;
- Rebuild Snake ChF in Blue Mtn. Tributaries via 2-6% smolt-adult returns;
- Recover Snake sockeye via 1.5-2% smolt-adult returns to Redfish;
- Rebuild mid-Col ChSp/Su, sockeye and StSu by improved smolt survival with flow aug. and normalized hydrograph;
- Enhance mid-Col. ChF by preserving Hanford and normalized hydrograph below Priest;
- Secure ICBMP category 1 subbasins and reconnect category 2 subbasins, implement IRCs and VARQ flood control strategies at Hungry Horse and Libby; and
- Ensure cost-effective investments.

STRATEGIES

- Breach lower Snake dams by 2005 (objectives 1-3);
- Restore normative flows from Priest to estuary via flow augmentation (objectives 4-6);
- Use BPA money for projects with the best likelihood of success, and maintain or reduce direct outlays as stocks recover;
- Commit to affordable steps to retain access to low-cost energy.

MANAGEMENT ACTIONS

Snake:

- end transportation;
- breach the lower dams;
- eliminate flow augmentation;
- normalize Hells Canyon flows;
- implement IRCs at Dworshak;
- phase out hatcheries and supplementation as stocks recover.

Upper Columbia:

- use Canadian storage to augment flows;
- 24-hour spill in the Spring from Priest down;
- IRCs at all storage projects shift peaking to upper Columbia projects;
- shape flood control releases to help resident and anadromous fish.

Lower Columbia:

- operate JDA at MIP pending JDA draw-down studies through 2006; other projects at MOP;
- install gas abatement, ladder improvements, etc.;
- evaluate extended screens, surface collectors, etc. at TDA;

- stop spending on Bonneville outfall.
- Use tiered flow for Kootenai white sturgeon, and IRCs and VAPQ.
- coordinate planning and implementation system-wide

3. Columbia River Inter-Tribe Fish Commission

GOAL

Restore anadromous fish to support tribes' cultural and commercial practices emphasizing natural production and healthy rivers; protect tribes, sovereignty and treaty rights

OBJECTIVES

- Within 7 years, halt declines in salmon, sturgeon, and lamprey above Bonneville;
- Within 25 years, increase salmon returns to 4 million naturally-produced fish above Bonneville and sturgeon and lamprey to harvestable levels;
- Restore salmon to historic abundance in perpetuity.

STRATEGIES

- Improve streams by controlling land use;
- Improve flows by limiting diversions and using water efficiently;
- Restore watersheds for threatened stocks;
- Use supplementation for most threatened fish and re-introductions; use flow, spill, drawdowns, efficient turbines and operations and predator control;
- Restore critical estuary habitat;
- Ret Alaska and Canadian harvest by abundance;
- Use cold stored water and more and better ladders for adults
- Reduce water contaminants
- Monitor tributary production and escapement to improve harvest management
- Research lamprey and develop supplementation programs
- Artificial production for white sturgeon above Bonneville.

MANAGEMENT ACTIONS

Habitat:

- land and water users meet habitat conditions required to achieve survival rates
- use coarse-screening process to determine allowable watershed impacts

Production:

- use supplementation to avoid extirpations

Passage:

- end transportation
- return mainstem habitat to natural conditions for 71% survival by drawdowns, flows, spill, breaching lower Snake dams and lowering JDA to spillway.

4. Shoshone-Bannock Tribes

GOAL

Maintain & restore ecosystem for all naturally producing indigenous species and provide for cultural/spiritual needs.

OBJECTIVES

- Restore the natural hydrograph and lessen ecosystem impacts generally;
- Continue existing habitat protections
- Enforce existing treaties and f/w laws;
- Review existing laws that hurt habitat
- Restore damaged habitat;

- Increase production of indigenous f/w
- Secure harvest opportunities.

STRATEGIES

None identified

MANAGEMENT ACTIONS

None identified

5. Trout Unlimited

GOAL

Protect and restore ecological values of the Basin, create a network of complex, interconnected, high quality habitats that support sustainable and harvestable wild fish while mitigating impacts on the Region.

OBJECTIVES

Habitat:

- protect existing habitat;
- restore degraded habitat; and
- enforce existing land use regulations.

Hydropower:

- no new development;
- make existing facilities fish-friendly;
- restore normative conditions by breaching lower Snake dams and lowering JDA to spillway;
- use spill, flow augmentation, better bypass and gas abatement.

Hatcheries:

- use to restore wild salmonids;
- reduce use of hatcheries to replace degraded habitat.

Harvest:

- reduce ocean and river harvest and manage for conservation;
- develop selective fisheries;
- resolve US-Canada allocation and equity issues.

Mitigation:

- maintain cost-based power, low-cost transportation for agricultural products, and irrigation pumping from mainstem reservoirs.

STRATEGIES

- **Habitat:** protect habitat for viable populations, breach lower Snake dams and lower JDA to spillway, Federal agencies manage land to restore degraded habitat including finalization of standards based on ICBMP science; enforce ESA "take" provisions on private land; implement Clean Water Act TMDLs and state ambient water quality standards and waterway uses; enforce state water laws on waste quantity.
- **Hydropower:** all dams provide suitable flows passage and consistency with watershed efforts; restore normative conditions, reduce reliance on transportation and upstream storage; pending draw-downs, use transportation only in low-flow years; identify and address problems at non-hydropower dams.
- **Hatcheries:** gather more information on natural production; use only if no impact to wild salmonids, mimic natural conditions in broodstock collection, rearing, feeding, acclimation and release; treat artificial production experimentally, complete review of Mitchell Act and LSCRIP, PUD and other facilities.

- **Harvest:** allow harvest only where impacts to wild fish are quantified and minimized; adopt abundance-based regime in US-Canada to protect weak stocks; reduce harvest of chinook to 50% total mortality throughout their range; continue to develop selective fisheries.
- **Mitigation:** show those who would privatize PMAs that BPA is carrying out vital energy conservation and f/w programs; support development of alternative forms of transportation; and lower irrigation pumps while paying higher electric costs of pumping.

MANAGEMENT ACTIONS

None identified

6. C. Petrosky, H. Schaller, P. Wilson, E. Weber, and O. Langness

GOAL

Sustainable, naturally-producing f/w to support tribal and non-tribal harvest, cultural and economic practices by restoring biological integrity and genetic diversity of ecosystem and through other ways compatible with naturally producing f/w.

OBJECTIVES

- Reduce cumulative mortality to encourage wider distribution and more life history types within metapopulation concept;
- For upper-basin anadromous fish, significantly reduce passage mortality by returning to more normative conditions;
- Recover, de-list and restore ESA fish to harvestable levels;
- Rebuild depleted non-ESA fish and protect healthy natural populations to support harvest while maintaining wide distribution
- Rebuild depleted lamprey to support cultural use and restore ecosystem function;
- Restore anadromous fish ecosystem functions to benefit native resident fish and wildlife by increasing prey base and nutrient recycling and restoring more normative conditions.

STRATEGIES

- Implement actions with best chance of success,
- Generate information to reduce uncertainties,
- Use an experimental management approach that prioritizes conservation and recovery of weak populations while compatible with other f/w, and
- Emphasize actions that benefit wide range of species:
- Listed fish:
 - Snake: promptly implement hydropower actions under 1999 ESA decision and evaluate effects between regions
 - Upper Columbia: implement hydropower actions under ESA and study feasibility of JDA draw down, evaluate effects of hydropower actions between regions
 - Lower Columbia: take other actions and evaluate stocks for between-region comparison.
- Unlisted anadromous fish: evaluate stocks for between-region comparison.
- Other anadromous fish: evaluate through temporal and spatial comparison of population and survival rates.
- Native resident fish and wildlife: evaluate through coordinated, directed studies.

MANAGEMENT ACTIONS

- Coordinate major actions through reverse staircase design, taking actions with measurable responses to illuminate uncertainties, primarily through adult-to-adult and/or smolt-to-adult returns, compared to expected responses for key PATH hypothesis
- Listed fish:
 - Snake: breach four lower dams, evaluate flow augmentation components; reduce and evaluate experimental hatchery releases, later increasing; phase out hydro-mitigation hatcheries as runs increase. Initially, low harvest rates, increasing with recovery. Implement improved land

management to restore productivity and connections. Coordinate through experimental management program.

Upper Columbia: evaluate feasibility of breaching JDA and implement by 2012; evaluate flow augmentation elements, specify major non-hydropower actions;

Lower Columbia: access stocks to develop actions within experimental framework.

- Unlisted anadromous fish: manage harvest to achieve management goals; improve land management, evaluate effects of hatchery release, all coordinated through experimental program.
- Other anadromous fish: benefited by actions for anadromous species.
- Native resident fish and wildlife: restore free-flowing river reaches and riparian habitats to reduce conflicts with anadromous fish flows.

7.a Oregon office of NWPPC (no drawdown, dam retrofit, incremental approach)

GOAL

Sustainable, naturally producing f/w to support social, cultural and economic practices such as tribal and non-tribal harvest, by restoring biological integrity and genetic diversity of ecosystem and through other ways compatible with naturally producing f/w. When devising strategies, consider economic and social factors to produce high quality of life and achieve multi-species goals.

OBJECTIVES

- **Primary:** Provide for healthier ecosystem, thereby reducing cumulative impacts on f/w to attain sustainable, diverse, harvestable populations.

- **Specific:**

Anadromous salmonids: promote wide array of life histories by restoring depressed populations and maintaining or enhancing healthy stocks and reintroducing and re-establishing stocks across traditional range where feasible.

Non-anadromous salmonids: Rebuild sturgeon and lamprey across historic range, if possible.

Native resident fish: promote wide array of life histories by restoring weak populations to sustainable, harvestable levels and enhancing healthy native stocks, and reintroducing and re-establishing stocks in traditional range where feasible and economically justified.

Non-native resident fish: maintain and enhance in areas where native populations are extirpated or their restoration is infeasible.

Wildlife: manage for native species, protect existing range, expand migratory corridors and link habitats to promote diversity; focus on habitat quality, not quantity. For non-native species, follow non-native resident fish protocol.

Socio-economic:

Cultural: allow salmonids to reach tribal treaty harvest objectives and lamprey and sturgeon to serve cultural needs.

Economic: Maintain shipping from all river ports. Maintain hydropower production to greatest extent possible and restore lost generation through aggressive energy conservation and peak load management. Maintain grazing through use of best management practices with riparian set-asides and fencing in fish-bearing streams and wildlife refuges and temporary mitigation for transition to different land uses.

Forestry: promote sustainable cut with 100-ft riparian set asides for fish-bearing streams and temporary mitigation for transition to best management practices. Irrigation: seek water conservation and efficiencies.

Social/legal: strictly enforce Clean Water Act throughout Basin.

STRATEGIES

- **Management intent:** re-establish water velocities equivalent to natural hydrograph, provide spawning and rearing habitat in mainstem and tributaries for anadromous and resident fish. This

alternative proposes the following strategies by implement incrementally, evaluating results and entailing less cost in the short term.

- **Broad strategy:** Implement in an experimental program that prioritizes recovery of imperiled stocks consistent with maintaining healthy stocks. All strategies must reduce cumulative mortality to a wider range of species and involve hydro and non-hydro actions.
- **Specific strategies:**
 - on an incremental basis, promote aggressive technological fixes at dams (spill, gas abatement);
 - develop surface bypass and other technologies;
 - extended length screens;
 - adult passage improvements;
 - transportation in low flow years;
 - 1.6 maf from upper Snake and 3 maf from Canada through purchase of water rights, current BiOp flow from Brownlee and Dworshak;
 - sliding scale, abundance based harvest, reduce ocean bycatch;
 - current hatchery production;
 - aggressive habitat recovery in mainstem and tributaries with tributary dam breaching where feasible;
 - re-establish floodplains, wetlands, estuaries;
 - water conservation and efficiencies;
 - technological fixes at dams to satisfy Clean Water Act;
 - reservoir rule curves for resident fish;
 - aggressive energy conservation and peak load management;
 - efficient, temporary economic mitigation for affected interests;
 - best management practices for grazing and forestry with large riparian set asides in salmonid streams;
 - reduced power peaking to protect spawning and emergence;
 - passage above Chief Joseph, Grand Coulee and Hells Canyon;
 - terminal fisheries on hatchery fish;
 - comprehensive monitoring and evaluation.

MANAGEMENT ACTIONS

None identified.

7.b Oregon office of NWPCC (no drawdown, dam retrofit, reverse staircase)

GOAL

Sustainable, naturally producing f/w to support social, cultural and economic practices such as tribal and non-tribal harvest, by restoring biological integrity and genetic diversity of ecosystem and through other ways compatible with naturally producing f/w. When devising strategies, consider economic and social factors to produce high quality of life and achieve multi-species goals.

OBJECTIVES

- **Primary:** Provide for healthier ecosystem, thereby reducing cumulative impacts on f/w to attain sustainable, diverse, harvestable populations.
- **Specific:**
 - Anadromous salmonids: promote wide array of life histories by restoring depressed populations and maintaining or enhancing healthy stocks and reintroducing and re-establishing stocks across traditional range where feasible.
 - Non-anadromous salmonids: Rebuild sturgeon and lamprey across historic range, if possible.
 - Native resident fish: promote wide array of life histories by restoring weak populations to sustainable, harvestable levels and enhancing healthy native stocks, and reintroducing and re-establishing stocks in traditional range where feasible and economically justified.

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Appendix D: Major Comment Issues/Framework Concept Papers

Non-native resident fish: maintain and enhance in areas where native populations are extirpated or their restoration is infeasible.

Wildlife: manage for native species, protect existing range, expand migratory corridors and link habitats to promote diversity; focus on habitat quality, not quantity. For non-native species, follow non-native resident fish protocol.

Socio-economic:

Cultural: allow salmonids to reach tribal treaty harvest objectives and lamprey and sturgeon to serve cultural needs.

Economic: Maintain shipping from all river ports. Maintain hydropower production to greatest extent possible and restore lost generation through aggressive energy conservation and peak load management. Maintain grazing through use of best management practices with riparian set-asides and fencing in fish-bearing streams and wildlife refuges and temporary mitigation for transition to different land uses.

Forestry: promote sustainable cut with 100-ft riparian set asides for fish-bearing streams and temporary mitigation for transition to best management practices.

Irrigation: seek water conservation and efficiencies.

Social/legal: strictly enforce Clean Water Act throughout Basin.

STRATEGIES

- As above, except that all strategies are implement at once, with large up-front costs and less biological risk. Potential to avoid the expense of some strategies based on biological response.

MANAGEMENT ACTIONS

None identified.

7.c Oregon office of NWPPC (no transport/drawdown incremental approach)

GOAL

Sustainable, naturally producing f/w to support social, cultural and economic practices such as tribal and non-tribal harvest, by restoring biological integrity and genetic diversity of ecosystem and through other ways compatible with naturally producing f/w. When devising strategies, consider economic and social factors to produce high quality of life and achieve multi-species goals

OBJECTIVES

- Same fish and wildlife objectives.
- Socio-economic objectives:
Cultural: allow salmonids to reach tribal treaty harvest objectives and lamprey and sturgeon to serve cultural needs.

Economic: Maintain shipping from Lewiston by moving to rail transportation; maintain barge transportation through lower John Day pool by using shallow draft vessels to Try Cities. Replace lost hydropower generation. Same objectives for grazing, forestry and irrigation.

Social/legal objectives: Pass legislative to draw down four lower Snake dams and John Day, strictly enforce Clean Water Act throughout Basin.

STRATEGIES

- Same "management intent" and "broad strategy."
- **Specific strategies**: As above, but incremental drawdown of two dams followed by evaluation and further drawdowns if justified by monitoring results. Drawdown is first strategy implemented. If response is less than anticipated, add restrictions incrementally, monitor response and add further increments if needed. Replace lost hydropower generation through least-cost mix of power purchases, aggressive energy conservation, development of cost-effective renewables, and high efficiency thermal generation. Mitigate incremental production of carbon dioxide through offsets.

MANAGEMENT ACTIONS

None identified.

7.d Oregon office of NWPPC (no transport/drawdown reverse staircase)

GOAL

Sustainable, naturally producing f/w to support social, cultural and economic practices such as tribal and non-tribal harvest, by restoring biological integrity and genetic diversity of ecosystem and through other ways compatible with naturally producing f/w. When devising strategies, consider economic and social factors to produce high quality of life and achieve multi-species goals.

OBJECTIVES

- **Primary:** Provide for healthier ecosystem, thereby reducing cumulative impacts on f/w to attain sustainable, diverse, harvestable populations.

- **Specific:**

Anadromous salmonids: promote wide array of life histories by restoring depressed populations and maintaining or enhancing healthy stocks and reintroducing and re-establishing stocks across traditional range where feasible. Non-anadromous salmonids: Rebuild sturgeon and lamprey across historic range, if possible.

Native resident fish: promote wide array of life histories by restoring weak populations to sustainable, harvestable levels and enhancing healthy native stocks, and reintroducing and re-establishing stocks in traditional range where feasible and economically justified. Non-native resident fish: maintain and enhance in areas where native populations are extirpated or their restoration is infeasible.

Wildlife: manage for native species, protect existing range, expand migratory corridors and link habitats to promote diversity; focus on habitat quality, not quantity. For non-native species, follow non-native resident fish protocol.

Socio-economic:

Cultural: allow salmonids to reach tribal treaty harvest objectives and lamprey and sturgeon to serve cultural needs.

Economic: Maintain shipping from all river ports. Maintain hydropower production to greatest extent possible and restore lost generation through aggressive energy conservation and peak load management. Maintain grazing through use of best management practices with riparian set-asides and fencing in fish-bearing streams and wildlife refuges and temporary mitigation for transition to different land uses.

Forestry: promote sustainable cut with 100-ft riparian set asides for fish-bearing streams and temporary mitigation for transition to best management practices.

Irrigation: seek water conservation and efficiencies.

Social/legal: strictly enforce Clean Water Act throughout Basin.

STRATEGIES

Same, but implementing all strategies at once, and drawing down four lower Snake dams to natural river and John Day to spillway crest. Potential to avoid the expense of some strategies based on biological response.

MANAGEMENT ACTIONS

None identified.

8. Montana Dept. of Fish, Wildlife & Parks

GOAL

Restore normative flow conditions in mainstem and headwaters; follow ecologically and economically sustainable operating strategy; restore naturally producing f/w throughout Basin by restoring and reconnecting habitats.

OBJECTIVES

- Implement dam operations that reduce storage drafts, improve refill probability and create more natural hydrograph downstream;
- Coordinate operations to extend runoff events for anadromous fish while protecting headwater species;
- Key operations to monthly inflow forecasts and tier springflow releases based on water availability at each project;
- Modify flood control operations to allow variable releases to simulate spring freshet;
- Gradually draft reservoirs to avoid flow fluctuations, reduce width or varial zones and enhance productivity

STRATEGIES

- Implement current IRCs and develop them for other projects, following specified protocol.
- Implement tiered flows for Kootenai white sturgeon below Libby.
- Implement VARQ flood control strategy to approximate spring freshet improve velocities in the Snake, JDA and MCN reservoirs by implementing results of PATH analyses, transfer peaking operations to headwater facilities

MANAGEMENT ACTIONS

- Complete IRCs for projects that lack them (via specific steps);
- Implement IRCs using tiered flows and VARQ strategy;
- Reduce reservoir drafts and improve refill to assure sustainable operations for all species;
- Replace static flow targets in lower Columbia with attainable, normative-type flow targets resulting from basin-wide application of IRCs;
- Coordinate mitigation with system operating plan;
- Reclaim habitat;
- Restore temperature regimes through selective withdrawal at storage projects and correlate flow and temperature with riverine fish growth and migrations for native species;
- Reduce watershed impacts through fencing and other passive measures and Rosgen techniques to restore original channel types;
- Establish alternative fishing opportunities; and
- Establish genetic reserves of important native stocks.

9. Idaho Department of Fish and Game

GOAL

None identified.

OBJECTIVES

- Be risk averse and robust across a range of scientific hypotheses and assumptions;
- Provide high likelihood of recovery within 24 years for Snake ChSp/Su with a 2-6% smolt-adult survival for inriver fish (perhaps 3-7% for steelhead);
- Provide a high likelihood of recovery within 24 years for Snake ChF by restoring more normative incubation, rearing and migration water temperatures, velocities, turbidity and micro-habitats; and reconnecting fragmented habitats;
- Preserve or enhance native stock structures and genetic diversity

STRATEGIES

None identified.

MANAGEMENT ACTIONS

- Focus on primary ecological factors limiting recovery, including divergent productivity of upriver and lower riverstocks
- Recreate key ecological functions rather than circumvent them;
- Focus on wild native fish, using artificial production where ecologically prudent
- Focus on listed anadromous fish while optimizing benefits for resident fish and wildlife.

10. Native Fish Society

GOAL

Protect and rebuild abundance and distribution of locally adapted, native wild salmonids, maintain genetic and life history diversity and ecological benefits.

OBJECTIVES

None identified.

STRATEGIES

- Define units of management action at population and watershed level;
- Inventory biological diversity to establish benchmarks for genetic and life history structure;
- Adopt biological objectives that maintain biological diversity;
- Develop science-based management plans that maintain biological diversity;
- Conduct scientific audit of results, research needs, policy and management issues;
- Involve the public in finding solutions.

MANAGEMENT ACTIONS

- Establish reference watersheds and populations as controls for a range of species and ecological conditions;
- Implement existing laws and regulations for fish, wildlife and habitat protection;
- Determine genetic and life history diversity as benchmarks;
- Establish sediment threshold for spawning areas that protect egg development and fry emergence;
- Establish temperature thresholds for adults; juveniles and eggs;
- Maintain a population structure that protects weak stocks, genetic and life history diversity;
- Re-establish sources of large woody debris;
- Re-establish ecological linkages in watershed;
- Use RASP to establish rebuilding plans for native salmonids;
- Replace mixed stock fisheries with known stock fisheries;
- Establish escapement objectives for watershed populations;
- Hold harvest managers accountable for meeting objectives;
- Terminate hatcheries that disrupt native fish genetic and life history diversity and have negative ecological effects;
- License hatcheries and review licenses;
- Conduct an annual status review of native stocks;
- Establish a Basin policy regarding protection of native fish genetic and life history diversity;
- Independent scientific review of funding proposals in which managers identify assumptions;
- Establish a peer-reviewed journal to document recovery program instead of relying on gray literature;
- Establish a biodiversity institute;
- Develop a science-based information service for decision makers;
- Review hatchery program's impacts on native fish;
- Establish a life cycle-based research and management program for salmonids;
- Stop transferring salmonids among facilities and watersheds;

- Test concept of hatchery that conserves wild populations.

11. Del Lathim

GOAL

Make downriver passage as safe as a natural river, increasing hydro generation 25%

OBJECTIVES

- Environmentally friendly passage for anadromous fish;
- Maintain economic benefits of hydro system;
- Protect the ecosystem the dams have created;
- Increase hydro output by 25%;
- Secure tribes' agreement to stop gill netting.

STRATEGIES

- Fish-friendly turbines.

MANAGEMENT ACTIONS

- Fine-tune prototype at Bonneville Unit #4; replace older Kaplan units with friendly turbines; discontinue fish screens; install turbines in skeletal bays and pass water through them instead of spilling.

12. Kokanee Recovery Task Force

GOAL

Stabilize resident fish at 75% of pre-dam levels within 12 years, showing progress in 4 years.

OBJECTIVES

- Meet fish passage efficiency goals;
- Meet water quality standards;
- Increase habitat;
- Increase aquatic population to historic levels;
- Maintain integrity of dams;
- Keep costs commensurate with benefits; and
- Find regional funding from diverse resources.

STRATEGIES

- Determine characteristics of resident fish food sources;
- Determine relationship of target species population dynamics and predators, including level of sustainable harvest;
- Emphasize wild spawning rather than artificial;
- Maximize spawning habitat by manipulating water levels during egg laying, incubation, emergence, and control post-emergence levels to prevent stranding;
- Bring 10 million eggs from other agencies to augment production;
- Use artificial devices to increase fry survival to 80%;
- Reduce gas supersaturation, move fry from Cabinet Gorge hatchery to southern part of lake to avoid gas.

MANAGEMENT ACTIONS

- Pend Oreille at 2055' in winter;
- Cabinet Gorge and Noxon reduce gas to 110% by 2001
- Buy 10 million eggs per year pending recovery;
- Transport fry to southern part of lake when gas exceeds 100%;
- Plant kokanee eggs in incubation protection systems in southern part of lake until gas problem is addressed.

13. Upper Columbia River Co-Management Entities

GOAL

A healthy Columbia River ecosystem that supports viable and genetically diverse fish with harvest and other societal benefits.

OBJECTIVES

- A stable, locally adapted Upper Columbia ecosystem that produces natural resident fish at pre-dam levels; and/or
- Reintroduce and build anadromous fish above blockages to historic levels.

STRATEGIES

- A comprehensive mitigation program of native resident fish restoration and non-native fish substitution as in Council program and MYIP; and/or
- Develop fish passage at Chief Joseph and Grand Coulee, concurrently re-introducing anadromous fish that genetically and behaviorally resemble former populations above those projects.

MANAGEMENT ACTIONS

None identified

14. Jim Litchfield

GOAL

Naturally spawning, sustainable and diverse f/w, balancing preservation of economic infrastructure including multipurpose river use.

OBJECTIVES

- Enhance core while protecting listed populations;
- Take actions with most biological benefit and least cost first;
- Through watershed audit, identify biological priorities for prime watersheds, production watersheds and watersheds unsuitable for fish;
- Establish population goals and harvest limits;
- Enhance production for harvest with no harm to natural production;
- Change dam configuration only where critical survival bottlenecks can't be addressed otherwise and costs are justified by probable biological benefits;
- Value over- more than under-escapement in harvest mgt;
- Manage flood events to facilitate scouring;
- Use watersheds as fundamental mtg. Unit;
- Regional council adopt top-down priorities, watersheds heavily involved in deciding how to implement them in balance with local priorities and;
- Modify laws accordingly, where needed;

STRATEGIES

- Scope is entire Basin;
- Develop unified plan that classifies biological objectives developed by regional council;
- Incorporates a high degree of local control;
- Covers the whole life cycle, including the ocean and estuary; and
- Because dam effects are uncertain, conducts a fish mortality audit for adults and juveniles, to guide changes in dam configuration (correct highest mortalities first, especially adult mortality).

MANAGEMENT ACTIONS

None specifically identified

15. Sun Mountain Reflections

GOAL

Redesign hydro projects to mimic natural aquatic structure, improve water quality, restore habitat, restore harvestable populations and maintain integrity of dams.

OBJECTIVES

- Increase hydro production
- Increase salmon and steelhead
- Improve harvest, habitat and hatchery management
- Maintain existing irrigation and allow more consumptive water use
- Maintain navigation to river ports
- Experiment, gather useful data

STRATEGIES

- Redesign hydro projects to mimic natural bathymetric structure using Wheels, Pools and Falls approach (on the basis of various studies comparing current conditions to historic conditions).
- Develop diverse funding sources including public agencies, tribes, commercial interests and the public.

MANAGEMENT ACTIONS

- Change policies from problem-specific management to resolution of underlying ecological problems that preclude multi-species recovery. View recovery investment as a regional economic benefit rather than a hydropower expense.

16. Rachel Stein

GOAL

Prevent further degradation, then improve environmental condition; ensure resilient social and economic systems

OBJECTIVES

- Establish baseline information;
- Identify human actions that affect ecosystem;
- Create scale to identify ecological tolerance;
- Define activities that can change;
- define surrogate measure for baseline;
- Standardize data and surrogate measurement; and
- Measure change

STRATEGIES

- Use ICBMP to establish baseline
- Use law and other values to establish scale of ecological tolerance
- Work within existing social structures to change human activities
- Define surrogate measures and use them in evaluation.

MANAGEMENT ACTIONS

None identified.

17. Oregon Water Trust

GOAL

Provide instream flows to support naturally functioning small streams

OBJECTIVES

- Restore flows in small tributaries to improve aquatic habitat and improve water quality.

STRATEGIES

- Buy senior water rights and dedicate them to streams.

MANAGEMENT ACTIONS

None identified

18. William K. Watson

GOAL

Salmon restoration

OBJECTIVES

None identified

STRATEGIES

- Improve dam passage;
- Find ways to artificially produce flow at edges of reservoirs; and
- Find ways to artificially clean reservoir gravels.

MANAGEMENT ACTIONS

- At a low dam in the lower river, experiment with new ladders;
- At the shortest reservoir on the river, experiment with ways to artificially produce flow at edges of reservoirs; and
- At the shortest reservoir on the river, find ways to artificially clean reservoir gravels.

19. Phillip R. Mundy

GOAL

Establish comprehensive fisheries management system that protect ecosystem functions, harvest, and other human uses.

OBJECTIVES

- Protect wild salmon and habitat;
- Maintain salmon escapements to protect potential salmon production and maintain ecosystem functions;
- Harvest salmon consistent with uncertainty regarding status of the resource;
- Control human activities that affect salmon;
- Build public support for salmon.

STRATEGIES

- Develop and implement a program of goals and objectives and enact them into law at national, state and local levels;
- Develop and implement tests or criteria to define objectives, measure progress, and adapt program with new information.

MANAGEMENT ACTIONS

- Use framework process and NPPC to develop goals and objectives;
- Enlist a regional forum of federal, state and local law makers to work on implementing legislation;
- Define objectives in terms that can be used in evaluating progress;
- Adapt management measures according to monitoring information.

20. Public Power Council

GOAL

Best possible balance between biological integrity, genetic diversity and sustainable, naturally reproducing fish and wildlife, with due consideration for economic and social constraints.

OBJECTIVES

- Institute effective governance;
- Develop a unified plan;
- Establish fish and wildlife objectives
- Protect the environmental
- Foster economic and social vitality.

STRATEGIES

- **Management:** Top-down decision making by federal, state and tribal entities coordinated with bottom-up input in planning and management, especially on habitat; decisions incorporate performance measure.
- **Fish and wildlife generally:** Clarify purpose of mitigation; consider entire life cycle and ecosystem; take actions with measurable results; and balance resident fish and wildlife values.
- **Naturally spawning fish and wildlife:** set escapement for watershed populations; use metapopulations as level of organization; expand from existing, strong core populations, giving lower priority to weaker populations; emphasize areas with highest potential for increasing numbers of fish and most native species; give more attention to ocean and estuary; ensure natural escapement; protect good habitat and restore degraded habitat; minimize hydro impacts.
- **Harvest:** manage to minimize impacts to natural fish and coordinate management regionally and internationally.
- **Environment:** view actions globally and recognize trade-offs.
- **Economic and social:** emphasize actions that promise most benefit, cost less, disrupt less, use existing institutions, have performance goals and end points, and are most efficient. Compensate adversely affected parties.

MANAGEMENT ACTIONS

None identified.

21. Port of Vancouver and Shaver Transportation Co.

GOAL

Maintain navigability

OBJECTIVES

- Improve quantity and quality of habitat (culverts at road crossings, removing obsolete structures like Condit);
- Don't draw down any mainstem dams; and
- Reduce predation by, i.e., terns.

STRATEGIES

None identified

MANAGEMENT ACTIONS

None identified

22. Melo Maiolie

GOAL

- Use mitigation funds for problems caused by the Federal hydro system;

- Focus recovery efforts where hydro impacts are greatest;
- Make recovery long lasting; and
- Operate hydro system so anadromous and resident species are not in competition.

OBJECTIVES

- Put 70% of total funds into on-the-ground activities and limit monitoring and evaluation to 15-25% of budget
- 80% or more of recovery efforts should mitigate direct effects of the hydro system
- Recovery efforts should match hydro impacts
- 70% of funds should go to long-lasting solutions for hydro problems
- Improve anadromous and resident species to at least 75% of historic levels
- Put priority on restoring production in natural lakes.

STRATEGIES

- Streamline BPA, NPPC, CBFWA and ISRP to use less than 5% of funds; and impose maximum of 25% overhead on individual projects;
- Put low priority on projects with high monitoring costs
- TBFWA develop formula for recovery efforts based on miles of rivers impacted, acres of reservoir created, wildlife units lost, and allocate funds accordingly
- Put highest priority on protecting fish that reproduce in the wild, lower priority on hatchery supplementation, and lowest priority to long-term hatchery programs with low potential to be self-sustaining;
- Consider all fish populations together when considering changes in hydro operations to avoid helping one and hurting another.

MANAGEMENT ACTIONS

None identified.

23. John R. Skalski, University of Washington

GOAL

An experimental approach to stream recovery that uses best technology across a range of conditions, using individual streams as replicate experimental units, with monitoring and evaluation to improve recovery strategies.

OBJECTIVES

- Stream-wide recovery measured by adult salmon returns, spawner-recruit ratios and fingerling-adult ratios (integrated responses of fecundity and survival) in an adaptive management framework
- Using field trials to assess whether remediation actions enhance responses over untreated streams
- Using a stair-step design to test progressively better strategies.

STRATEGIES

- With a large number of candidate streams and annual resources to address only a fraction each year
- Aim for replication and randomization
- Evaluate survival and fecundity
- Systematically measure water quality, biotic responses of invertebrates and habitat quality.

MANAGEMENT ACTIONS

- Best available technology used to improve stream quality in randomly selected streams, via fencing, reducing irrigation withdrawal, enhancing riffles and gravels, returning nutrients via carcasses.
- Measure results annually using pre-established decision rules and time frames.

- Use different actions in different subsets of streams to compare strategies and cost-effectiveness.

24. Scott O'Daniel, Confederated Tribes of Umatilla Indian Reservation

GOAL

Improve land management decisions by analyzing and maintaining watershed and sub-watershed data.

OBJECTIVES

- Construct a suite of coarse scale ecological characterizations for each watershed;
- Identify relevant, available data;
- Develop functional thresholds that characterize significant, measurable changes;
- Review and publish case studies that link abstract and empirical models; and
- Target ecological functions and patterns at critical/ESA spatial scales.

STRATEGIES

None identified

MANAGEMENT ACTIONS

None identified

25. Columbia River Alliance

GOAL

Rebuild salmon and steelhead hurt by human activity; maintain multiple purpose benefits of river; develop detailed subbasin plans using best science in most cost-effective way.

OBJECTIVES

- Develop/implement a plan to increase spawning runs of salmon and steelhead, complying with Federal law and maintaining resident fish and wildlife populations;
- improve passage at dams;
- provide more scientific certainty to mitigation;
- implement measures with least cost, highest biological benefit;
- expand monitoring and evaluation;
- maintain river's public benefits: hydropower, irrigation and increased consumptive use, navigation to existing ports, recreation and flood control.

STRATEGIES

- **Immediate actions:**
 - maximize transportation and reduce ineffective spill;
 - investigate surface collection;
 - reduce predation in mainstem and estuary;
 - expand genetic diversity by increasing escapement to allow fully-seeded habitat;
 - reduce mixed stock fishery, mark all hatchery fish;
 - complete subbasin plans and use watershed councils, CRP and incentives for landowners and others to improve riparian habitat.
- **Basinwide salmon management:**
 - establish a regional entity to design and manage salmonid recovery;
 - use research and monitoring to improve models for analysis and prediction;
 - chose cost-effective measures;
 - decentralize habitat decisions to watersheds, categorize habitat into "nature preserve" and "production/supplementation;" manage harvest to protect weak stocks;
 - use models to predict extinction prospects for listed stocks;
 - restructure hatchery management;
 - link habitat restoration and stock management to fully seed "nature preserve" areas and report results.

MANAGEMENT ACTIONS

None identified.

26. Murphy & Buchal: Goldendale, Kaiser, Northwest & Reynolds Aluminum

GOAL

Increase multiple benefits of dams and river through common sense application of quantifiable data.

OBJECTIVES

- Increase hydro production;
- Increase salmon and steelhead;
- Improve harvest, habitat and hatchery management;
- Maintain existing irrigation and allow more consumptive water use;
- Maintain navigation to river ports;
- Experiment, gather useful data.

STRATEGIES

- **Generally:**
 - Quantify benefits and costs of proposed measures;
 - implement f/w measure based on cost-effectiveness;
 - improve measurements of survival to identify high mortality areas;
 - use computer models to organize data and depict relationships to enable prediction;
 - use metapopulation models to predict extinction prospects for listed stocks.
- **Reorient management to meet legal requirements:**
 - Manage harvest to protect weak stocks;
 - manage hatcheries to achieve objectives;
 - sort habitat into "nature preserve" and production categories;
 - decentralize habitat decisions, focus regional decisions on interjurisdictional issues, limit hydropower funding to offsetting effects of hydropower.

MANAGEMENT ACTIONS

- **Mainstem:**
 - Focus on "hot spots" of mortality;
 - abandon spring flow augmentation and real-time flow management;
 - experiment with late summer/fall flow augmentation in low water years, using BPA contingency fund; maximize transportation, reduce spill at collector facilities, experiment with release sites;
 - optimize project-specific spill at non-collector facilities;
 - reactivate sluiceway passage, expand surface collection; replace old turbines with fish-friendly turbines;
 - assess natural mortality to distinguish human mortality
- **Hatcheries:**
 - unify reporting and measure success by returns to watersheds;
 - mark all hatchery fish;
 - fund genetic research to increase fish size, improve disease resistance, adapt to warm temperatures, increase abundance;
 - install spawning channels below tailraces;
 - expand existing mainstem spawning areas;
 - share tag revenues with hatcheries that return fish to watersheds;
 - move management to tribes;
 - declare some tributaries off limits to hatchery production and others as production/supplementation watersheds.
- **Harvest:**
 - Stop wild harvest, adopt tributary-specific escapement goals;
 - eliminate ocean harvest;

- redirect lower river mixed stock harvest to terminal areas;
- redirect tribal mixed stock harvest to ladder and tributary fishing;
- buy selective gear for harvesters;
- unify policing under US v. OR.
- **Habitat:**
 - Leave habitat issues to local level; abandon wildlife mitigation;
 - BPA Environmental Foundation fund habitat; evaluate cost-effectiveness of natural vs. artificial production.
- **Generally:**
 - Target research on project-specific effects;
 - expand passage models to whole life cycle;
 - build metapopulation models;
 - introduce mammalian predators to control terns;
 - allow limited marine mammal hunting.

27. Northwest Irrigation Utilities & Pacific Northwest Waterways Association

GOAL

Strong anadromous metapopulation that allow harvest; sustained resident fish; rebuilt weak stocks where cost is justified; river supports full spectrum of uses; hydro system is maintained and improved and supports ecosystem recovery consistent with integrated plan; and Region has an effective governance mechanism that operates to protect the river system, treaty rights and state water rights.

OBJECTIVES

- **Funding:** Dependable, long-term PMA and other funding for ecosystem recovery;
- **Management:** Existing entities coordinate efforts assume accountability and put a new system of financial management in place. Federal, state and tribal authorities maintained, stipulating that plan compliance satisfies ESA and Clean Water Act.
- **Ocean & estuary:** Maximize survival below Bonneville, emphasize actions with clear and immediate benefit for fish, including reduced ocean harvest and bird predation, and improve understanding of estuary.
- **Hatcheries:** Use to recover natural populations and provide harvest while protecting genetic diversity.
- **In-river harvest:** Optimize harvest while ensuring long-term viability of natural stocks.
- **Habitat:** Improve tributary habitat, providing financial incentives to landowners.
- **Water management:** Improve biological benefits, reduce societal costs, respect state law, emphasize watershed efforts and water transfers.
- **Hydro system:** Selectively improve system and operations, expand transportation

STRATEGIES

- **Funding:** Maintain regional influence over PMA to assure adequate funding, promote other funding.
- **Management:** Use NPPC or a successor to oversee plan, clarify authority with other jurisdictions. Once plan is developed, develop an executive order stipulating ESA and Clean Water compliance.
- **Ocean & estuary:** improve survival below Bonneville including selective decreases in ocean and estuary harvests.
- **Hatcheries:** Emphasize wild fish and supplementation in selected tributaries using production to support terminal harvest, not as replacement for natural spawners, and minimizing impacts on wild stocks.
- **In-river Harvest:** Reduce mixed-stock fisheries, ensure natural escapement, increase fishing and catch value; reduce fishery capitalization.
- **Habitat:** Substantially expand funding for spawning, rearing and migration habitat.

- **Water management:** Restructure BiOp flow program to protect mainstem fish while spending more on tributary mitigation with comparable biological benefits and using incentives for collaboration.
- **Hydro system:** Increase transportation and mix with spill, passage, and turbine passage improvement.

MANAGEMENT ACTIONS

- **Funding:** Commit up to \$500 million/yr. From BPA over 10-year period; assure continued availability of BPA contingency fund; protect BPA or create a regional entity to assume its role; leverage private and other funds.
- **Management:** Create entity with full regional support and tribal representation to pursue recovery in cooperation with governments and participation by interest groups; allocate funds between foregone revenues and expenditures; develop criteria for projects, monitoring and evaluation based on integrated plan, best science, judgment and balancing diverse uses; decisions not bound by operating agencies' perspectives; and consider a 3rd-party fiduciary to manage funds.
- **Ocean & estuary:** increase use of estuary for acclimation of transported fish; increase use of Young's Bay for terminal fishing; discourage terms on Rice Island; selectively decrease ocean harvest, providing incentives not to fish during return periods for certain stocks; research on ocean effects.
- **Hatcheries:** Set performance standards based on returns, emphasizing wild fish; use innovative release strategies to provide harvest; develop comprehensive plan for Basin; close down under-performing facilities; implant hatchery releases to reduce mixed-stock fishing; supplement under-seeded spawning areas; centralize incubation and rearing while increasing acclimation facilities; use low-cost, low technologies.
- **In-river harvest:** manage for escapement to spawning grounds; protect treaty rights and Zone 6 harvest; develop terminal fisheries; buy back commercial license; improve selective gear; provide incentives for reduced commercial fishing; provide sport fishing; use in-season stock assessment to manage fisheries; mark all hatchery fish; augment below-Bonneville releases with upriver fish.
- **Habitat:** Support watershed processes in Oregon and Washington plans; endow trust to fund private, local and tribal improvements; develop partnerships with timber companies, farmers, ports, tribes, towns and others; coordinate with Federal and state assistance programs.
- **Water management:** Eliminate BiOp spring-summer flow targets; evaluate biological benefits of Snake flow targets; fish managers establish flow augmentation for low water years, protect upstream resident species; priority on funding watershed capital improvements that help fish by improving stream conditions; respect hydrological conditions.
- **Hydro system:** various measures to increase transportation; bypass and turbine improvements at specific dams; moderated spill at collector projects, spill abatement measures

28. Clousten Energy Research

GOAL

Conservation of water taken for irrigation, stock watering and other purposes could be benefiting the habitat of multiple species. Application of existing technology and programs with innovative approaches when coordinated will provide improvements to water quality, affecting the aquatic environment of species throughout their life cycle. Conservation supports communities and economic development opportunities in some cases.

OBJECTIVES

- Improve water quality and quantity
- Improve acceptance of installation of fish screens
- Improve conservation of natural resources

STRATEGIES

- Apply conservation and enhancement measures for dams to water management activities and facilities, where applicable

- Establish adequate instream flow conditions for salmon by using, for example, the Instream Flow Incremental Methodology
- Undertake efforts to purchase or lease, from willing sellers and lessors, water rights necessary to maintain instream flows in accordance with appropriate state and Federal laws
- Identify and use appropriate water conservation measures in accordance with state law
- Install totalizing flow meters at major diversion points. For water withdrawn from reservoirs, install gauges that identify the water surface elevation range from full reservoir to dead pool storage elevation. Additionally, if the reservoir is located in-channel, install gauges upstream and downstream of the reservoir
- Screen water diversions on all fish-bearing streams
- Incorporate juvenile and adult salmon passage facilities on all water diversions

MANAGEMENT ACTIONS

- Support for pilot projects ought to be improved
- Cooperation with the private sector needs to be encouraged
- Conservation of natural resources is smart

D. Framework Concept Papers By Action Areas

The following table is a copy of the spreadsheet provided by the Framework workgroup. It shows the basic fish recovery elements of the different concept papers side by side. Concept Paper number 28 is not included because it came in after the production of this table by the Framework workgroup.

Activity or Objective	Concept Paper Number (See Section C Above)																											
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	
HYDRO																												
Breach Lower Snake Dams	X	X	X	X	X	X				X																		
Provide passage at Grand Coulee and Chief Joe							X					X																
John Day at spillway crest	X		X	X	X	X	X			X																		
John Day at MIP		X																										
Additional flows	X	X			X		X			X																		
Secure Canadian storage		X					X			X																		
End/reduce juvenile transportation	X	X	X		X																							
24 hr. spill from Priest downstream		X																										
Meet fish passage efficiency objectives							X								X													
Water temperature control	X		X				X	X	X	X																		
Install gas abatement facilities		X			X		X			X		X																X
Improve turbine efficiencies	X						X			X																		X
Improve adult/juvenile passage	X	X			X		X			X	X								X							X		X
Install fish-friendly turbines							X			X	X																X	
Implement IRC's/VARQ		X						X																				
Manipulate water levels to protect spawning		X					X					X																
Modify flood control operations		X								X																		
Stabilize reservoir levels				X																								
Maintain navigability (dams in)							X								X						X				X	X		
Maximize/increase juvenile transportation																									X	X	X	
Expand surface collection							X																			X		

Fish and Wildlife Implementation Plan EIS

Appendix D: Major Comment Issues/Framework Concept Papers

Activity or Objective	Concept Paper Number (See Section C Above)																											
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	
Reduce reservoir drafts and improve refill								X																				
Transport only in low flow years					X																							
Reduce/optimize spill																										X	X	
Abandon/reduce spring flow augmentation																											X	X
Redesign hydro projects															X													
Eliminate flow augmentation		X																										
Increase hydro production											X																X	
HATCHERIES																												
Biological priorities for naturally spawning fish	X						X		X	X		X		X														X
Improve hatchery Operations/mgt.	X									X																X	X	
Use Supplementation	X		X	X	X																	X				X		X
Reduce use of hatcheries		X			X	X				X												X						X
Mark all hatchery fish										X																X	X	X
White sturgeon hatchery			X																									
Spawning channels below tailraces																											X	
HABITAT																												
Support normative river conditions	X	X	X	X	X	X		X	X	X											X							
Protect/restore/acquire habitat	X		X	X	X	X	X	X		X						X				X	X			X		X		X
Meet water quality standards	X		X							X					X													
Expand existing mainstem spawning areas		X								X																	X	
Screen diversions	X									X																		
Limit water diversions			X							X								X										
Restore tributary flows	X		X							X							X							X				
Reduce pollution			X							X																		
Reduce predation	X		X																		X					X	X	X
Control land use			X							X													X					
Provide habitat incentives										X																X	X	X
Local watershed approach										X				X													X	X
Restore/consider estuary habitat	X		X							X												X		X				X

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Appendix D: Major Comment Issues/Framework Concept Papers

Activity or Objective	Concept Paper Number (See Section C Above)																										
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Delineate hatchery and natural production watersheds														X												X	
Conduct watershed audits										X																	
Clean reservoir spawning gravels																		X									
More consumptive water use																									X	X	
Abandon Wildlife mitigation																											
HARVEST																											
Ensure harvestable stocks	X	X	X	X	X	X	X					X	X										X				X
Improve harvest management	X		X							X										X						X	
Protect/increase escapement	X					X				X			X						X	X					X		X
Develop known stock fisheries					X		X			X																X	X
Manage to weak stocks				X						X															X	X	
Abundance based harvest			X		X	X				X													X		X	X	X
OTHER																											
Restore salmon to historic abundance			X																								
Recover ESA stocks		X				X			X	X			X														
Protect/expand metapopulations		X				X				X			X							X							X
Enforce existing laws (e.g. CWA)	X			X	X		X			X																	X
Changes in or new laws needed										X			X						X								
Multi-species approach/protection		X		X		X	X	X	X	X			X									X					
Lamprey research/restoration			X			X	X			X																	
Comprehensive native resident fish program		X								X		X	X		X												
Better cost effectiveness		X								X			X	X						X					X	X	X
Compensate adversely affected parties							X			X										X							
Prioritize cost-effective implementation										X								X							X		
Implement PATH results		X						X																			
Diversify funding sources										X					X												X
"Reverse Staircase" approach						X																					
Establish genetic reservations								X		X																	
Reduce commodity subsidies	X																										
Maintain affordable, cost-based power	X	X			X						X				X												
Sustainable farming					X																						

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Appendix D: Major Comment Issues/Framework Concept Papers

Activity or Objective	Concept Paper Number (See Section C Above)																											
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	
Better governance structure										X					X					X						X		X
Establish a Biodiversity Institute										X																		
Create artificial flows in reservoirs																												
Foster economic/social vitality																X				X						X		
Maintain irrigation					X																					X	X	
Stipulate ESA & CWA compliance										X																		X

E. Public Positions on Fish and Wildlife Management and Recovery

Through various media, individuals and organizations have expressed many viewpoints and perspectives on approaches to fish and wildlife management and salmon recovery. The spectrum of positions is broad, and often reflects the stakeholders' mission, interest, or area of expertise. The following sections present a sample of publicly expressed positions, and are not intended to be comprehensive.

Many believe that dams and salmon can co-exist together, and that dams are the lifeblood of our local economy by providing a major source of the Region's hydropower generation, flood and erosion control, farm irrigation, enhanced groundwater tables, recreation, tax generation, barge shipping, and by creating wetlands and wildlife habitat. These people oppose dam breaching, dam removal, reservoir drawdowns and river-flow augmentations; they support salmon recovery while also desiring to protect people, preserve jobs, and support the regional economy.¹ Others are diametrically opposed on every issue. Groups such as the Columbia River Conversations exist to defuse the potential for conflict by bringing scientific and economic information directly to people and by facilitating dialogue with experts and among neighbors.²

Religious Viewpoints

The Columbia River Pastoral Letter Project offered ten considerations for community projects to renew the watershed:

- (1) consider the common good;
- (2) conserve the watershed as a common good;
- (3) conserve and protect species of wildlife;
- (4) respect the dignity and traditions of the Region's indigenous peoples;
- (5) promote justice for the poor, linking economic justice and environmental justice;
- (6) promote community resolution of economic and ecological issues;
- (7) promote social and ecological responsibility among reductive and reproductive enterprises;
- (8) conserve energy and establish environmentally integrated alternative energy sources;
- (9) respect ethnic and racial cultures, citizens and communities; and
- (10) integrate transportation and recreation needs with sustainable ecosystem requirements.³

¹ Save Our Dams, <http://www.saveourdams.com/> (last visited March, 2003)

² Columbia River Conversations, http://www.columbiaconversations.org/pages/About_CRC.html (last visited March, 2003)

³ Columbia River Pastoral Letter Project, February 22, 2001, Seattle, WA.

Legal Viewpoints

Stakeholder organizations representing large numbers of individuals use the legal system to effect change in natural resource management. For example, Earthjustice and James L. Buchal use Federal and state environmental laws as the vehicle to change society's approaches to public lands; air and water pollution; toxic contamination; endangered species and wildlife habitat; and environmental justice.^{4,5}

Science Viewpoints

Scientists and organizations of natural resource professionals have weighed in on the species recovery debate. For example, a letter from 206 scientists (including state and Federal biologists) to the White House asked the President to seriously consider removing some Federal dams in the Columbia Basin to help restore fish runs and save endangered salmon from extinction.⁶ The American Fisheries Society encourages and supports the following:

- (1) development of comprehensive fisheries plans and management objectives;
- (2) further development and integration of standardized procedures in hydropower impact assessment;
- (3) better research to define critical impact thresholds for water quality parameters most commonly affected by hydropower projects;
- (4) development of mitigation techniques and technologies intended to reduce or eliminate adverse impacts on fisheries resources from hydropower development;
- (5) licensing agencies to establish a fund, either project-specific or pooled, that is sufficient to cover removal and restoration costs of nonfederal projects upon license termination; and
- (6) agency consideration of relicensing under present environmental standards.⁷

Viewpoints by Native American Indians

No single viewpoint captures the views of all Native American Indians. One viewpoint held by four tribes recognizes that fisheries are a basic and important natural resource and of vital concern to the Indians, that the conservation of this resource is dependent upon effective and progressive management, that Federal court decisions have specifically established that the tribes have treaty rights to an equitable share of the Columbia Basin fishery resource, and that by unity of action they can best accomplish these things, not only for the benefit of their own people but for all of the people of the Pacific Northwest.⁸

⁴ Earthjustice, <http://www.earthjustice.org/> (last visited March, 2003)

⁵ James L. Buchal, <http://www.buchal.com/> (last visited March, 2003)

⁶ <http://www.taxpayer.net/snake/Take%20Action/scientistletter.htm/> (last visited March, 2003)

⁷ American Fisheries Society, <http://www.fisheries.org/resource/page23.htm> (last visited March, 2003)

⁸ Columbia River Inter-Tribal Fish Commission, <http://www.critfc.org/text/twentyfive.html> (last visited March, 2003)

Twenty different tribes believe fishery regimes need to be developed that will have the least impact on the weakest stocks, while maximizing harvest opportunity on stronger wild and hatchery stocks; that the ESA should have a standard of salmon stock recovery that not only saves species from extinction, but also allows for treaty-reserved harvests; and that fish and wildlife resources and the ecosystems on which they depend must be managed in a holistic manner that recognizes that all things are connected.⁹

Financial Viewpoints

A compilation of opinions holds that the Federal government should compensate the Region for economic losses resulting from species recovery; however, others believe that the Region already is compensated through dam construction and low electricity rates.¹⁰ Some believe that incentive-based programs such as water markets can provide implicit compensation through the transfer or exchange of goods and services. Still others favor compensation or mitigation programs, such as worker retraining, that speed transition and increase political acceptance of changes. Many feel that in-kind compensation is preferable, particularly with an aim of equitable resource allocation. A number contend that it is possible to save money and save fish by partially removing the four Lower Snake River dams.¹¹

Viewpoints of Business, Industry, Agriculture, Forestry, and Ports

A coalition's viewpoint suggests that government bias for naturally spawned (wild) fish and against hatchery fish should be eliminated, that salmon listings that ignored hatchery salmon must be reconsidered, that government agencies must pursue sensible and balanced hatchery policies and programs to assure bountiful fish populations, that government has failed to protect salmon by allowing overharvest, and that governments should recognize and cope with the impact of protected predators and ocean conditions on salmon populations, while being careful not to impose restrictions on human activities in watersheds that will provide little or no benefits to fish.^{12,13} Many do not support removing or breaching Columbia and Snake River dams: they believe there is uncertainty about whether drawdown or natural rivers will benefit fish, that there is evidence that barging of salmon and steelhead is successful in moving smolts below the dams, and that improvements in dam bypass systems and collections systems can make them even more successful.^{14,15,16} Miners have expressed concern that the salmon recovery focus on

⁹ Northwest Indian Fisheries Commission, <http://www.nwifc.wa.gov/esa/tribes.asp> (last visited March, 2003)

¹⁰ H. Berry and R.B. Rettig. 1994. Who should pay for salmon recovery? A Pacific Northwest Extension Publication Oregon Washington, Idaho. PNW 470, <http://eesc.orst.edu/agcomwebfile/edmat/PNW470.pdf> (last visited March, 2003)

¹¹ Taxpayers for Common Sense, <http://www.taxpayer.net/snake/> (last visited March, 2003)

¹² Oregonians In Action, <http://oia.org/newssalmon.htm> (last visited March, 2003)

¹³ Common Sense Salmon Recovery, <http://www.salmonjustice.com/> (last visited March, 2003)

¹⁴ Direct Services Industries, Inc., <http://www.cyberlearn.com/dsi.htm> (last visited March, 2003)

¹⁵ Port of Lewiston, <http://www.portoflewiston.com/sdabd.html> (last visited March, 2003)

habitat may adversely affect mining.¹⁷ The forest industry has recognized the need for increased habitat and water quality protection through modified forest practices.¹⁸

Views of Fishing Groups

Many fishers have long opposed more dam-building and have endorsed the removal of several dams as necessary measures for salmon restoration.¹⁹ Many believe the most serious threat to fisheries resources is habitat loss, that the most severely depressed runs should be restored, and that the public should be educated about the true costs of salmon declines.²⁰ Noncommercial fishers have stated that restoring the lower Snake to a free-flowing river would restore Idaho's family and economic heritage of salmon and steelhead fishing, and that impacts to farmers and businesses should be fully mitigated.^{21,22}

Views of Conservation Groups

Many conservation groups exist with many opinions on fish and wildlife recovery. A common position is that hydroelectric dams are the biggest killers of salmon and steelhead, and threaten other fish and wildlife.²³ Many believe that the surest way to recover Snake River salmon is to remove parts of the four lower Snake River dams to restore natural river flows,^{24,25,26} and contend that barging is no substitute for more natural river conditions.²⁷ Most believe that selective dam removal can occur while producing an economic benefit. Others target changes they believe are needed in forest practices and other land uses affecting habitat to prevent the continued decline of Pacific salmon, concentrating on protection of the aquatic refuges, or remaining strongholds, of the species.²⁸

¹⁶ Pulp and Paper Workers Resource Council, <http://www.cyberlearn.com/pprc.htm> (last visited March, 2003)

¹⁷ Oregon Independent Miners, <http://oregon-independent-miners.com/govtp6.html> (last visited March, 2003)

¹⁸ Washington Forest Protection Association, <http://washingtonforests.com/forestsandfishlaw/index.html/>

¹⁹ Pacific Coast Federation of Fishermen's Associations, <http://www.pcffa.org/dams.htm> (last visited March, 2003)

²⁰ Institute for Fisheries Resources, <http://www.ifrfish.org/> (last visited March, 2003)

²¹ Idaho Steelhead and Salmon Unlimited, <http://www.idfishnhunt.com/issunews.htm#dam/> (last visited March, 2003)

²² Trout Unlimited, <http://www.tu.org/salmon/dams.html> (last visited March, 2003)

²³ NW Energy Coalition, <http://www.nwenergy.org/salmon/#dams> (last visited March, 2003)

²⁴ Columbia & Snake Rivers Campaign, <http://www.wildsalmon.org/about/index.htm/> (last visited March, 2003)

²⁵ Oregon Natural Resources Council, http://www.onrc.org/wild_oregon/salmonriver98/salmonriver98.html (last visited March, 2003)

²⁶ The Sierra Club Foundation, <http://www.sierraclub.org/foundation/programs/salmon.asp> (last visited March, 2003)

²⁷ Idaho Rivers United, <http://www.idahorivers.org/salfishbarging.htm> (last visited March, 2003)

²⁸ Pacific Rivers Council, http://www.pacrivers.org/article_view.cfm?ArticleID=1056&RandSeed=3737/ (last visited March, 2003)

Appendix E
Regional Energy Generation Resources

Appendix E

REGIONAL ENERGY GENERATION RESOURCES

The following information is on regional electric energy resources. It is provided in two listings to address the existing generation and planned generation.

- Table A lists the existing generation by type of generation, date of energization, megawatt capacity, and location.
- Table B lists the planned generation by type of generation, megawatt capacity, and location.

Together, these tables should give a good idea of the energy resource picture for the Region.

Table A: Power Plants in the Pacific Northwest (Primarily based on Northwest Power Planning Council June 2002 data)

Project	Resource Type	Installed Capacity (MW)	Service Date	County	State
Afton Generating Co. 1	Wood Residue	7.50	1983	Lincoln	WY
Albeni Falls	Hydro	42.60	1955		ID
Alden Bailey	Natural gas	10.70	2002	Clatskanie	OR
Alder	Hydro	50.00	1945		WA
Amalgamated Sugar (Nampa) 1-3	Coal	9.30	1968	Canyon	ID
Amalgamated Sugar (Nyassa) 1-3	Coal	14.00	1942	Malheur	OR
Amalgamated Sugar (Paul)	Natural Gas	5.50		Minidoka	ID
Amalgamated Sugar (Twin Falls) 1-3	Coal	7.00	1994	Twin Falls	ID
Amy Ranch	Hydro	0.65	1986	Butte	ID
Anderson Ranch	Hydro	40.00	1950	Elmore	ID
Arnerican Falls	Hydro	92.40	1978	Power	ID
Ashton	Hydro	7.35			ID
Atlanta Power Station	Hydro	0.15	1910	Elmore	ID
Auberry Energy	Wood Residue	7.50	1985		ID
Barber Dam	Hydro	3.70	1989		ID
Barney Creek	Hydro	0.07	1986	Park	MT
Beaver 1 – 7	Natural gas	586.20	1977	Columbia	OR
Beaver 8	Natural gas	24.50	2001	Columbia	OR
Bend Power	Hydro	1.11	1913	Deschutes	OR
Bethel 1	Fuel Oil	56.70	1973	Marion	OR
Bethel 2	Fuel Oil	56.70	1973	Marion	OR
BGI (Yellowstone Energy)	Pet Coke	64.00	1995	Yellowstone	MT
Big Cliff	Hydro	18.00	1954	Linn	OR
Big Fork	Hydro	4.15	1910	Flathead	MT
Big Hanaford	Natural gas	248.00	2002	Lewis	WA
Big Sheep Creek	Hydro	1.63	1985	Stevens	WA
Billingsley Creek	Hydro	0.28	1986	Gooding	ID

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Appendix E: Regional Energy Generation Resources

Project	Resource Type	Installed Capacity (MW)	Service Date	County	State
Biomass One	Wood Residue	25.00	1986	Jackson	OR
Birch Creek	Hydro	2.70	1987	Clark	ID
Birch Creek B	Hydro	0.05	1984	Gooding	ID
Black Canyon	Hydro	10.00	1986	Gem	ID
Black Canyon No. 3	Hydro	0.10	1983		ID
Black Creek	Hydro	3.70	1994	King	WA
Black Eagle	Hydro	16.80	1927		MT
Blind Canyon	Hydro	1.22	1992	Gooding	ID
Bliss	Hydro	75.00	1949	Gooding	ID
Blue Mountain Forest Products	Wood Residue	3.50	1986	Grant	OR
Boardman	Coal	585.00	1980	Morrow	OR
Boise Cascade (Emmett)	Wood Residue	14.00	1985	Gem	ID
Boise Cascade (LaGrand)	Wood Residue	4.60		Union	OR
Boise Cascade (Medford)	Wood Residue	8.50	1961	Jackson	OR
Boise Diversion	Hydro	1.50	1912		ID
Bonneville	Hydro	1050.40	1938		OR/WA
Bonneville Fishway	Hydro	12.25			OR/WA
Boulder Creek	Hydro	0.35	1984	Lake	MT
Boulder Park	Natural gas	24.60	2001	Spokane	WA
Boundary	Hydro	1039.80	1967		WA
Boundary	Fuel Oil	0.75		Pend Oreille	WA
Box Canyon	Hydro	0.56	1983		ID
Box Canyon Dam	Hydro	60.00	1955	Pend Oreille	WA
Bozeman Woodwaste	Wood Residue	12.00	1985	Gallatin	MT
BP Cherry Point GTs	Natural gas	72.80	2001	Whatcom	WA
Bremerton Wastewater	Wastewater Gas	0.14		Kitsap	WA
Briggs	Hydro	0.30	1986	Fremont	ID
Briggs Creek	Hydro	0.75	1985	Gooding	ID
Broadwater	Hydro	10.00	1989		MT
Brownlee	Hydro	585.40	1958		ID/OR
Brunswick Creek	Hydro	0.04	1982	Washington	OR
Bull Run	Hydro	21.00	1912	Clackamas	OR
Bull Run No. 1 (Portland Hydro)	Hydro	23.75	1981	Multnomah/ Clackamas	OR
Bull Run No. 2 (Portland Hydro)	Hydro	11.88	1982	Multnomah/ Clackamas	OR
Burrill Lumber	Natural Gas	1.50	1990	Jackson	OR
Burton Creek	Hydro	0.80	1996	Lewis	WA
Bypass	Hydro	10.00	1988	Jerome	ID
C.J. Strike	Hydro	82.80	1952	Owyhee	ID
Cabinet Gorge	Hydro	231.30	1952	Bonner	ID
Calispell Creek	Hydro	1.00			WA
Canal Creek	Hydro	1.10	1984	Wallowa	OR
Canyon Creek	Hydro	0.08	1985	Clackamas	OR
Canyon Ferry	Hydro	50.00	1953	Lewis & Clark	MT
Carmen-Smith	Hydro	104.50	1963	Linn	OR
Cascade	Hydro	12.42	1926	Valley	ID

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Project	Resource Type	Installed Capacity (MW)	Service Date	County	State
Cascade Creek	Hydro	0.08	1983	Park	MT
Cedar Draw Creek	Hydro	2.92	1985	Twin Falls	ID
Cedar Falls (Masonry Dam)	Hydro	30.00	1905	King	WA
Central Oregon Siphon	Hydro	5.50	1989	Deschutes	OR
Centralia 1	Coal	730.00	1971	Lewis	WA
Centralia 2	Coal	730.00	1972	Lewis	WA
Cereghino (John Day Creek)	Hydro	1.10	1987	Idaho	ID
Champion International – Libby	Wood Residue	17.00	1960	Lincoln	MT
Champion International–Milltown (Bonner)	Wood Residue	2.20		Missoula	MT
Chandler	Hydro	12.00	1956	Benton	WA
Chehalis Generating Facility	Natural gas	520.00	2003	Lewis	WA
Chelan	Hydro	48.00	1928	Chelan	WA
Chief Joseph	Hydro	2075.00	1955	Douglas	WA
City of Albany	Hydro	0.50	1923	Linn	OR
City of Anacortes	Fuel Oil	1.75		Skagit	WA
Clear Lake	Hydro	2.50	1937	Gooding	ID
Clearwater 1	Hydro	15.00	1953	Douglas	OR
Clearwater 2	Hydro	26.00	1953	Douglas	OR
Clearwater Hatchery	Hydro	2.52		Clearwater	ID
Cline Falls	Hydro	1.00	1913	Deschutes	OR
Cochrane	Hydro	48.00	1957	Cascade	MT
Coffin Butte	Landfill Gas	2.00	1995	Benton	OR
Collins Wood Products	Wood Residue	7.50		Klamath	OR
Colstrip 1	Coal	333.00	1975	Rosebud	MT
Colstrip 2	Coal	333.00	1975	Rosebud	MT
Colstrip 3	Coal	718.00	1984	Rosebud	MT
Colstrip 4	Coal	718.00	1986	Rosebud	MT
Columbia Generating Station	Uranium	1216.00	1984	Benton	WA
Company Creek	Hydro	0.20		Chelan	WA
Condit	Hydro	14.70	1913	Klickitat	WA
Condon	Wind	49.80	2002	Gilliam	OR
Coos County MSW	MSW		1986	Coos	OR
COPCO 1	Hydro	20.00		Siskiyou	CA
COPCO 2	Hydro	27.00		Siskiyou	CA
Cougar	Hydro	25.00	1964	Lane	OR
Cove	Hydro	0.04	1917	Caribou	ID
Cowiche Hydroelectric Project	Hydro	1.47	1986	Yakima	WA
Cowlitz Falls	Hydro	70.20	1994	Lewis	WA
Coyote Springs 1	Natural Gas	245.00	1995	Morrow	OR
Coyote Springs 2	Natural gas	280.00	2002	Morrow	OR
Crater Lake Lumber Company	Wood Residue	2.50		Klamath	OR
Crown Pacific (Formerly Gilchrist)	Wood Residue	1.50		Klamath	OR
Crystal Mountain	Fuel Oil	2.80	1973	Pierce	WA
Cushman 1	Hydro	50.00	1926	Mason	WA
Cushman 2	Hydro	81.00	1930	Mason	WA
D.R. Johnson (Riddle, Cogen II)	Natural Gas	7.50	1987	Douglas	OR

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Appendix E: Regional Energy Generation Resources

Project	Resource Type	Installed Capacity (MW)	Service Date	County	State
Daishowa	Fuel Oil			Clallum	WA
DAW (Diamond Int.) Forest Products	Wood Residue	10.00	1960	Deschutes	OR
Deep Creek	Hydro	0.27	1983	Stevens	WA
Denny Creek	Hydro	0.08	1985	Klamath	OR
Detroit	Hydro	100.00	1953	Linn	OR
Dexter	Hydro	15.00	1955	Lane	OR
Diablo	Hydro	152.80	1936		WA
Dietrich Drop	Hydro	4.77	1988		ID
Doug Hull	Hydro	0.25	1983		ID
Dry Creek	Hydro	3.60	1987	Butte	ID
Dworshak	Hydro	400.00	1974		ID
Dworshak (Clearwater Hatchery)	Hydro	2.90	2000	Clearwater	ID
Eagle Point	Hydro	2.80	1957	Jackson	OR
East Fork Ditch	Hydro	2.50	1994		ID
East Side	Hydro	3.20	1924	Klamath	OR
Eastsound	Fuel Oil	1.30		San Juan	WA
Ebey Hill	Hydro	0.10	1992	Snohomish	WA
EBR-II	Uranium				ID
Edward Hines Lumber	Wood Residue			Lane	OR
Electron	Hydro	25.50	1904	Pierce	WA
Elk Creek	Hydro	2.32	1984	Idaho	ID
Ellingson Lumber	Wood Residue	2.80		Baker	OR
Eltopia Branch Canal 4.6	Hydro	2.20	1983		WA
Elwha Dam	Hydro	12.00	1913		WA
Encogen 1-3	Natural Gas	160.00	1993	Whatcom	WA
Eugene/Springfield Wastewater	Wastewater Gas	0.84		Lane	OR
Evander Andrews (Danskin)	Natural gas	90.00	2001	Elmore	ID
Everett Cogeneration Project	Black Liquor	52.20	1996	Snohomish	WA
Evergreen Forest Products	Wood Residue	6.25	1983	Adams	ID
Fall Creek	Hydro	2.20	1910	Siskiyou	CA
Fall River	Hydro	9.10	1993	Fremont	ID
Falls Creek	Hydro	4.00	1984	Linn	OR
Faraday	Hydro	35.92	1907	Clackamas	OR
Farmers Irr. Dist. No. 2 (Copper Dam)	Hydro	3.00	1985	Hood River	OR
Farmers Irr. Dist. No. 3 (Peters Drive)	Hydro	1.80	1986	Hood River	OR
Faulkner	Hydro	0.87	1987	Gooding	ID
Felt	Hydro	7.45	1986	Teton	ID
Ferguson Ridge	Hydro	1.90	1984	Wallowa	OR
Finley	Natural gas	27.00	2001	Benton	WA
Fish Creek	Hydro	11.00	1952	Douglas	OR
Fisheries Development No. 1	Hydro	0.25	1990	Gooding	ID
Foote Creek Rim 1	Wind	41.40	1999	Carbon	WY
Foote Creek Rim 2	Wind	1.80	1999	Carbon	WY
Foote Creek Rim 4	Wind	16.80	2000	Carbon	WY
Ford (Jim Ford Creek)	Hydro	1.50	1987	Clearwater	ID
Forgy	Hydro	0.10	1995	Adams	ID

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Project	Resource Type	Installed Capacity (MW)	Service Date	County	State
Fort Peck	Hydro	185.30	1943	Valley/McCone	MT
Foster	Hydro	20.00	1968	Linn	OR
Frank Bird	Natural Gas	69.00	1951	Yellowstone	MT
Frederickson 1	Natural Gas	85.00	1981	Pierce	WA
Frederickson 2	Natural Gas	85.00	1981	Pierce	WA
Frederickson Power 1	Natural gas	249.00	2002	Pierce	WA
Fredonia 1	Natural Gas	123.60	1984	Skagit	WA
Fredonia 2	Natural Gas	123.60	1984	Skagit	WA
Fredonia 3	Natural gas	53.00	2001	Skagit	WA
Fredonia 4	Natural gas	53.00	2001	Skagit	WA
Frontier Energy	Wood Residue	10.00	2001	Morrow	OR
Galesville	Hydro	1.66	1987	Douglas	OR
Gem State	Hydro	22.30	1988	Bingham	ID
Geo-Bon No. 2	Hydro	1.06	1986		ID
Georgetown	Hydro	0.45	1985	Bear Lake	ID
Georgia-Pacific (Bellingham)	Natural gas	10.70	2001	Whatcom	WA
Georgia-Pacific (Camas)	Black Liquor	52.00	1995	Clark	WA
Georgia-Pacific (Lebanon)	Wood Residue	2.00		Linn	OR
Georgia-Pacific (Wauna)	Black Liquor	36.00	1996	Clatsop	OR
Glines Canyon	Hydro	12.05			WA
Goldendale Energy Center	Natural gas	248.00	2002	Klickitat	WA
Goodrich	Hydro	0.08		Baker	OR
Gorge	Hydro	158.83	1924		WA
Gorge Energy (SDS Lumber) 1	Wood Residue	3.50	1979	Klickitat	WA
Gorge Energy (SDS Lumber) 2	Wood Residue	5.00	1985	Klickitat	WA
Grace	Hydro		1923		ID
Grand Coulee	Hydro	6832.50	1941		WA
Grand Coulee (Pumped Storage)	Pmp Storage	314.40	1941		WA
Grant Co. PUD ICs	Fuel Oil	32.00	2001	Grant	WA
Grant Village	Fuel Oil	3.00		Yellowstone N.P.	WY
Grays Harbor Diesels	Fuel Oil	10.00	2002	Grays Harbor	WA
Grays Harbor Energy Facility	Natural gas	650.00	2003	Grays Harbor	WA
Grays Harbor Paper	Wood Residue	4.40		Grays Harbor	WA
Great Western Malting	Natural Gas	20.10	1983	Clark	WA
Green Peter	Hydro	80.00	1967	Linn	OR
Green Springs	Hydro	16.00	1960	Jackson	OR
Ground Water Pumping Station	Pmp Storage	4.50	1985	Multnomah	OR
Guy Bennett Lumber	Wood Residue			Asotin	WA
H.W. Hill	Landfill Gas	10.50	1999	Klickitat	WA
Hailey	Hydro	0.07	1985		ID
Hauser Lake	Hydro	17.00	1911		MT
Hazelton A	Hydro	8.69	1990	Jerome	ID
Hazelton B	Hydro	7.60	1993	Jerome	ID
Helena Waste	Wastewater gas	0.15	1984	Lewis & Clark	MT
Hellroaring (Big Creek)	Hydro	0.40	1916	Lake	MT
Hell's Canyon	Hydro	391.50	1967		ID/OR

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Project	Resource Type	Installed Capacity (MW)	Service Date	County	State
Henry M. Jackson (Culmback)	Hydro	111.80	1984	Snohomish	WA
Hermiston Generating Project 1	Natural Gas	234.50	1996	Umatilla	OR
Hermiston Generating Project 2	Natural Gas	234.50	1996	Umatilla	OR
Hermiston Power Project	Natural gas	530.00	2002	Umatilla	OR
Hills Creek	Hydro	30.00	1962	Lane	OR
Holter	Hydro	38.40	1918		MT
Hood Street	Hydro	0.85	1990	Pierce	WA
Horseshoe Bend	Hydro	9.50	1995	Boise	ID
Hungry Horse	Hydro	428.00	1952		MT
Husky Industries	Wood Residue	5.00	1989	Jackson	OR
Ice Harbor	Hydro	603.00	1961		WA
Idaho Falls (City Plant)	Hydro	8.00	1982	Bonneville	ID
Idaho Falls Lower	Hydro	11.00	1904	Bonneville	ID
Idaho Falls Upper	Hydro	8.00	1938	Bonneville	ID
Ingram Warm Springs Ranch A	Hydro	0.51	1986	Custer	ID
Ingram Warm Springs Ranch B	Hydro	1.08	1986	Custer	ID
Iron Gate	Hydro	18.00			CA
Island Park	Hydro	4.80	1993	Fremont	ID
ITT Rayonier – Port Angeles	Black Liquor	13.00		Clallum	WA
J.E. Corrette	Coal	163.00	1968	Yellowstone	MT
James E. White (Derr Creek)	Hydro	0.25	1981	Bonner	ID
Jim Boyd	Hydro	1.20			OR
Jim Bridger 1	Coal	516.70	1974	Sweetwater	WY
Jim Bridger 2	Coal	516.70	1975	Sweetwater	WY
Jim Bridger 3	Coal	516.70	1976	Sweetwater	WY
Jim Bridger 4	Coal	516.70	1979	Sweetwater	WY
Jim Knight	Hydro	0.29	1984		ID
John C. Boyle	Hydro	80.00	1958	Klamath	OR
John Day	Hydro	2160.00	1968		OR/WA
John H. Koyle	Hydro	1.41	1983		ID
Kasel-Witherspoon	Hydro	1.41	1983		ID
Kaster Riverview	Hydro	0.40	1983		ID
Kerr	Hydro	180.00	1938	Lake	MT
Kettle Falls Generating Station	Wood Residue	57.00	1983	Stevens	WA
Kettle Falls GT	Natural gas	6.50	2002	Stevens	WA
Klamath Cogeneration Project	Natural gas	484.00	2001	Klamath	OR
Klondike	Wind	50.00	2001	Sherman	OR
Koma Kulshan	Hydro	12.00	1990		WA
Lacomb	Hydro	0.96	1986	Linn	OR
LaGrande	Hydro	65.00	1912		WA
Lake	Fuel Oil	2.70	1967	Yellowstone N.P.	WY
Lake Creek A	Hydro	1.00	1917	Lincoln	MT
Lake Creek B	Hydro	3.50	1917	Lincoln	MT
Lake Creek No 1	Hydro	0.05	1984	Josephine	OR
Lake Oswego	Hydro	0.54	1910	Clackamas	OR
Lane Plywood	Wood Residue	1.00	1982	Lane	OR

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Project	Resource Type	Installed Capacity (MW)	Service Date	County	State
Last Chance Canal	Hydro	1.66	1982		ID
Lateral No. 10	Hydro	2.87	1985	Twin Falls	ID
Leaburg Dam	Hydro	15.00	1930	Lane	OR
Lemolo 1	Hydro	29.00	1955	Douglas	OR
Lemolo 2	Hydro	33.00	1956	Douglas	OR
Lemoyne	Hydro	0.04	1985	Gooding	ID
Libby	Hydro	525.00	1975		MT
Lilliwaup Falls	Hydro	1.75	1983	Mason	WA
Little Falls	Hydro	32.00	1910		WA
Little Gold	Hydro	0.45	1983	Granite	MT
Little Goose	Hydro	810.00	1970		WA
Little Mac	Hydro	1.62	1984	Twin Falls	ID
Little Wood R Ranch	Hydro	1.93	1986		ID
Little Wood Reservoir	Hydro	1.04	1988		ID
Long Lake	Hydro	71.00	1914		WA
Longview Fibre – CR & Pwr Boilers 1-7	Black Liquor	72.00	1966	Cowlitz	WA
Longview Fibre – CT	Natural Gas	65.00	1995	Cowlitz	WA
Lookout Point	Hydro	120.00	1954	Lane	OR
Lost Creek	Hydro	49.00	1977	Jackson	OR
LOTT Wastewater	Wastewater Gas	0.50	1993	Thurston	WA
Louisiana-Pacific	Wood Residue	6.20		Missoula	MT
Low Line Canal Drop	Hydro	8.00	1984	Twin Falls	ID
Lower Baker	Hydro	71.36	1925	Skagit	WA
Lower Granite	Hydro	810.00	1975		WA
Lower Low Line No. 2	Hydro	2.80	1988	Twin Falls	ID
Lower Malad	Hydro	13.50	1905	Gooding	ID
Lower Monumental	Hydro	810.00	1969		WA
Lower Salmon Falls	Hydro	60.00	1910	Gooding	ID
LQ-LS Drains	Hydro	1.75	1984	Twin Falls	ID
Lucky Peak	Hydro	101.25	1988		ID
Madison	Hydro	8.60	1907		MT
Magic Dam	Hydro	9.00	1989	Blaine	ID
Magic Valley	Natural Gas	10.00	1996	Minidoka	ID
Magic West	Natural Gas	10.00	1996	Elmore	ID
Main Canal Headworks	Hydro	26.00	1986		WA
March Point 1	Refinery Gas	80.00	1991	Skagit	WA
March Point 2	Refinery Gas	60.00	1993	Skagit	WA
Mariah	Wind	0.15	2001	Klickitat	WA
Marion Co. Resource Recovery	MSW	14.00	1986	Marion	OR
Marion Investment	Hydro	0.90			OR
Marsh Valley	Hydro	1.70		Bannock	ID
Mayfield Dam	Hydro	162.00	1963		WA
McKenzie	Hydro	4.00		Lane	OR
McNary	Hydro	980.00	1953		OR/WA
McNary Dam Fish Attraction	Hydro	7.00	1997	Benton	WA
Medford Wastewater	Wastewater Gas	0.73		Jackson	OR

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Project	Resource Type	Installed Capacity (MW)	Service Date	County	State
Merwin (Ariel dam)	Hydro	136.00	1931		WA
Meyers Falls	Hydro	1.20	1915	Stevens	WA
Middle Fork Irrigation District 1	Hydro	0.60	1987	Hood River	OR
Middle Fork Irrigation District 2	Hydro	0.60	1987	Hood River	OR
Middle Fork Irrigation District 3	Hydro	2.10	1987	Hood River	OR
Mile 28	Hydro	1.80	1994	Jerome	ID
Mill Creek	Hydro	1.00	1984	Union	OR
Mill Creek	Hydro	0.60	1983		WA
Milltown	Hydro	4.00	1906		MT
Milner A	Hydro	58.62	1993	Twin Falls	ID
Milner B	Hydro	0.83	1993	Twin Falls	ID
Minidoka	Hydro	27.58	1909	Minidoka	ID
Minikahda	Hydro	0.07		Clackamas	OR
Mink Creek	Hydro	3.10	1988	Franklin	ID
Mint Farm	Natural gas	286.00	2003	Cowlitz	WA
Mirror Lake	Hydro	1.00	1985		WA
Mitchell Butte	Hydro	1.88	1989	Malheur	OR
Monroe Street	Hydro	14.82	1890		WA
Montana One	Coal	43.70	1991	Rosebud	MT
Moroney	Hydro	45.00	1930		MT
Morse Creek	Hydro	0.50	1988	Clallum	WA
Mossyrock	Hydro	300.00	1905		WA
Mountain Home AFB PV	Solar	0.08	1995	Owyhee	ID
Moyie Falls 2 (Lower)	Hydro	0.20	1941	Boundary	ID
Moyie Falls 1 (Upper)	Hydro	0.45	1921	Boundary	ID
Moyie River	Hydro	1.49	1982	Boundary	ID
Mt. Tabor	Hydro	0.17	1985	Multnomah	OR
Mud Creek A	Hydro	0.44	1982	Twin Falls	ID
Mud Creek B	Hydro	0.22	1982	Twin Falls	ID
Mystic Lake	Hydro	10.00	1925	Stillwater	MT
N-32 (Northside Canal)	Hydro	0.55	1985		ID
Naches	Hydro	6.37	1909	Yakima	WA
Naches Drop	Hydro	1.40	1914	Yakima	WA
Newhalem Creek	Hydro	2.13	1921	Whatcom	WA
Nichols Gap	Hydro	0.90	1986	Jackson	OR
Nicholson	Hydro	0.45	1986	Butte	ID
Nine Canyon	Wind	48.10	2002	Benton	WA
Nine Mile	Hydro	26.40	1908		WA
Nooksack	Hydro	1.50	1906	Whatcom	WA
North Fork	Hydro	40.80	1958		OR
North Fork Sprague River	Hydro	1.23	1989	Klamath	OR
North Powder	Wood Residue	7.00	1985	Baker	OR
North Side	Landfill Gas	0.90	1998	Spokane	WA
North Willow Creek (Pony Generating Station)	Hydro	0.40	1988	Madison	MT
Northeast 1 & 2	Natural Gas	61.20	1978	Spokane	WA

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Project	Resource Type	Installed Capacity (MW)	Service Date	County	State
Noxon Rapids	Hydro	466.20	1960		MT
O.J. Power Company	Hydro	0.19	1986	Oneida	ID
Oak Grove (Three Lynx, Timothy)	Hydro	40.83	1924		OR
Ochoco Lumber Company	Wood Residue			Crook	OR
Odell Creek	Hydro	0.23	1984	Hood River	OR
Okanogan Co. PUD Ph 2	Fuel Oil	26.00	2001	Okanogan	WA
Old Faithful 1	Fuel Oil	1.00	1979	Yellowstone N.P.	WY
Old Faithful 2	Fuel Oil	1.00	1979	Yellowstone N.P.	WY
Oneida Narrows	Hydro	30.00	1915		ID
Opal Springs	Hydro	4.30	1920		OR
Orchard Avenue	Hydro	1.44	1986		WA
Oregon City	Hydro	1.50			OR
Owyhee Dam	Hydro	4.34	1985		OR
Owyhee Tunnel No. 1	Hydro	8.00	1993		OR
Oxbow	Hydro	190.00	1961		ID/OR
Packwood Lake	Hydro	26.13	1964	Lewis	WA
Palisades	Hydro	118.75	1957	Bonneville	ID
Paris	Hydro	0.69	1910	Bear Lake	ID
Pasco	Natural Gas	43.00	2002	Franklin	WA
Pelton	Hydro	97.20	1957	Jefferson	OR
Pelton Reregulation Dam	Hydro	18.90		Jefferson	OR
Philips Ranch	Hydro				
Philipsburg A	Hydro	0.10	1981	Granite	MT
Philipsburg B	Hydro	0.10	1981	Granite	MT
Pine Creek	Hydro	0.37	1975	Park	MT
Pine Products Corporation	Wood Residue	5.70	1989	Crook	OR
Pocatello Wastewater	Wastewater Gas	0.14	1985		ID
Point Whitehorn 1	Fuel Oil	61.00	1974	Whatcom	WA
Point Whitehorn 2	Natural Gas	85.00	1981	Whatcom	WA
Point Whitehorn 3	Natural Gas	85.00	1981	Whatcom	WA
Ponds Lodge	Hydro	0.25	1936	Fremont	ID
Port Townsend Paper 2	Black Liquor	3.50	1929	Clallum	WA
Port Townsend Paper 4	Black Liquor	3.50	1929	Clallum	WA
Port Townsend Paper 5	Black Liquor	7.50	1986	Clallum	WA
Port Townsend Paper 6	Hydro	0.38	1982	Clallum	WA
Portneuf River	Hydro	0.90	1993	Bannock	ID
Post Falls	Hydro	14.75	1906	Kootenai	ID
Potholes East Canal 66.0	Hydro	2.40	1985	Franklin	WA
Potholes East Canal Headworks	Hydro	6.50	1990	Grant	WA
Potlatch – Lewiston 1	Black Liquor	10.00	1950	Nez Pierce	ID
Potlatch – Lewiston 2	Black Liquor	9.20	1977	Nez Pierce	ID
Potlatch – Lewiston 3	Black Liquor	28.80	1981	Nez Pierce	ID
Potlatch – Lewiston 4	Black Liquor	65.00	1991	Nez Pierce	ID
Powerdale	Hydro	6.00	1923	Hood River	OR
Prairie Wood Products (Cogen I)	Natural Gas	7.50	1986	Grant	OR
Preston	Hydro	0.41	1987	Franklin	ID

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Project	Resource Type	Installed Capacity (MW)	Service Date	County	State
Priest Rapids	Hydro	855.00	1959	Grant	WA
Pristine Springs	Hydro	0.13		Gooding	ID
Prospect 1	Hydro	3.75	1912	Jackson	OR
Prospect 2	Hydro	32.00	1920	Jackson	OR
Prospect 3	Hydro	7.20	1932	Jackson	OR
Prospect 4	Hydro	1.00	1944	Jackson	OR
Quality Veneer & Lumber	Wood Residue	5.00	1974	Okanogan	WA
Quality Veneer & Lumber	Wood Residue	7.50	1974	Okanogan	WA
Quincy Chute	Hydro	7.80	1984	Grant	WA
Rainbow	Hydro	36.50	1910	Cascade	MT
Rathdrum 1	Natural Gas	83.50	1995	Kootenai	ID
Rathdrum 2	Natural Gas	83.50	1995	Kootenai	ID
Rathdrum Power	Natural gas	270.00	2001	Kootenai	ID
Rayonier (ex Wood Power, Inc.)	Wood Residue	6.75	1983	Benewah	ID
Reeder Gulch	Hydro	0.76	1985	Jackson	OR
Reynolds Irrigation District	Hydro	0.35	1985	Owyhee	ID
Richland Sewer	Wastewater Gas			Benton	WA
Rim View	Hydro	0.26	2000	Gooding	ID
River Mill	Hydro	19.10	1911	Clackamas	OR
River Road	Natural gas	248.00	1997	Clark	WA
Rock Creek	Hydro	0.80	1905	Baker	OR
Rock Creek #1	Hydro	2.54	1983	Twin Falls	ID
Rock Creek #2	Hydro	1.90	1988	Twin Falls	ID
Rock Creek Wastewater	Wastewater Gas	0.30		Washington	OR
Rock Island	Hydro	622.50	1933	Chelan	WA
Rock River I	Wind	50.00	2001	Carbon	WY
Rocky Brook	Hydro	1.16	1985	Jefferson	WA
Rocky Reach	Hydro	1213.15	1961	Chelan	WA
Roseburg Forest Products – Dillard	Natural Gas	45.00	1955	Douglas	OR
Ross	Hydro	338.63	1952	Whatcom	WA
Ross Creek	Hydro	0.50	1996	Gallatin	MT
Round Butte	Hydro	300.00	1964	Jefferson	OR
Roza	Hydro	11.25	1958	Kittitas	WA
Russell D. Smith	Hydro	6.11	1982	Adams	WA
Ryan	Hydro	48.00	1916	Cascade	MT
Sagebrush	Hydro	0.32	1985	Lincoln	ID
Salmon 1	Fuel Oil	2.75	1967	Lemhi	ID
Salmon 2	Fuel Oil	2.75	1967	Lemhi	ID
Savage Rapids Diversion	Hydro	1.30	1955	Jackson	OR
Schaffner	Hydro	0.45	1986	Lemhi	ID
Sharrott Creek	Hydro	0.10		Ravalli	MT
Shingle Creek	Hydro	0.22	1984	Idaho	ID
Short Mountain	Landfill Gas	3.20	1992	Lane	OR
Shoshone	Hydro	0.90	1982		ID
Shoshone Falls	Hydro	12.50	1907	Jerome	ID
Shuffleton 1	Fuel Oil	35.10	1930	King	WA

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Project	Resource Type	Installed Capacity (MW)	Service Date	County	State
Shuffleton 2	Fuel Oil	35.10	1930	King	WA
SierraPine Medite	Natural Gas	6.00	2001	Jackson	OR
Simplot Pocatello	Natural Gas	15.90	1986	Power	ID
Skagit County Resource Recovery	MSW	2.50	1988	Skagit	WA
Skookumchuck	Hydro	1.00	1990		WA
Slaughterhouse Gulch	Hydro	0.12	1983	Twin Falls	ID
Slide Creek	Hydro	18.00	1951	Douglas	OR
Smith Creek	Hydro	0.08		Whatcom	WA
Smith Creek	Hydro	37.79	1990	Boundary	ID
Smurfit Newsprint	Natural Gas	15.00		Clackamas	OR
Snake River Pottery	Hydro	0.09	1984		ID
Snedigar Ranch	Hydro	0.18	1985	Twin Falls	ID
Snoqualmie Falls 1	Hydro	11.90	1898	King	WA
Snoqualmie Falls 2	Hydro	30.10	1910	King	WA
Snow Mountain Pine	Wood Residue	8.00		Harney	OR
Soda Creek 4	Hydro	0.50	1988	Caribou	ID
Soda Creek 5	Hydro	0.37	1988	Caribou	ID
Soda Point Reservoir	Hydro	14.00	1925		ID
Soda Springs Dam	Hydro	11.00	1952	Douglas	OR
South Dry Creek	Hydro	1.80	1985	Carbon	MT
South Fork Tolt	Hydro	16.70	1995	King	WA
South Whidbey	Fuel Oil	27.00	1972	Island	WA
South Willow Creek B	Hydro	0.29	1980	Madison	MT
SP Newsprint	Natural Gas	40.00		Yamhill	OR
Spokane MSW	MSW	23.00	1991	Spokane	WA
Spokane Wastewater	Wastewater Gas	0.30		Spokane	WA
Spring Creek	Hydro		1991	Klickitat	WA
Springfield ICs	Natural Gas	9.50	2001	Lane	OR
St Regis	Wood Residue	4.00		Klickitat	WA
St. Anthony	Hydro	0.50	1915		ID
Stateline	Wind	265.00	2001	Walla Walla	WA
Stayton	Hydro	0.60		Marion	OR
Steam Plant No. 2	MSW	38.00	1989	Pierce	WA
Stevenson No. 1	Hydro	0.12	1979	Gooding	ID
Stevenson No. 2	Hydro	0.09	1980	Gooding	ID
Stone Container RB	Black Liquor	10.90	1990	Missoula	MT
Stone Creek	Hydro	12.00	1993	Clackamas	OR
Strawberry	Hydro	1.50	1951	Lincoln	WY
Strawberry Creek	Hydro	0.25	1987	Park	MT
Sumas Energy	Natural Gas	123.00	1993	Whatcom	WA
Summer Falls	Hydro	92.00	1984		WA
Summit 1	Fuel Oil	3.00	1967	Clackamas	OR
Summit 2	Fuel Oil	3.00	1967	Clackamas	OR
Sunshine	Hydro	0.11	1987	Lemhi	ID
Swan Falls	Hydro	25.00	1910	Ada	ID
Swift 1	Hydro	240.00	1958	Skamania	WA

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Project	Resource Type	Installed Capacity (MW)	Service Date	County	State
Swift 2	Hydro	70.00	1958	Cowlitz	WA
Swift Lower	Hydro	0.75		Lincoln	WY
Swift Upper	Hydro	0.80		Lincoln	WY
Sygitowicz Creek	Hydro	0.45	1986	Whatcom	WA
T.W. Sullivan	Hydro	15.30	1985	Clackamas	OR
Tacoma Landfill	Landfill Gas	1.90	1998	Pierce	WA
Telford	Hydro	0.16	1984	Butte	ID
Tenaska Washington Partners Cogeneration Station	Natural Gas	262.00	1994	Whatcom	WA
The Dalles	Hydro	1807.00	1957		OR/WA
The Dalles North Fishway	Hydro	4.90	1991	Klickitat	WA
Thompson Falls	Hydro	50.00	1915		MT
Thompson's Mills	Hydro	0.10	1986	Linn	OR
Thousand Springs	Hydro	8.80	1912	Gooding	ID
Tillamook Lumber	Wood Residue	12.50	1978	Tillamook	OR
Toketee Falls Dam	Hydro	42.60	1950	Douglas	OR
Trail Bridge	Hydro	10.00	1963		OR
Trinity	Hydro	0.24	1923		WA
Trojan	Uranium	1216.00	1975	Columbia	OR
Troy	Wood Residue	2.10		Lincoln	MT
Tuttle Ranch	Hydro	1.06	1983	Gooding	ID
Twin Falls	Hydro	20.00	1990		WA
Twin Falls A & B	Hydro	52.70	1935	Twin Falls	ID
Twin Reservoirs	Hydro	2.10	1988		WA
University of Oregon	Wood Residue	5.50		Lane	OR
University of Washington	Natural Gas	5.00		King	WA
Upper Baker	Hydro	90.70	1959		WA
Upper Falls	Hydro	10.00	1922		WA
Upper Indian Creek	Hydro	0.10	1984	Union	OR
Upper Little Sheep Creek	Hydro	4.30	1984	Wallowa	OR
Upper Malad	Hydro	7.20	1948	Gooding	ID
Upper Salmon 1 & 2 (A)	Hydro	18.00	1937	Twin Falls	ID
Upper Salmon 3 & 4 (B)	Hydro	16.56	1947	Twin Falls	ID
Upriver Dam A & B	Hydro	14.55	1983		WA
Vaagen Brothers Lumber	Wood Residue	4.00	1980	Stevens	WA
Valmy 1	Coal	254.00	1981	Humboldt	NV
Valmy 2	Coal	267.00	1985	Humboldt	NV
Vansycle Wind Energy Project	Wind	24.90	1998	Umatilla	OR
W. I. Forest Products	Wood Residue	2.40		Chelan	WA
Wah Chang	Natural gas	14.00	2001	Linn	OR
Wallowa Falls	Hydro	1.10	1921	Wallowa	OR
Walterville	Hydro	8.00	1911	Lane	OR
Wanapum	Hydro	900.00	1963	Grant	WA
Wapato Drop 2	Hydro	2.00	1942	Yakima	WA
Wapato Drop 3	Hydro	1.40	1932	Yakima	WA
Warm Springs Forest Products	Wood Residue	9.00	1960	Wasco	OR

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Project	Resource Type	Installed Capacity (MW)	Service Date	County	State
Washington State University	Coal	2.50		Whitman	WA
Water Street	Hydro	0.16	1985	Marion	OR
Weeks Falls	Hydro	5.26	1985	King	WA
Wells	Hydro	774.30	1967	Douglas	WA
West Boise Wastewater	Wastewater Gas	0.18	1991	Ada	ID
West Linn	Hydro	3.60		Clackamas	OR
West Linn Paper Co.	Natural Gas			Clackamas	OR
West Point Treatment Plant 1-3	Wastewater Gas	3.90	1982	King	WA
West Side	Hydro	0.60	1908	Klamath	OR
Weyerhaeuser – North Bend	Wood Residue	4.00		Lane	OR
Weyerhaeuser (Everett)	Black Liquor	12.50		Snohomish	WA
Weyerhaeuser (Longview) 2	Black Liquor	5.00	1948	Cowlitz	WA
Weyerhaeuser (Longview) 4	Black Liquor	15.00	1954	Cowlitz	WA
Weyerhaeuser (Longview) 5	Coal	31.40	1976	Cowlitz	WA
Weyerhaeuser – Cottege Grove	Wood Residue	4.00		Lane	OR
Weyerhaeuser (Cosmopolis) 1	Fuel Oil	7.50	1957	Grays Harbor	WA
Weyerhaeuser (Cosmopolis) 2	Fuel Oil	7.50	1957	Grays Harbor	WA
Weyerhaeuser (Springfield) 1	Black Liquor	7.50		Lane	OR
Weyerhaeuser (Springfield) 2	Black Liquor	5.00	1949	Lane	OR
Weyerhaeuser (Springfield) 3	Black Liquor	12.50	1953	Lane	OR
Weyerhaeuser (Springfield) 4 (WEYCO)	Black Liquor	51.20	1975	Lane	OR
Whatcom Co. MSW	MSW	2.00	1986	Whatcom	WA
White Ranch	Hydro	0.28	1986	Twin Falls	ID
White River	Hydro	70.00	1912	Pierce	WA
White Water Ranch A	Hydro	0.03	1985	Gooding	ID
White Water Ranch C	Hydro	0.10	1985	Gooding	ID
Whitefish	Hydro	0.19	1985	Flathead	MT
Willamette Industries – Albany GT	Natural Gas	51.00	1995	Linn	OR
Willamette Industries – Albany ST	Natural Gas	45.00	2000	Linn	OR
Willamette Industries – Dallas	Wood Residue	4.50		Polk	OR
Willamette Industries – Foster	Wood Residue	4.50		Linn	OR
Willamette Industries – Sweet Home	Wood Residue	6.00		Linn	OR
Willamette Steam 2 & 3	Natural Gas	25.00	1960	Lane	OR
Willow Lake Wastewater	Wastewater Gas	0.83		Marion	OR
Wilson Lake	Hydro	8.40	1993	Jerome	ID
Winchester	Hydro	1.30	1983		OR
Wisconsin-Noble	Hydro	0.45	1989	Madison	MT
Wolf Creek	Hydro	0.12	1987	Washington	OR
Wood River	Natural Gas	50.00	1974	Blaine	ID
Woods Creek	Hydro	0.65	1982	Snohomish	WA
WTD Industries	Wood Residue	6.00		Klamath	OR
Wynoochee	Hydro	12.80	1993	Grays Harbor	WA
Y-8 (Northside Canal)	Hydro	0.08	1983	Gooding	ID
Yale	Hydro	134.00	1953	Clark	WA
Yellowtail	Hydro	250.00	1966	Big Horn	MT
Yelm	Hydro	12.00	1930	Thurston	WA

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Project	Resource Type	Installed Capacity (MW)	Service Date	County	State
Canada					Province
Aberfeldie	Hydro	5.00	1922		BC
Akolkolex	Hydro	10.00	1995		BC
Bonnington Falls	Hydro	16.00			BC
Brilliant	Hydro	129.00	1944		BC
Corra Linn	Hydro	45.00	1932		BC
Duncan	Hydro	0.00	1967		BC
Elko	Hydro	12.00	1924		BC
Hugh Keenleyside	Hydro	0.00	1968		BC
Kootenay Canal	Hydro	559.00	1976		BC
Lower Bonnington	Hydro	42.00	1897		BC
Mica	Hydro	1792.00	1977		BC
Revelstoke	Hydro	1980.00	1984		BC
Seven Mile	Hydro	594.00	1979		BC
South Slocan	Hydro	55.00	1928		BC
Spillimacheen	Hydro	4.00	1955		BC
Upper Bonnington	Hydro	59.00	1905		BC
Walter Hardman (Coursier)	Hydro	8.00			BC
Waneta	Hydro	386.00	1954		BC
Whatshan	Hydro	54.00	1972		BC

NOTES FOR PROJECT DATABASE

- Table does not include facilities operating on temporary permits.
- Table excludes projects of less than 100 kW capacity.
- Except as indicated, the operating status and installed capacity of hydropower facilities are from NWHS, June 2000.
- Average energy values for Independent Hydro projects are omitted until 2000 NRF values can be confirmed.
- Average energy values and peak capacity of Main and Independent Hydro projects is from PNUCC 2000 NRF, except as indicated (values are reported in the NRF to the nearest megawatt).
- Average energy is given for hydro, wind and non-dispatchable biomass projects where available. Energy production for thermal projects is a function of fuel and market prices.

Table B: Potential/Construction Generating Project Activity in the Pacific Northwest
(Primarily based on Northwest Power Planning Council June 2002 data)

Project	Installed Capacity (MW)	County	State
Natural Gas			
Basin Creek	130.0	Silver Bow	MT
Black Hills	80.0	Hill	MT
COB Energy Facility (CC Config.)	1150.8	Klamath	OR
COB Energy Facility (SC Config.)	598.4	Klamath	OR
Coburg	605.0	Lane	OR
Columbia River Energy	42.7	Columbia	OR
Frederickson Power 2	280.0	Pierce	WA
Grays Harbor Energy Facility (Phase II)	650.0	Grays Harbor	WA
Montana First Megawatts	240.0	Cascade	MT
Morrow Generating Project	550.0	Morrow	OR
Rathdrum CC Conversion	90.0	Kootenai	ID
SP Newsprint	88.0	Yamhill	OR
Tesoro (Perm Ics)	19.0	Skagit	WA
Turner Energy Center	561.0	Marion	OR

Natural Gas Total 5084.9

Other Thermal Resources			
Comanche Park (Coal)	200.0	Yellowstone	MT
U.S. Electric Cherry Point (Coal)	349.0	Whatcom	WA

Other Thermal Resources Total 549.0

Renewables – Wind, Biomass, Geothermal, Wave Energy			
Aqua Energy (Wave Energy)	1.0	Clallum	WA
Cedar Hills (Biomass)	24.0	King	WA
Coffin Butte Expansion (Biomass)	2.5	Benton	OR
Columbia Wind Ranch (Wind)	80.0	Klickitat	WA
Colville Veneer Plant (Biomass)	12.5	Grant	WA
Combine Hills (Wind)	104.0	Walla Walla	WA
Fourmile Hill (Geothermal)	50.0	Siskiyou	CA
Hopkins Ridge (Wind)	60.0		
Kittitas Valley (Wind)	250.0	Kittitas	WA
Klondike Phase 3 (Wind)	50.0	Sherman	OR
Maiden Wind Farm (Wind)	175.0	Benton/Yakima	WA
Northwest Geothermal Co. (Geothermal)	30.0	Deschutes	OR
Roosevelt (Wind)	150.0	Klickitat	WA
Stateline Expansion (Wind)	100.0	Umatilla/Walla Walla	OR/WA
Summit Ridge (Wind)	50.0	Wasco	OR
Telephone Flat (Geothermal)	50.0	Siskiyou	CA

Fish and Wildlife Implementation Plan EIS
Appendix E: Regional Energy Generation Resources

Project	Installed Capacity (MW)	County	State
Tillamook Ridge (Wind)	104.0	Tillamook	OR
Zintel Canyon (Wind)	48.1	Benton	WA

Renewables Total 1341.1

Hydro Power			
A-Drop	1.3	Teton	MT
Agency Valley Dam	2.0	Malheur	OR
Applegate	12.0	Jackson	OR
Big Creek	10.0	Custer	ID
Blackfoot Dam	3.0	Caribou	ID
Bliss-Gooding Highway	0.5	Gooding	ID
Byram	0.7	Gooding	ID
Chester Diversion	3.0	Fremont	ID
City of Twin Falls	43.6	Twin Falls	ID
Como Dam	1.8	Ravalli	MT
Condit	14.7	Klickitat	WA
Dorena Lake Dam	4.0	Lane	OR
Earthquake Lake	14.0	Madison	MT
East Fork Ditch	2.5	Adams	ID
Easton Diversion	3.0	Kittitas	WA
Emigrant Creek	0.9	Jackson	OR
Flint Creek	1.1	Granite	MT
Grand Coulee 1-18 Runner Repl.	0.0	Grant/Okanogan	WA
Greenfield	0.8	Teton	MT
Hebgen Dam	7.0	Gallatin	MT
Johnson	1.0	Cascade	MT
Kachess	3.2	Kittitas	WA
Knights	1.3	Teton	MT
Leishman Drop	1.4	Glacier	MT
Lower Baker Runner Replacement	2.0	Skagit	WA
Lower Rocky Creek	1.0		WA
Lower Turnbull	6.0	Teton	MT
MacKay Dam	3.0	Custer	ID
Malad High Drop	4.5	Gooding	ID
Mary Taylor	1.3	Teton	MT
May Creek	15.0	Snohomish	WA
Mill Coulee Lower	0.4	Cascade	MT
Mill Coulee Upper	1.0	Cascade	MT
Priest Rapids Pool Raise	10.0		WA
Ririe Dam	2.2	Bonneville	ID
River Side	4.9	Twin Falls	ID
Rock Island (New Turbines)	43.5	Chelan	WA
Rocky Reach Powerhouse Rehabilitation	27.4	Chelan	WA
Savage Rapids	6.0	Josephine	OR

Fish and Wildlife Implementation Plan EIS
Appendix E: Regional Energy Generation Resources

Project	Installed Capacity (MW)	County	State
Stayton	0.8	Marion	OR
Sun River Diversion	5.5	Teton	MT
Thief Valley	0.9	Union	OR
Tongue River	4.6	Big Horn	MT
Unity Dam	4.0	Baker	OR
Upper Turnbull	4.0	Teton	MT
Warm Springs Dam	3.0	Malheur	OR
Willow Creek Reservoir	2.0	Lewis & Calrk	MT
Woods	1.3	Teton	MT
Y Canal	1.4	Gooding	ID
Hydropower Total	288.5		

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Appendix F
Testimony to the Committee on
Energy & Natural Resources,
United States Senate
(Global Warming and Ocean Conditions)

Appendix F

TESTIMONY TO THE COMMITTEE ON ENERGY & NATURAL RESOURCES, UNITED STATES SENATE

Written Submission by

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Nanaimo, British Columbia Canada
1999**

Introduction

Chairman Smith, honourable members of the Committee, it is an honour to be invited to present testimony before you.

I have been studying the biology of Pacific salmon in the ocean since 1990, when I started the High Seas Salmon research program for the Canadian Government. Most of my research has occurred in that vast arc that stretches from southern British Columbia to the Aleutian archipelago of Alaska, and offshore. Our studies demonstrate that this region forms a narrow coastal corridor through which most of the young salmon from the west coast of both Canada and the United States migrate.

As a result of this research, we have found a number of disturbing changes taking place in the ecosystem of the Northeast Pacific Ocean. I believe that several of these new findings highlight to a much greater degree than previously believed the importance of the ocean to determining the productivity and sustainability of salmon on the West Coast of North America. These results are of equal interest to the people of Canada and the United States. My research, and that of my Canadian colleagues, shows that large numbers of Washington and Oregon salmon, including threatened stocks such as the Snake River chinook, also move into the waters of coastal British Columbia.

I must preface my comments by emphasising that salmon are unique animals, and spend time in both freshwater and ocean environments in order to complete their life cycle. Because this cycle must be completed to perpetuate the species, disruption at any point in the life cycle can reduce the productivity of salmon stocks. I would like to stress at the outset that although our research is pointing towards a greater overall influence of the ocean on salmon survival than freshwater, nothing in what we have found should be taken to mean that the freshwater habitat is unimportant. Rather, in this period of massive reductions in ocean survival, the importance of preserving and rehabilitating

damage to the freshwater habitat is even more essential. However, I also believe that failure to understand and address the enormous changes confronting us in the ocean will cost us far more in terms of remedial and sometimes misdirected efforts than would a direct effort to evaluate the causes of these changes.

Changes in Ocean Survival

There has been a widespread assumption that because the ocean is large it is a more stable habitat for salmon than the freshwater environment. Thus when salmon production drops, it has generally been assumed to be because of degradation of the freshwater habitat. Most regulations aimed at protecting or improving freshwater habitat have made the assumption that when something bad happens to salmon production it has a freshwater cause. Almost all biological research on salmon has also focussed on the freshwater phase of the life cycle.

We now know that the assumption that the ocean is a relatively benign and unchanging habitat for salmon is untrue. Enormous reductions in ocean survival of many species of Pacific salmon have occurred. In Oregon, marine survival of coho salmon (exclusive of fishing effects) has dropped to only 1/10th of the level experienced only 2 decades ago. Beginning around the start of this decade, the ocean survival of many stocks of British Columbia salmon also began to fall, sharply reducing overall abundance and pushing several stocks of coho close to extinction. Most recently, changes in the ocean survival of Alaskan salmon have sharply reduced catch levels, causing severe economic dislocation in Alaska as well.

In each region, the primary cause of the sharp declines has been a change in ocean survival. A key issue hampering informed debate of what has been developing has been a lack of several types of monitoring. Monitoring is necessary in order to allow clear separation of freshwater from marine survival events on salmon productivity. Monitoring and focussed ocean research are also necessary to allow us to understand what the processes are that are causing these enormous reductions in the quality of the ocean habitat for salmon. For example, we know that plankton quadrupled in abundance between the 1960s and 1980s in the northern Gulf of Alaska, a time of rapid increase in Alaskan and British Columbia salmon populations. However, we do not know now whether or not the plankton has changed again in the 1990s, although the climate certainly has.

There is a lack of understanding of how much and how quickly the oceans have already changed and, as yet, little scientific basis to determine how much more the ocean conditions affecting salmon survival may deteriorate. In my view, it is critical to establish the relative impact of freshwater and ocean changes on determining the health of salmon populations and an improved understanding of the underlying causes of poorer ocean survival as quickly as possible. Our lack of understanding is hampering the development of a broader perspective and an informed debate over how best to manage salmon populations, and what the importance of ocean changes to current salmon problems is.

If I were to tell you that only 1 stream in 10 was still producing salmon after two decades, I am certain that there would be an immediate demand to determine why such enormous changes could happen so rapidly, and what the consequences would be for our ability to manage these resources. Yet these changes have happened in the ocean, but it has only been with considerable difficulty that we have been able to address what has happened. Part of the difficulty has been a general scepticism that we can successfully work in the ocean—it has been assumed that it is too large to permit research efforts from being successful, and that somehow, the size of the ocean confers stability. Neither is true.

To put these changes in perspective, the changes in ocean habitat are now only returning 1 adult for every 10 that would have returned in earlier, more productive, times. Yet large-scale commercial fisheries typically harvest about 70% of the returning adults, taking 2 out of 3 returning adults. The rapid changes in ocean climate are clearly capable of wiping out the ability to have a commercial fishery in the space of only a few years, making formerly productive self-sustaining populations no longer viable even in the absence of exploitation. These are massive changes.

Changes in Nutrients

The work of my colleagues and myself at sea indicates that there are massive changes occurring in the north-eastern Pacific. Perhaps most important, there are dramatic changes in the ocean ecosystem as a result of nutrient depletion in the 1990s. This is apparently the result of a "sealing off" of the nutrient-rich deep ocean from the surface layer where most biological activity occurs.

In simplest terms, the ocean is composed of two layers. The deep layer is rich in nutrients, but has no light. Plants cannot grow. Above the deep ocean lies the sunlit surface layer. Here plants grow until they use up the nutrient. The surface layer is warmer and less salty (because of freshwater coming from rainfall, river run-off, and snow melt). It floats over the deep ocean. In the 1990s we have seen an unprecedented shutdown in the food chain supporting fish, because changes in the climate seem to be sealing off the surface layer from the deep ocean nutrient reservoir.

Plants need light and nutrients to fuel the bottom of the food chain, whether on land or in the ocean. In the early 1990s nitrate (an essential plant nutrient) began to be completely used up by the end of summer in the surface layer, something never before observed in the Eastern Pacific. My Canadian colleague Frank Whitney who identified this change estimated in a recent paper that new biological production was reduced by 40% in 1994 relative to what was possible in the 1980s.

More recent declines in nutrient availability are even more worrisome. Nitrate disappeared from the surface waters off Vancouver Island in early spring of 1998, and did not reappear for the remainder of the summer growing season. The research surveys I collected nutrient data on also found no measurable nitrate in mid-summer for most of the surface waters stretching from northern Vancouver Island all the way along the coast of North America to the Aleutian Islands in 1997 and 1998. Nitrate was absent in a band

stretching out to sea for at least 100 miles from shore. This is precisely the habitat used by young salmon in the first stage of their ocean migration.

Unfortunately, there was essentially no ocean monitoring in Alaska or northern British Columbia waters prior to our surveys. As a result, the only area where we are completely certain that the disappearance of this essential nutrient is a new phenomenon is the ocean waters off southern British Columbia, because of a long-standing monitoring effort by the Canadian government in this region. Without sustained monitoring over a number of years it is impossible to be certain how widespread the surprising findings off Vancouver Island extend, and the extent that they are caused by the rapidly changing climatic conditions being experienced in the 1990s.

Migration of Young Salmon

After entry into the ocean, our surveys show that most young Pacific salmon move rapidly north along the coast and out beyond the Aleutians—much farther than had previously been thought. However, we also know that significant numbers of coho and chinook remain in southern regions, and feed year-round in the coastal waters off the west coast of Vancouver Island.

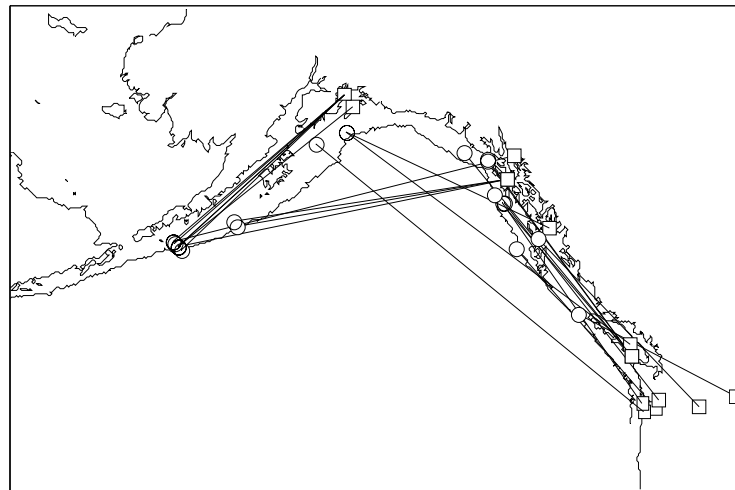


Fig. 1. Long-distance recoveries of PIT-tagged or CWT tagged chinook and coho salmon (circles). The southernmost release points (squares) are of Columbia River fish recovered in British Columbia or Alaskan coastal waters. All of these juvenile salmon were recovered in their first summer or fall of ocean life far from the Columbia River.

We also found from our ocean surveys in 1998 that during the first week of June, CWT and PIT tagged chinook and coho salmon from the Columbia River were caught off northern

Vancouver Island (see Figure 1). Based on their release times in freshwater, these salmon moved rapidly along the continental shelf from Oregon up into central British Columbia waters. Continuous movements of greater than 200% of "normal" swimming speeds were necessary to have covered the distance from release to the B.C. recovery sites. Thus a very substantial component of Columbia River chinook and coho stocks move rapidly out of the Columbia River plume into Canadian waters, and are therefore exposed to the poor ocean conditions we have found farther north.

My 1998 surveys demonstrated that by the end of August, no juvenile salmon remained in waters off central and northern British Columbia, confirming evidence from my three years of earlier work of the rapid migration north and along the shelf. Based on our collected evidence we know that these animals continued to move north and west to the

Aleutian Islands by the beginning of December without leaving the continental shelf. However, we also demonstrated from the 1998 work that there were substantial stocks of coho and chinook salmon still present in southern British Columbia coastal waters much later in the autumn. Based on CWT returns from winter fisheries formerly operating in the area, these salmon are known to be from southern British Columbia and Oregon-Washington stocks that overwinter off Vancouver Island, and include such endangered stocks as the Snake River chinook.

Causes for Reduced Ocean Survival

Our 1998 surveys indicate that the growth and general condition of the chinook and coho salmon stocks found in the coastal waters of southern British Columbia is greatly reduced compared to that of the salmon feeding farther to the north. They are stunted in size and also have lower fat reserves to carry them through the winter months. Our preliminary analysis is that there may be up to a 7-fold difference in survival between those stocks that stay to feed in southern regions of British Columbia waters relative to those that migrate further north. Thus these differences in growth, which are probably related to the disappearance of a critical nutrient from the surface waters, appear to be capable of explaining most of the reduced ocean survival of Columbia River and southern British Columbia chinook and coho salmon stocks.

Global Warming and Climate Change

Our open ocean salmon research, conducted from 1990-95, also indicates that salmon are headed for trouble in the long term because of global warming. We have found that all species of Pacific salmon have extremely sharp limits to where they will go in the ocean.

These limits are determined by ocean temperature. Increases in sea temperature increase metabolic rates in salmon. This causes them to use more energy. We suspect that the temperature limits that we have found occur because they mark the boundary in the sea where energy demands exceed the energy gained from feeding, so that they cannot grow. Again, as with our coastal work on the survival of young salmon, growth is implicated in important aspects of their offshore biology as well.

The amount of warming projected to occur over the next 50 years because of increased greenhouse gases is sobering. The projected warming is sufficient to move the temperature limits determining where salmon may successfully grow entirely out of the Pacific Ocean and well up into the Bering Sea (*Figure 2*). Thus there is reason to believe that several species of Pacific salmon may no longer forage successfully in the Pacific Ocean within our lifetimes if greenhouse gases continue to increase at their present rate.

Because salmon home to the river of their birth with great fidelity, it is unlikely that salmon from the Pacific Northwest will suddenly move elsewhere to reproduce. The great preponderance of scientific evidence indicates that the world will warm by about 5°F over the next 60 years because of global warming. Although there are questions about the timing and rapidity of the increase in warming, it is virtually certain that salmon

will find themselves migrating back through larger areas of the Gulf of Alaska that will no longer support growth. As a result, it is likely that they will return to their streams much smaller, with fewer eggs, and lower energy reserves to fuel the upriver migration. This will further complicate attempts to compensate for the reduced ocean survival that we are seeing.

The effects of the 1997 El Nino, which warmed the Pacific by about 5°F, are a case in point. Sockeye returning to the Fraser River in southern British Columbia were amongst the smallest on record, and had 20% lower energy reserves. Mortality of adult salmon within the river, also warmed by the El Nino, reached 76% for one stock, and neared 50% for other important runs. Thus I can tell you with some confidence that warming of the climate does not bode well for many of the salmon resources of Canada or the United States.

These are important public policy questions that need to be addressed. Ironically, it is unclear to me at this point whether or not the survival of salmon might be more impacted over the long term by the disruptions caused by dams in-river or by the added warming that would result from replacing this needed hydropower with coal-fired generating plants. However, it is clear that if events occurring in the ocean go unheeded and unstudied, then all of the blame will be mistakenly placed on failure of our efforts to redress freshwater habitat problems.

Conclusions

Mr Chairman, as I indicated at the outset, the enormous changes in ocean survival do not mean that efforts to protect and rehabilitate freshwater habitat for salmon should either be abandoned or lessened. However, it is my professional opinion that the declines in marine survival observed over the last two decades have been at least as large as the changes in freshwater survival. They may even be larger. Failure to recognize that these

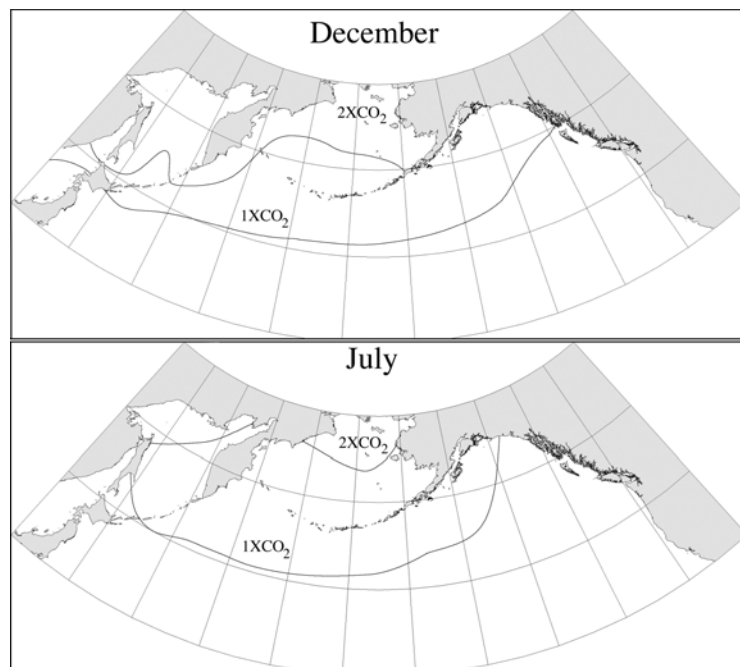


Fig. 2. The likely future distribution of sockeye salmon if global warming projections prove accurate. The current winter and summer distribution (1xCO₂) is compared with the projected position in 60 years (when CO₂ levels are projected to double). Results are similar for other species of salmon. We believe that the area vacated will not be able to support salmon growth.

changes in the ocean are occurring and to establish why they may compromise our ability to assess rehabilitation efforts and protect freshwater habitat for salmon.

For these reasons I stress that the salmon life cycle needs to be maintained everywhere. This means preserving freshwater habitat as well as recognizing the importance of the oceans to the health of salmon stocks. However, the changes in marine survival are very alarming. They have occurred extremely rapidly, and swiftly made formerly healthy populations unsustainable even with the termination of all fisheries. These are sobering changes. As I have indicated in my testimony, they indicate the importance of the oceans to determining the overall health of these populations, and the ability of changes in ocean climate to compromise otherwise well-intentioned efforts at restoration.

The work in Canada is showing that the changes in climate are sealing off the surface layer from the nutrients in the deep ocean. My colleagues and I believe that underlying the climatic changes affecting salmon in the 1990s is the warming and freshening of the surface layer, which is cutting off the nutrients needed by the plants to fuel the food chain. It is early days yet, but we are finding that nutrient depletion and declining salmon survival seem to be related to increases in freshwater input and higher sea temperatures.

Although we do not possess the ability to deliberately "fix" the changes in the ocean that we are documenting, the success of our research program demonstrates that it is possible to quickly learn a great deal about what is occurring within the ocean to salmon. Salmon do not heed political boundaries. I would urge you to support the monitoring and scientific research needed on both sides of our border to understand what is happening now in the ocean. We need to develop this information now to better inform the public policy debate concerning these important west coast resources, and to correctly identify and evaluate where the troubling problems that we are grappling with have their source.

Finally, I believe that we need this information because the enormous changes in our Pacific salmon stocks in the 1990s are, in my view, a harbinger of what is likely to come. The best scientific evidence is that global warming will begin to change the climate of the Pacific Northwest. It is my personal opinion that the effects of global warming are behind the massive shifts in the ocean ecosystem structure that we are already seeing in the 1990s, and which seem to be causing such profound disruptions to the marine phase of the salmon's life cycle. Even if the recent changes are due to other climatic fluctuations, they are having very similar effects to what mild global warming is likely to do.

These climatic effects are probably going to compound in future. Without sound scientific understanding of what is now happening in the oceans to complement the excellent scientific work in freshwater, public policy decisions on both sides of the border may be compromised. Costly mistakes are likely. I can advise you that in my view it is critical that we develop a better ability to monitor the oceans, and document and evaluate the changes now underway for salmon. It is equally important that support be marshalled for focussed ocean research surveys to rigorously establish the reasons the salmon are dying. Ignorance, whether deliberate or unintentional, is a costly alternative.

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Appendix G
Hatcheries of the Pacific Northwest

Appendix G

HATCHERIES OF THE PACIFIC NORTHWEST (2/2001)

Hatchery	Type	Agency	BPA Funds	Columbia Basin	State	Subbasin
Abernathy Salmon Culture Tech Center	Anadromous	US Fish and Wildlife Service – Portland Region	Minor	Yes	WA	Elochoman
Alder Creek Pond	Unknown / Unspecified	Washington Department of Fish & Wildlife		Yes	WA	Cowlitz
Alsea Hatchery	Mixed Anadromous / Resident Fish	Oregon Department of Fish & Wildlife- Hq		No	OR	N Oregon Coast
American Falls Hatchery	Resident Fish	Idaho Department of Fish & Game		Yes	ID	Upper Snake
Arlington	Anadromous	Washington Department of Fish & Wildlife		No	WA	Puget Sound Basin
Ashton Hatchery	Resident Fish	Idaho Department of Fish & Game		Yes	ID	Upper Snake
Aumsville Ponds	Anadromous	Oregon Department of Fish & Wildlife- Hq		Yes	OR	Willamette
Baker Lake Spawn Beach	Unknown / Unspecified	Washington Department of Fish & Wildlife		No	WA	Puget Sound Basin
Bandon Fish Hatchery	Anadromous	Oregon Department of Fish & Wildlife- Hq		No	OR	S Oregon Coast
Barnaby Slough Pond	Anadromous	Washington Department of Fish & Wildlife		No	WA	Puget Sound Basin
Barnhart Acclimation/ Release Site	Anadromous	Umatilla Confederated Tribes	Major	No	OR	Umatilla
Beaver Creek Hatchery	Anadromous	Washington Department of Fish & Wildlife		Yes	WA	Elochoman
Beaver Slough Rearing Ponds	Anadromous	Washington Department of Fish & Wildlife		Yes	WA	Cowlitz
Bellingham	Anadromous	Washington Department of Fish & Wildlife		No	WA	Puget Sound Basin
Big Beef Creek Hatchery / Field Station	Anadromous	National Marine Fisheries Service – Seattle Office	Minor	No	WA	Puget Sound Basin
Big Canyon Acclimation Facility	Anadromous	Nez Perce Tribe	Major	Yes	ID	Clearwater
Big Canyon Satellite Facility	Anadromous	Oregon Department of Fish & Wildlife- Hq	Major	Yes	OR	Grande Ronde
Big Creek Hatchery	Anadromous	Oregon Department of Fish & Wildlife- Hq	Minor	Yes	OR	Columbia Estuary /Ocean
Big White Salmon Rearing Pond	Anadromous	Washington Department of Fish & Wildlife	Minor	Yes	WA	White Salmon
Bingham Creek Hatchery	Anadromous	Washington Department of Fish & Wildlife		No	WA	Washington Coast
Bogachiel	Anadromous	Washington Department of Fish & Wildlife		No	WA	Washington Coast
Bonifer Acclimation Ponds	Anadromous	Umatilla Confederated Tribes	Major	Yes	OR	Umatilla
Bonneville Hatchery	Mixed Anadromous / Resident Fish	Oregon Department of Fish & Wildlife- Hq	Minor	Yes	OR	Lower Columbia
Butte Falls Hatchery	Anadromous	Oregon Department of Fish & Wildlife- Hq		No	OR	S Oregon Coast
Cabinet Gorge Hatchery	Resident Fish	Idaho Department of Fish & Game	Major	Yes	ID	Clark Fork

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Hatchery	Type	Agency	BPA Funds	Columbia Basin	State	Subbasin
Captain John Rapids Acclimation Facility	Anadromous	Nez Perce Tribe	Major	Yes	ID	Snake Hells Canyon
Carson National Fish Hatchery	Anadromous	US Fish and Wildlife Service – Portland Region	Minor	Yes	WA	Wind
Cascade Hatchery	Anadromous	Oregon Department of Fish & Wildlife- Hq	Minor	Yes	OR	Columbia Gorge
Catherine Creek Acclimation Site	Anadromous	Umatilla Confederated Tribes	Major	Yes	OR	Grande Ronde
Catherine Creek Trap	Anadromous	Umatilla Confederated Tribes	Major	Yes	OR	Grande Ronde
Cedar Creek Hatchery	Mixed Anadromous / Resident Fish	Oregon Department of Fish & Wildlife- Hq		No	OR	N Oregon Coast
Cedar Flats Acclimation Facility	Anadromous	Nez Perce Tribe	Major	Yes	ID	Clearwater
Cedar River	Anadromous	Washington Department of Fish & Wildlife		No	WA	Puget Sound Basin
Chambers Creek	Anadromous	Washington Department of Fish & Wildlife		No	WA	Puget Sound Basin
Chandler Juvenile Facility	Anadromous	Yakama Nation	Major	Yes	WA	Yakima
Cherrylane Tribal Hatchery	Anadromous	Nez Perce Tribe	Major	Yes	ID	Clearwater
Chewach Trap & Pond	Anadromous	Washington Department of Fish & Wildlife		Yes	WA	Methow
Chiwawa Rearing Pond	Anadromous	Washington Department of Fish & Wildlife		Yes	WA	Wenatchee
Clackamas Hatchery	Anadromous	Oregon Department of Fish & Wildlife- Hq	Minor	Yes	OR	Willamette
Clark Flat Acclimation Site	Anadromous	Yakama Nation	Major	Yes	WA	Yakima
Clark Fork Hatchery	Resident Fish	Idaho Department of Fish & Game		Yes	ID	Clark Fork
Clatsop (Cede) Ponds	Anadromous	Clatsop Economic Development Committee	Minor	Yes	OR	Youngs
Clearwater Hatchery	Mixed Anadromous / Resident Fish	Idaho Department of Fish & Game	Minor	Yes	ID	Clearwater
Coeur d’Alene Trout Hatchery	Resident Fish	Coeur d’Alene Tribe of Idaho	Major	Yes	ID	Coeur d’Alene
Cole M. Rivers Hatchery	Mixed Anadromous / Resident Fish	Oregon Department of Fish & Wildlife- Hq		No	OR	S Oregon Coast
Columbia Basin Hatchery	Resident Fish	Washington Department of Fish & Wildlife		Yes	WA	Crab Creek
Colville Hatchery	Resident Fish	Washington Department of Fish & Wildlife		Yes	WA	Upper Columbia
Colville Tribal Hatchery	Resident Fish	Colville Confederated Tribes	Major	Yes	WA	Upper Columbia
Corporation Direct Release Site	Anadromous	Umatilla Confederated Tribes	Major	Yes	OR	Umatilla
Cottonwood Satellite Facility	Anadromous	Washington Department of Fish & Wildlife		Yes	WA	Grande Ronde
Coulter Creek	Anadromous	Washington Department of Fish & Wildlife		No	WA	Puget Sound Basin
Coweeman Ponds	Unknown / Unspecified	Washington Department of Fish & Wildlife		Yes	WA	Cowlitz
Cowlitz Salmon Hatchery	Anadromous	Washington Department of Fish & Wildlife	Minor	Yes	WA	Cowlitz
Cowlitz Trout Hatchery	Resident Fish	Washington Department of Fish & Wildlife		Yes	WA	Cowlitz
Creston National Fish Hatchery	Resident Fish	US Fish and Wildlife Service – Portland Region	Major	Yes	MT	Flathead
Crooked River Satellite Facility	Anadromous	Idaho Department of Fish & Game	Major	Yes	ID	Clearwater
Curl Lake Satellite Facility	Anadromous	Washington Department of Fish & Wildlife	Major	Yes	WA	Lower Snake

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Hatchery	Type	Agency	BPA Funds	Columbia Basin	State	Subbasin
Dayton Pond Satellite Facility	Anadromous	Washington Department of Fish & Wildlife	Major	Yes	WA	Walla Walla
Dexter Pond	Anadromous	Oregon Department of Fish & Wildlife- Hq	Minor	Yes	OR	Willamette
Dryden Pond	Anadromous	Washington Department of Fish & Wildlife		Yes	WA	Wenatchee
Dungeness	Anadromous	Washington Department of Fish & Wildlife		No	WA	Puget Sound Basin
Dworshak National Fish Hatchery	Anadromous	US Fish and Wildlife Service – Portland Region	Minor	Yes	ID	Clearwater
Eagle Creek National Fish Hatchery	Anadromous	US Fish and Wildlife Service – Portland Region	Minor	Yes	OR	Willamette
Eagle Fish Health Laboratory	Anadromous	Idaho Department of Fish & Game	Major	Yes	ID	Boise
East Fork Salmon River Satellite Facility	Anadromous	Idaho Department of Fish & Game	Major	Yes	ID	Salmon
Eastbank Hatchery	Mixed Anadromous / Resident Fish	Washington Department of Fish & Wildlife	Minor	Yes	WA	Upper Mid-Columbia
Easton Acclimation Site	Anadromous	Yakama Nation	Major	Yes	WA	Yakima
Eells Spring	Anadromous	Washington Department of Fish & Wildlife		No	WA	Puget Sound Basin
Elk River Hatchery	Anadromous	Oregon Department of Fish & Wildlife- Hq		No	OR	S Oregon Coast
Elochoman Hatchery	Anadromous	Washington Department of Fish & Wildlife	Minor	Yes	WA	Elochoman
Elwha Channel	Anadromous	Washington Department of Fish & Wildlife		No	WA	Puget Sound Basin
Entiat National Fish Hatchery	Anadromous	US Fish and Wildlife Service – Portland Region	Minor	Yes	WA	Entiat
Fall Creek Hatchery	Anadromous	Oregon Department of Fish & Wildlife- Hq		No	OR	N Oregon Coast
Fall River Hatchery	Resident Fish	Oregon Department of Fish & Wildlife- Hq		Yes	OR	Deschutes
Fallert Creek Hatchery	Anadromous	Washington Department of Fish & Wildlife		Yes	WA	Kalama
Flathead Lake Salmon Hatchery	Resident Fish	Montana Dept. of Fish & Wildlife – Helena		Yes	MT	Flathead
Ford Trout Hatchery	Resident Fish	Washington Department of Fish & Wildlife		Yes	WA	Spokane Lower
Forks Creek Hatchery	Resident Fish	Washington Department of Fish & Wildlife		No	WA	Washington Coast
Fox Island Pens	Anadromous	Washington Department of Fish & Wildlife		No	WA	Puget Sound Basin
Fred Grey Pond	Anadromous	Umatilla Confederated Tribes	Major	Yes	OR	Umatilla
Garrison	Anadromous	Washington Department of Fish & Wildlife		No	WA	Puget Sound Basin
George Adams Hatchery	Anadromous	Washington Department of Fish & Wildlife		No	WA	Puget Sound Basin
Gnat Creek Hatchery	Anadromous	Oregon Department of Fish & Wildlife- Hq	Minor	Yes	OR	Columbia Estuary /Ocean
Gobar Pond	Anadromous	Washington Department of Fish & Wildlife		Yes	WA	Kalama
Goldendale Trout Hatchery	Resident Fish	Washington Department of Fish & Wildlife		Yes	WA	Klickitat
Grace Hatchery	Resident Fish	Idaho Department of Fish & Game		Yes	ID	Upper Snake
Grays River Hatchery	Anadromous	Washington Department of Fish & Wildlife		Yes	WA	Grays
Green River Hatchery	Unknown / Unspecified	Washington Department of Fish & Wildlife		No	WA	Puget Sound Basin
Hagerman Hatchery	Resident Fish	Idaho Department of Fish & Game		Yes	ID	Middle Snake

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Hagerman National Fish Hatchery	Mixed Anadromous / Resident Fish	US Fish and Wildlife Service – Portland Region	Minor	Yes	ID	Middle Snake
Hayden Creek Hatchery	Resident Fish	Idaho Department of Fish & Game		Yes	ID	Salmon
Hayspur Hatchery	Resident Fish	Idaho Department of Fish & Game		Yes	ID	Upper Snake
Herman Creek Pond	Anadromous	Oregon Department of Fish & Wildlife- Hq	Minor	Yes	OR	Columbia Gorge
Hoodsport	Anadromous	Washington Department of Fish & Wildlife		No	WA	Puget Sound Basin
Humptulips	Anadromous	Washington Department of Fish & Wildlife		No	WA	Washington Coast
Hungry Horse Hatchery	Resident Fish	Montana Dept. of Fish & Wildlife – Helena		Yes	MT	Flathead
Hupp Spring	Anadromous	Washington Department of Fish & Wildlife		No	WA	Puget Sound Basin
Hurd Creek	Anadromous	Washington Department of Fish & Wildlife		No	WA	Puget Sound Basin
Icy Creek Pond	Unknown / Unspecified	Washington Department of Fish & Wildlife		No	WA	Puget Sound Basin
Imeqes C Mem Ini Kem Juv Acclim Pond	Anadromous	Umatilla Confederated Tribes	Major	Yes	OR	Umatilla
Imnaha Satellite Facility	Anadromous	Oregon Department of Fish & Wildlife- Hq	Major	Yes	OR	Imnaha
Irrigon Hatchery	Mixed Anadromous / Resident Fish	Oregon Department of Fish & Wildlife- Hq	Major	Yes	OR	Lower Mid-Columbia
Issaquah	Unknown / Unspecified	Washington Department of Fish & Wildlife		No	WA	Puget Sound Basin
Jack Creek Acclimation Site	Anadromous	Yakama Nation	Major	Yes	WA	Yakima
Jocko River Trout Hatchery	Resident Fish	Montana Dept. of Fish & Wildlife – Helena		Yes	MT	Flathead
Johnson Creek Hatchery	Anadromous	Nez Perce Tribe	Major	Yes	ID	Salmon
K Basin – Hanford	Anadromous	Yakama Nation	Major	Yes	WA	Lower Mid-Columbia
Kalama Falls Salmon Hatchery	Anadromous	Washington Department of Fish & Wildlife	Minor	Yes	WA	Kalama
Kalispel Tribal Hatchery	Resident Fish	Kalispel Tribe of Indians	Major	Yes	WA	Pend Oreille
Kendall Creek	Unknown / Unspecified	Washington Department of Fish & Wildlife		No	WA	Puget Sound Basin
Klamath Hatchery	Mixed Anadromous / Resident Fish	Oregon Department of Fish & Wildlife- Hq		No	OR	Moyie
Klaskanine Hatchery	Anadromous	Oregon Department of Fish & Wildlife- Hq	Minor	Yes	OR	Columbia Estuary /Ocean
Klickitat Salmon Hatchery	Anadromous	Washington Department of Fish & Wildlife	Minor	Yes	WA	Klickitat
Klickitat Tribal Hatchery	Anadromous	Yakama Nation	Major	Yes	WA	Klickitat
Kooskia National Fish Hatchery	Anadromous	US Fish and Wildlife Service – Portland Region	Minor	Yes	ID	Clearwater
Kootenai Tribal Hatchery	Resident Fish	Kootenai Tribe of Idaho	Major	Yes	ID	Kootenai
Lake Aberdeen	Anadromous	Washington Department of Fish & Wildlife		No	WA	Washington Coast
Lake Wenatchee Net Pens	Anadromous	Washington Department of Fish & Wildlife		Yes	WA	Wenatchee

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Hatchery	Type	Agency	BPA Funds	Columbia Basin	State	Subbasin
Lake Whatcom	Anadromous	Washington Department of Fish & Wildlife		No	WA	Puget Sound Basin
Lakewood	Anadromous	Washington Department of Fish & Wildlife		No	WA	Puget Sound Basin
Leaburg Hatchery	Mixed Anadromous / Resident Fish	Oregon Department of Fish & Wildlife- Hq	Minor	Yes	OR	Willamette
Leavenworth National Fish Hatchery	Anadromous	US Fish and Wildlife Service – Portland Region	Minor	Yes	WA	Wenatchee
Lewis River Hatchery	Anadromous	Washington Department of Fish & Wildlife		Yes	WA	Lewis
Little Sheep Creek Satellite Facility	Anadromous	Oregon Department of Fish & Wildlife- Hq	Major	Yes	OR	Imnaha
Little White Salmon National Fish Hatchery	Anadromous	US Fish and Wildlife Service – Portland Region	Minor	Yes	WA	Little White Salmon
Lookingglass Hatchery	Anadromous	Oregon Department of Fish & Wildlife- Hq	Major	Yes	OR	Grande Ronde
Lostine Acclimation Site	Anadromous	Nez Perce Tribe	Major	Yes	OR	Grande Ronde
Lower Kalama Hatchery	Anadromous	US Fish and Wildlife Service – Portland Region	Minor	Yes	WA	Kalama
Luke's Gulch Acclimation Facility	Anadromous	Nez Perce Tribe	Major	Yes	ID	Clearwater
Lyons Ferry Hatchery	Mixed Anadromous / Resident Fish	Washington Department of Fish & Wildlife	Major	Yes	WA	Lower Snake
Mackay Hatchery	Resident Fish	Idaho Department of Fish & Game		Yes	ID	Upper Snake
Magic Valley Hatchery	Mixed Anadromous / Resident Fish	Idaho Department of Fish & Game	Minor	Yes	ID	Middle Snake
Makah National Fish Hatchery	Anadromous	US Fish and Wildlife Service – Portland Region		No	WA	Washington Coast
Marblemount Hatchery	Anadromous	Washington Department of Fish & Wildlife		No	WA	Puget Sound Basin
Marion Drain Fish Hatchery	Anadromous	Yakama Nation	Major	Yes	WA	Yakima
Marion Forks Hatchery	Mixed Anadromous / Resident Fish	Oregon Department of Fish & Wildlife- Hq	Minor	Yes	OR	Willamette
Mc Call Hatchery	Mixed Anadromous / Resident Fish	Idaho Department of Fish & Game	Major	Yes	ID	Payette
Mcallister	Anadromous	Washington Department of Fish & Wildlife		No	WA	Puget Sound Basin
Mckenzie Hatchery	Anadromous	Oregon Department of Fish & Wildlife- Hq	Minor	Yes	OR	Willamette
Mckernan	Anadromous	Washington Department of Fish & Wildlife		No	WA	Puget Sound Basin
Meadow Creek Adult Trapping Facility	Anadromous	Nez Perce Tribe	Major	Yes	ID	Clearwater
Merwin Hatchery	Mixed Anadromous / Resident Fish	Washington Department of Fish & Wildlife		Yes	WA	Lewis
Merwin Net Pens	Anadromous	Washington Department of Fish & Wildlife		Yes	WA	Lewis
Methow Pond	Anadromous	Washington Department of Fish & Wildlife		Yes	WA	Methow
Methow Salmon Hatchery	Anadromous	Washington Department of Fish & Wildlife		Yes	WA	Methow
Minter Creek Hatchery	Anadromous	Washington Department of Fish & Wildlife		No	WA	Puget Sound Basin
Minthorn Springs Acclimation Pond	Anadromous	Umatilla Confederated Tribes	Major	Yes	OR	Umatilla
Minto Pond	Anadromous	Oregon Department of Fish & Wildlife- Hq		Yes	OR	Willamette

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Hatchery	Type	Agency	BPA Funds	Columbia Basin	State	Subbasin
Mission Juvenile Acclimation Pond	Anadromous	Umatilla Confederated Tribes	Major	Yes	OR	Umatilla
Mossyrock Trout Hatchery	Resident Fish	Washington Department of Fish & Wildlife		Yes	WA	Cowlitz
Mullen Hatchery	Resident Fish	Idaho Department of Fish & Game		Yes	ID	Coeur d'Alene
Murray Springs Trout Hatchery	Resident Fish	Montana Dept. of Fish & Wildlife – Helena		Yes	MT	Kootenai
Naches Hatchery	Mixed Anadromous / Resident Fish	Washington Department of Fish & Wildlife	Minor	Yes	WA	Yakima
Nampa Hatchery	Resident Fish	Idaho Department of Fish & Game		Yes	ID	Middle Snake
Naselle	Anadromous	Washington Department of Fish & Wildlife		No	WA	Washington Coast
Nehalem Hatchery	Anadromous	Oregon Department of Fish & Wildlife- Hq		No	OR	N Oregon Coast
Nelson Springs Raceway	Anadromous	Washington Department of Fish & Wildlife	Minor	Yes	WA	Yakima
Nemah	Anadromous	Washington Department of Fish & Wildlife		No	WA	Washington Coast
Newsome Creek Acclimation Facility	Anadromous	Nez Perce Tribe	Major	Yes	ID	Clearwater
Nez Perce Tribal Hatchery	Anadromous	Nez Perce Tribe	Major	Yes	ID	Clearwater
Niagara Springs Hatchery	Anadromous	Idaho Department of Fish & Game	Minor	Yes	ID	Middle Snake
Niles Springs Ponds	Anadromous	Yakama Nation	Minor	Yes	WA	Yakima
Nisqually Fish Hatchery At Clear Creek	Anadromous	US Fish and Wildlife Service – Portland Region		No	WA	Puget Sound Basin
North Fork Clackamas Reservoir Net Pens	Anadromous	Oregon Department of Fish & Wildlife- Hq		Yes	OR	Willamette
North Lapwai Valley Acclimation Facility	Anadromous	Nez Perce Tribe	Major	Yes	ID	Clearwater
North Toutle Hatchery	Anadromous	Washington Department of Fish & Wildlife		Yes	WA	Cowlitz
NW Fisheries Science Cntr [Montlake Cr Fish Farm]	Anadromous	National Marine Fisheries Service – Seattle Office		No	WA	Puget Sound Basin
Oak Springs Hatchery	Mixed Anadromous / Resident Fish	Oregon Department of Fish & Wildlife- Hq	Major	Yes	OR	Deschutes
Omak Trout Hatchery	Resident Fish	Washington Department of Fish & Wildlife		Yes	WA	Okanogan
Oxbow Hatchery (Snake)	Anadromous	Idaho Department of Fish & Game		Yes	OR	Middle Snake
Oxbow Springs Hatchery (Columbia)	Anadromous	Oregon Department of Fish & Wildlife- Hq	Minor	Yes	OR	Columbia Gorge
Pahsimeroi Hatchery	Anadromous	Idaho Department of Fish & Game	Minor	Yes	ID	Salmon
Parkdale Fish Facility	Anadromous	Warm Springs Tribes	Major	Yes	OR	Hood
Pelton Dam Fish Ladder (Hatchery)	Anadromous	Oregon Department of Fish & Wildlife- Hq	Major	Yes	OR	Deschutes
Pendleton Ponds Satellite Facility	Anadromous	Umatilla Confederated Tribes	Major	Yes	OR	Umatilla
Pittsburg Landing Acclimation Facility	Anadromous	Nez Perce Tribe	Major	Yes	ID	Snake Hells Canyon
Powell Satellite Facility	Anadromous	Idaho Department of Fish & Game	Major	Yes	ID	Clearwater
Powerdale Fish Trapping Facility	Anadromous	Oregon Department of Fish & Wildlife- Hq	Major	Yes	OR	Hood
Priest Rapids Hatchery	Anadromous	Washington Department of Fish & Wildlife	Minor	Yes	WA	Lower Mid-Columbia

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Hatchery	Type	Agency	BPA Funds	Columbia Basin	State	Subbasin
Prosser Dvr Dam / Chandler Canal Fish Trap	Anadromous	Yakama Nation	Major	Yes	WA	Yakima
Prosser Dvr Dam Acclimation Ponds	Anadromous	Yakama Nation	Major	Yes	WA	Yakima
Puyallup	Anadromous	Washington Department of Fish & Wildlife		No	WA	Puget Sound Basin
Quilcene National Fish Hatchery	Anadromous	US Fish and Wildlife Service – Portland Region		Yes	WA	Washington Coast
Quinalt National Fish Hatchery	Anadromous	US Fish and Wildlife Service – Portland Region		No	WA	Washington Coast
Rapid River Hatchery	Anadromous	Idaho Department of Fish & Game	Minor	Yes	ID	Salmon
Red River Satellite Facility	Anadromous	Idaho Department of Fish & Game	Major	Yes	ID	Clearwater
Reiter Ponds	Unknown / Unspecified	Washington Department of Fish & Wildlife		No	WA	Puget Sound Basin
Ringold Springs Hatchery	Mixed Anadromous / Resident Fish	Washington Department of Fish & Wildlife	Minor	Yes	WA	Lower Mid-Columbia
Roaring River Hatchery	Mixed Anadromous / Resident Fish	Oregon Department of Fish & Wildlife- Hq	Minor	Yes	OR	Willamette
Rock Creek Hatchery	Mixed Anadromous / Resident Fish	Oregon Department of Fish & Wildlife- Hq		No	OR	S Oregon Coast
Rock Creek Pens (32 Mi Abv Jd Dam)	Anadromous	US Fish and Wildlife Service – Portland Region		Yes	WA	Lower Mid-Columbia
Rocky Reach Hatchery	Anadromous	Washington Department of Fish & Wildlife		Yes	WA	Upper Mid-Columbia
Round Butte Hatchery	Mixed Anadromous / Resident Fish	Oregon Department of Fish & Wildlife- Hq	Minor	Yes	OR	Deschutes
Salmon River Hatchery	Anadromous	Oregon Department of Fish & Wildlife- Hq		No	OR	N Oregon Coast
Samish	Anadromous	Washington Department of Fish & Wildlife		No	WA	Puget Sound Basin
Sandpoint Hatchery	Resident Fish	Idaho Department of Fish & Game		Yes	ID	Pend Oreille
Sandy Hatchery	Mixed Anadromous / Resident Fish	Oregon Department of Fish & Wildlife- Hq	Minor	Yes	OR	Sandy
Satsop Springs	Anadromous	Washington Department of Fish & Wildlife		No	WA	Washington Coast
Sawtooth Hatchery	Mixed Anadromous / Resident Fish	Idaho Department of Fish & Game	Minor	Yes	ID	Salmon
Shale Creek	Anadromous	Washington Department of Fish & Wildlife		No	WA	Washington Coast
Sherman Creek Hatchery	Resident Fish	Washington Department of Fish & Wildlife	Major	Yes	WA	Upper Columbia
Similkameen Pond	Anadromous	Washington Department of Fish & Wildlife		Yes	WA	Okanogan
Simpson Hatchery	Anadromous	Washington Department of Fish & Wildlife		No	WA	Puget Sound Basin
Skamania Hatchery	Anadromous	Washington Department of Fish & Wildlife	Minor	Yes	WA	Lower Columbia
Skookumchuck	Anadromous	Washington Department of Fish & Wildlife		No	WA	Washington Coast
Social Security Pond/ Net Pens	Anadromous	US Fish and Wildlife Service – Portland Region		Yes	OR	Lower Mid-Columbia
Sol Duc	Anadromous	Washington Department of Fish & Wildlife		No	WA	Washington Coast

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Hatchery	Type	Agency	BPA Funds	Columbia Basin	State	Subbasin
Soos Creek	Unknown / Unspecified	Washington Department of Fish & Wildlife		No	WA	Puget Sound Basin
South Fork Salmon River Satellite Facility	Anadromous	Idaho Department of Fish & Game	Major	Yes	ID	Salmon
South Santiam Hatchery	Anadromous	Oregon Department of Fish & Wildlife- Hq	Minor	Yes	OR	Willamette
South Toutle Trap	Anadromous	Washington Department of Fish & Wildlife		Yes	WA	Cowlitz
Speelyai Hatchery	Mixed Anadromous / Resident Fish	Washington Department of Fish & Wildlife	Minor	Yes	WA	Lewis
Spokane Hatchery	Resident Fish	Washington Department of Fish & Wildlife		Yes	WA	Spokane Lower
Spokane Tribal Hatchery	Resident Fish	Spokane Tribe of Indians	Major	Yes	WA	Spokane Lower
Spring Creek National Fish Hatchery	Anadromous	US Fish and Wildlife Service – Portland Region	Minor	Yes	WA	White Salmon
Stayton Rearing Pond	Anadromous	Oregon Department of Fish & Wildlife- Hq		Yes	OR	Willamette
Sweetwater Springs Tribal Hatchery	Anadromous	Nez Perce Tribe	Major	Yes	ID	Clearwater
Thornhollow Acclimation Pond	Anadromous	Umatilla Confederated Tribes	Major	Yes	OR	Umatilla
Tokul	Anadromous	Washington Department of Fish & Wildlife		No	WA	Puget Sound Basin
Toutle Hatchery	Anadromous	Washington Department of Fish & Wildlife	Minor	Yes	WA	Cowlitz
Trask River Hatchery	Anadromous	Oregon Department of Fish & Wildlife- Hq		No	OR	N Oregon Coast
Trojan Rearing Pond	Anadromous	Oregon Department of Fish & Wildlife- Hq	Minor	Yes	OR	Lower Columbia
Tucannon Hatchery	Mixed Anadromous / Resident Fish	Washington Department of Fish & Wildlife	Major	Yes	WA	Tucannon
Tucker Creek / Vanderveldt Ponds	Anadromous	Oregon Department of Fish & Wildlife- Hq		Yes	OR	Youngs
Tumwater Falls	Anadromous	Washington Department of Fish & Wildlife		No	WA	Puget Sound Basin
Turtle Rock Hatchery	Anadromous	Washington Department of Fish & Wildlife	Minor	Yes	WA	Upper Mid-Columbia
Twisp Trap & Pond	Anadromous	Washington Department of Fish & Wildlife		Yes	WA	Methow
U of Washington Teaching & Research Hatchery	Anadromous	University of Washington		No	WA	Puget Sound Basin
Umatilla Hatchery	Anadromous	Oregon Department of Fish & Wildlife- Hq	Major	Yes	OR	Lower Mid-Columbia
Umatilla River / ODFW Site Rm 56.2	Anadromous	Umatilla Confederated Tribes	Major	Yes	OR	Umatilla
Upper Grande Ronde Acclimation Site	Anadromous	Umatilla Confederated Tribes	Major	Yes	OR	Grande Ronde
Upper Grande Ronde Trap	Anadromous	Umatilla Confederated Tribes	Major	Yes	OR	Grande Ronde
Upper Snake River Tribal Hatchery	Resident Fish	Shoshone-Bannock Tribes	Major	Yes	ID	Upper Snake
Vancouver Hatchery	Mixed Anadromous / Resident Fish	Washington Department of Fish & Wildlife		Yes	WA	Lower Columbia
Voights Creek	Unknown / Unspecified	Washington Department of Fish & Wildlife		No	WA	Puget Sound Basin
Wahkeena Pond	Anadromous	Oregon Department of Fish & Wildlife- Hq		Yes	OR	Lower Columbia
Walla Walla Hatchery	Anadromous	Umatilla Confederated Tribes	Major	Yes	WA	Walla Walla

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Hatchery	Type	Agency	BPA Funds	Columbia Basin	State	Subbasin
Walla Walla River, South Fork Satellite	Anadromous	Umatilla Confederated Tribes	Major	Yes	OR	Walla Walla
Wallace River	Unknown / Unspecified	Washington Department of Fish & Wildlife		No	WA	Puget Sound Basin
Wallowa Hatchery	Mixed Anadromous / Resident Fish	Oregon Department of Fish & Wildlife- Hq	Major	Yes	OR	Grande Ronde
Wapato Canal Pen Rearing	Anadromous	Yakama Nation	Major	Yes	WA	Yakima
Wapato Dam Acclimation Pond	Anadromous	Yakama Nation	Major	Yes	WA	Yakima
Wapatox Dvr Dam Smolt Trap	Anadromous	Yakama Nation	Major	Yes	WA	Yakima
Warm Springs National Fish Hatchery	Anadromous	US Fish and Wildlife Service – Portland Region	Minor	Yes	OR	Deschutes
Washoe Park Trout Hatchery	Resident Fish	Montana Dept. of Fish & Wildlife – Helena		Yes	MT	Clark Fork
Washougal Hatchery	Anadromous	Washington Department of Fish & Wildlife	Minor	Yes	WA	Washougal
Wells Hatchery	Mixed Anadromous / Resident Fish	Washington Department of Fish & Wildlife	Minor	Yes	WA	Upper Mid-Columbia
West Fork Acclimation Site (Dry Run Bridge)	Anadromous	Umatilla Confederated Tribes	Major	Yes	OR	Hood
Weyco Pond	Anadromous	Washington Department of Fish & Wildlife		Yes	WA	Columbia Estuary /Ocean
Whitehorse Pond	Unknown / Unspecified	Washington Department of Fish & Wildlife		No	WA	Puget Sound Basin
Willamette [Oakridge] Hatchery	Mixed Anadromous / Resident Fish	Oregon Department of Fish & Wildlife- Hq	Minor	Yes	OR	Willamette
Willard National Fish Hatchery	Anadromous	US Fish and Wildlife Service – Portland Region	Minor	Yes	WA	Little White Salmon
Winthrop National Fish Hatchery	Anadromous	US Fish and Wildlife Service – Portland Region	Minor	Yes	WA	Methow
Wizard Falls Hatchery	Resident Fish	Oregon Department of Fish & Wildlife- Hq		Yes	OR	Deschutes
Yakima Hatchery	Anadromous	Yakama Nation	Major	Yes	WA	Yakima
Yakima Trout Hatchery	Resident Fish	Washington Department of Fish & Wildlife		Yes	WA	Yakima
Yoosa / Camp Creek Acclimation Facility	Anadromous	Nez Perce Tribe	Major	Yes	ID	Clearwater

Sources: Web Pages of IDFG, WDFW, ODFW, MDFW, plus data from the BPA historic files, StreamNet, etc. Jan 2001.

Complex: refers primarily to groupings of Washington state hatcheries.

BPA Funds: *Major* = substantial support from BPA, *Minor* = some support for research, production, etc.

Appendix H
BPA Fish and Wildlife Projects 1978-2001

Appendix H

BPA FISH AND WILDLIFE PROJECTS 1978-2001 (Updated 11/2002)

Program	Project Title	BPA Project #
Anadromous Fish	15 Mile Creek Steelhead Smolt Production	199304001
Anadromous Fish	15 Mile Creek Water Right Acquisition	199900800
Anadromous Fish	1992 Watershed Symposium	199207900
Anadromous Fish	3-D Acoustetic Telemetry at Coulee	199501102
Anadromous Fish	Acclimation Pond Search Above John Day Dam	198608200
Anadromous Fish	Acquire 27,000 Camp Creek Ranch at Zumwalt Prairie	200104300
Anadromous Fish	Acquire Oxbow Ranch Middle Fork John Day River	200001500
Anadromous Fish	Adult Pit Detector Installation	200100300
Anadromous Fish	Adult Salmonid Accounting Procedures	198404200
Anadromous Fish	Adult Spring/Summer Chinook Outplanting	200106000
Anadromous Fish	Adult Upstream Survival – Biological Analysis	199302600
Anadromous Fish	AFS Conference on Stream Habitat Rehabilitation	198813100
Anadromous Fish	Ahtanum Creek Watershed Assessment	199901300
Anadromous Fish	Alicel Dike Improvement – Grande Ronde	199709200
Anadromous Fish	Allowable Gas Supersaturation at Dams	199300800
Anadromous Fish	Alpine Meadows – Trout Creek Restoration	199906400
Anadromous Fish	Alternative Fish Transportation Strategies	198612300
Anadromous Fish	Ames Creek Restoration	200103600
Anadromous Fish	Anadromous Fish Habitat & Passage in Omak Creek	200000100
Anadromous Fish	Anadromous Fish Health Monitoring (WDF)	198605400
Anadromous Fish	Anadromous Fish Health Monitoring / Idaho	198711700
Anadromous Fish	Anadromous Fish Health Monitoring in Washington	198601300
Anadromous Fish	Anadromous Fish Program Goal: Intertribe (CRITFC)	198380900
Anadromous Fish	Anadromous Fish Program Goals – Colville Tribe	198380100
Anadromous Fish	Anadromous Fish Program Goals – Nez Perce Tribe	198380300
Anadromous Fish	Anadromous Fish Program Goals – Spokane Tribe	198380200
Anadromous Fish	Anadromous Fish Program Goals – Umatilla Tribe	198380600
Anadromous Fish	Anadromous Fish Program Goals – Warm Springs Tribe	198380500
Anadromous Fish	Anadromous Fish Program Goals – Yakima Tribe	198380400
Anadromous Fish	Anadromous Fish Program Goals: Shoshone – Bannock	198380700
Anadromous Fish	Anadromous Fish Program Goals: Shoshone – Paiute	198380800
Anadromous Fish	Analysis of Historic Data for Juveniles & Adult S	198741302
Anadromous Fish	Analytical Methods for Malachite Green	198904000
Anadromous Fish	Analytical Modeling Support – NMFS	199907600
Anadromous Fish	Analytical Support – Dr James Anderson	199800601
Anadromous Fish	Analyze Genetic & Behavioral Change Domestication	200007100
Anadromous Fish	Analyze Persistence/Dynamics Snake R Chinook	199902000
Anadromous Fish	Analyze Salmon & Steelhead Supplementation Efforts	198810000
Anadromous Fish	Annual Coded Wire Tag Program – USFWS Hatcheries	198906500
Anadromous Fish	Annual Work Plan – Columbia Basin F&W Foundation	198906201
Anadromous Fish	Antimony Mine Restoration	199303400
Anadromous Fish	Applications of Sound to Modify Behavior of Fish	199207101
Anadromous Fish	Aquatic Ecosystem Review – Challis	199901901
Anadromous Fish	Aquatic Ecosystem Review – Salmon River	199906900
Anadromous Fish	Aquatic Habitat Satellite Imagery Model	200101400
Anadromous Fish	Arrowleaf/Methow River Conservation	200103700
Anadromous Fish	Asotin Cr Channel, Floodplain Riparian Restoration	200006700
Anadromous Fish	Asotin Cr Isco Water & Macro-Invertebrate Sampling	200004600
Anadromous Fish	Asotin Creek Channel & Fish Habitat Restoration	199708200

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Program	Project Title	BPA Project #
Anadromous Fish	Asotin Creek Channel Restoration	199905500
Anadromous Fish	Asotin Creek Early Action Projects	199605800
Anadromous Fish	Asotin Creek Fish/Structure Monitoring	199804500
Anadromous Fish	Asotin Creek Five Year Minimum Till Program	199905200
Anadromous Fish	Asotin Creek Information and Education	199804700
Anadromous Fish	Asotin Creek Instream Project Monitoring	199905400
Anadromous Fish	Asotin Creek Model Watershed Placeholder	199401805
Anadromous Fish	Asotin Creek Native Tree Nursery	200003200
Anadromous Fish	Asotin Creek Riparian Fencing Projects	200005400
Anadromous Fish	Asotin Creek Riparian Fencing/Rock Blasting	199709900
Anadromous Fish	Asotin Creek Riparian Planting	200005300
Anadromous Fish	Asotin Creek Upland Sedimentation Reduction	199708000
Anadromous Fish	Asotin Creek Woody Materials	199804400
Anadromous Fish	Asotin Watering Troughs	199401804
Anadromous Fish	Asotin Watershed Channel and Riparian Restoration	199804600
Anadromous Fish	Asotin Watershed Cropland Conservation	199708400
Anadromous Fish	Asotin Watershed Grazing Biological Plan	200100200
Anadromous Fish	Asotin Watershed Project Implementation	199900200
Anadromous Fish	Asotin Watershed Upland Bmp Implementation	199906000
Anadromous Fish	Asotin Watershed Upland BMP's	199708600
Anadromous Fish	Asotin Watershed Yellow Star Thistle Control	200000800
Anadromous Fish	Assemble & Analyse Anadromous Fishery Data	198110100
Anadromous Fish	Assess Chinook Restoration (Snake River Basin)	199403400
Anadromous Fish	Assess Columbia Basin Anadromous Hatcheries	198904500
Anadromous Fish	Assess Fish Habitat & Salmonoids in Walla Walla	199901100
Anadromous Fish	Assess Impacts of Hydro Dev on Mainstem Habitats	199800402
Anadromous Fish	Assess Impacts of Hydro Development on The Estuary	199800404
Anadromous Fish	Assess Mckenzie Watershed Habitat&prioritize Proj	200003000
Anadromous Fish	Assess Population in Columbia River Chinook Salmon	199800403
Anadromous Fish	Assess Salmonid Habitat Walla Walla Watershed – WA	199802000
Anadromous Fish	Assess/Applic Technology to Improve Measurement CA	199207100
Anadromous Fish	Assist BPA Anadromous Fish Mitigation Analysis	198508701
Anadromous Fish	Assistance for Yakima M&E Program Development	199201801
Anadromous Fish	Assistance for Yakima Supplementation Research	199201800
Anadromous Fish	Audit Columbia Basin Anadromous Hatcheries (IHOT)	199500200
Anadromous Fish	Augmented Fish Health Monitoring / Oregon	198711800
Anadromous Fish	Augmented Fish Health Monitoring / USFWS	198711900
Anadromous Fish	Avian Predation on Juvenile Salmonids	199702400
Anadromous Fish	Avian Predation Technical Advisor	199702401
Anadromous Fish	Bachelor-Hatten Fish Passage Land Acquisition	199403200
Anadromous Fish	Badger Creek Culvert Replacement	200105700
Anadromous Fish	Bakeoven Riparian Assessment	199900600
Anadromous Fish	Barge Transportation Study	198200200
Anadromous Fish	Baseline Information for Warm Springs Reservation	198110700
Anadromous Fish	Bay Terminal Fishery	199207700
Anadromous Fish	Bear & Prairie Creeks Habitat Work	199707700
Anadromous Fish	Bear Cr, R-Y Timber Grazing & Road Plan	199708900
Anadromous Fish	Bear Creek & Sheep Creek Habitat Projects (NPT)	199607400
Anadromous Fish	Bear Creek Road Resurfacing, Grande Ronde Basin	199605400
Anadromous Fish	Bear Gulch Restoration Watershed	200006000
Anadromous Fish	Bear Valley, Yankee & East Forks Habitat Work	198335900
Anadromous Fish	Beaver Creek Fish Passage	199907900
Anadromous Fish	Big Canyon Acclimation Facility – Clearwater R	199801008
Anadromous Fish	Bioenergetics of Outmigrant Salmon	198201100
Anadromous Fish	Birkmaier Streambank Protection	199700700

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Program	Project Title	BPA Project #
Anadromous Fish	Boise Cascade Riparian Fencing- Grande Ronde	199604800
Anadromous Fish	Bonifer Springs Acclimation Facility	198201800
Anadromous Fish	Bonneville Captive Brood Facility Construction	199703700
Anadromous Fish	Bonneville Dam Juvenile Fish Sampling Facility	199104000
Anadromous Fish	Bonneville Hatchery Captive Broodstock (NE Oregon)	199604400
Anadromous Fish	BPA Technical Management Team Database Support	199601900
Anadromous Fish	Buck Hollow Watershed Enhancement (ODFW)	199304500
Anadromous Fish	Buck Hollow Watershed Enhancement (SWCD)	199303000
Anadromous Fish	Burgdorf Meadows	199802300
Anadromous Fish	Burlingame Screens Construction Management	199601103
Anadromous Fish	Camas Creek Riparian Protection	198402300
Anadromous Fish	Camp Carson Mine Reclamation, Upper Grande Ronde	199405800
Anadromous Fish	Camp Cr Riparian Fence & Water Site Development	199707500
Anadromous Fish	Camp One Restoration	199707600
Anadromous Fish	Capt John Rapids Acclimation Facility – Snake R	199801007
Anadromous Fish	Captive Broodstock Artificial Propagation	199801006
Anadromous Fish	Captive Salmonid Broodstock Technology Demo	199305600
Anadromous Fish	Cascade Irrigation District Fish Screens	199204500
Anadromous Fish	Catherine Cr & Grande Ronde R Habitat Work	199707800
Anadromous Fish	Catherine Cr Riparian Pasture & Water Development	199707100
Anadromous Fish	Catherine Creek Diversion Dam Replacement	199402701
Anadromous Fish	Catherine Creek Road Erosion, Grande Ronde Basin	199605100
Anadromous Fish	Catherine Creek State Park Interpretive Sign	199710200
Anadromous Fish	Chandler Juvenile Facility Monitoring & Evaluation	198812010
Anadromous Fish	Chandler Juvenile Facility O&M	199506301
Anadromous Fish	Chandler Juvenile Trap Calibration	199006500
Anadromous Fish	Chicken Creek Habitat Improvement, Grande Ronde	199609000
Anadromous Fish	Clackamas River Side Channel Improvement	199304100
Anadromous Fish	Clark Flat Acclimation Site – Yakima Hatchery	198811511
Anadromous Fish	Classify Ecosystem Types – Blue Mountains	198910400
Anadromous Fish	Cle Elum Lake Basin Sockeye Study	198604500
Anadromous Fish	Clear / Granite Creeks Habitat Improvement	198339400
Anadromous Fish	Clear Cr & NF John Day Dredge-Tailings Restoration	199605300
Anadromous Fish	Clearwater Basin Habitat Improvement Study	198403100
Anadromous Fish	Clearwater Ditch Diversion (Grande Ronde Basin)	199402703
Anadromous Fish	Clearwater Focus Watershed – Nez Perce Tribe	199700600
Anadromous Fish	Clearwater Focus Watershed – State of Idaho	199608600
Anadromous Fish	Clearwater River Sub-Basin Assessment	199700601
Anadromous Fish	Clearwater River Subbasin Ecosystem Assessment	199608601
Anadromous Fish	Coastal Cutthroat in Columbia R Above Bonneville	200102600
Anadromous Fish	Coded Wire Tag – ODFW	198201302
Anadromous Fish	Coded Wire Tag – PSMFC	198201301
Anadromous Fish	Coded Wire Tag – USFWS	198201303
Anadromous Fish	Coded Wire Tag – WDFW	198201304
Anadromous Fish	Coded-Wire Tag Recovery	198201300
Anadromous Fish	Coho Restoration Mid-Columbia River Tributaries	199604000
Anadromous Fish	Collaborative Center for Applied Fish Science	200104600
Anadromous Fish	Columbia Basin Ecosystem Management	199404600
Anadromous Fish	Columbia Basin Habitat Improvement Evaluation	198607800
Anadromous Fish	Columbia Basin Pit-Tag Information System (Ptagis)	199008000
Anadromous Fish	Columbia Basin Regional Fish Screening	199202800
Anadromous Fish	Columbia Chinook & Steelhead Stock Identification	198345100
Anadromous Fish	Columbia Estuary Migrational Characteristics	198110200
Anadromous Fish	Columbia Hatchery Contributions to Chinook Fishery	197900200
Anadromous Fish	Columbia R Basin Watershed Restoration Activities	199703900

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Program	Project Title	BPA Project #
Anadromous Fish	Columbia River Coded-Wire Tag Recovery	198110300
Anadromous Fish	Columbia River Salmon Passage (CRISP) Model	198910800
Anadromous Fish	Columbia River Stock Assessment	198333500
Anadromous Fish	Columbia River Terminal Fisheries Research – ODFW	199306000
Anadromous Fish	Columbia River/Estuary Carrying Capacity Study	199301200
Anadromous Fish	Columbia Select Area Fishery Evaluation – CEDC	199306001
Anadromous Fish	Columbia Select Area Fishery Evaluation – WDFW	199306002
Anadromous Fish	Comparative Survival – Hatchery PIT Tagged Chinook	198712702
Anadromous Fish	Comprehensive Analysis of Salmonid Production	199306700
Anadromous Fish	Conservation Easement, Baker Ranch, Salmon River	200104400
Anadromous Fish	Conservation Reserve Enhancement Program Incentive	200006400
Anadromous Fish	Construct Corvallis Fish Disease Laboratory	198740300
Anadromous Fish	Construct Toppenish, Westside & Ellensburg Screens	198611200
Anadromous Fish	Construct Tulley Hill Diversion, Wallowa Basin	199605900
Anadromous Fish	Construct Westside & Marion Drain Screen & Ladder	198606500
Anadromous Fish	Construction of Grande Ronde Satellite Facilities	199800701
Anadromous Fish	Construct Security Fence – Sunnyside Right Bank	198508900
Anadromous Fish	Consultant, Caspian Tern Survey, Alaska	199702403
Anadromous Fish	Contractor for Water Budget Anaysis	198742000
Anadromous Fish	Contributions to The Columbia River Estuary Atlas	198494600
Anadromous Fish	Coordinate Watershed Planning & Implementation	199901200
Anadromous Fish	Coordination of Trout Creek Restoration	198400700
Anadromous Fish	Cottonwood Creek Habitat Improvement	198347300
Anadromous Fish	Cottonwood Creek Riparian Enhancement/Wallowa	199709800
Anadromous Fish	Crisp.0 Model Development	199203300
Anadromous Fish	Crooked River Passage	198350200
Anadromous Fish	Crow Cr Star Thistle Containment & Riparian Enhanc	199907800
Anadromous Fish	CTUIR – Mcintyre Creek Road Relocation	199608400
Anadromous Fish	CTUIR – Nursery for Fish Habitat Plants	199606800
Anadromous Fish	CTWSIR Materials & Supplies: Watershed Projects	199603001
Anadromous Fish	Dark Canyon Watershed Restoration	199804000
Anadromous Fish	Deschutes River Basin Riparian Fencing	199602800
Anadromous Fish	Deschutes River Spawning Gravel Study	198337300
Anadromous Fish	Design & Construct Powerdale Dam Facilities (ODFW)	199301900
Anadromous Fish	Design & Construction of Dryden Fish Screens	199201500
Anadromous Fish	Design and Construct Neoh Walla Walla Hatchery	200003800
Anadromous Fish	Design Bonifer Juvenile Imprinting / Release Site	198110600
Anadromous Fish	Design of Fish and Wildlife Mitigation Accounting	198508700
Anadromous Fish	Design/Construction Services Contractor Pool	199800900
Anadromous Fish	Develop & Maintain Streamnet By Merger of CIS /Ned	198810804
Anadromous Fish	Develop Effective Media for Juvenile Chinook	198200400
Anadromous Fish	Develop Life Cycle Model & Apply to Idaho Salmon	199203200
Anadromous Fish	Develop Nitrogen Gas Model (Gasspill)	198401300
Anadromous Fish	Develop Rations for Enhanced Survival of Salmon	198336300
Anadromous Fish	Develop System for Removing Malachite Green	198742100
Anadromous Fish	Develop Vaccine for Bacterial Kidney Disease -BKD	198404600
Anadromous Fish	Develop Yakima Natural Production Objectives	199706200
Anadromous Fish	Developing NIT/LNIT Rearing Strategies for Yakima	199506405
Anadromous Fish	Development and Implementation of Harvest Projects	199302800
Anadromous Fish	Development of Laser-Marking of Salmonids	199207300
Anadromous Fish	Development of New Concepts in Fish Ladder Design	198201400
Anadromous Fish	Diagnosis of 5 Pathogens	198330400
Anadromous Fish	Diet,dist,history of N. Mercedis in John Day Pool	200004900
Anadromous Fish	Distribution of Smolts & Gas Bubble Disease	199603100
Anadromous Fish	DNA Variation in Coho – Lower Columbia	199203500

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Program	Project Title	BPA Project #
Anadromous Fish	Documenting & Estimating Passage- Video Technology	199205500
Anadromous Fish	Downstream Migrant Monitoring	198606000
Anadromous Fish	Dworshak Photoperiod & Temperature Treatments	198814100
Anadromous Fish	E Washington Landowners Adopt-A-stream Training	199208200
Anadromous Fish	Eagle Creek Hydro Project (Maintenance)	198612500
Anadromous Fish	Early Action Cooperative Funding Agreement – Ctwir	199603002
Anadromous Fish	East End Road Obliteration and Sediment Reduction	199908100
Anadromous Fish	East Fork Salmon/ Pahsimeroi Habitat (Custer Co)	199401702
Anadromous Fish	Eastern WA Model Watershed Development	199202602
Anadromous Fish	Easton Acclimation Site – Yakima Hatchery	198811512
Anadromous Fish	Echo Meadow Winter Artificial Recharge	200101500
Anadromous Fish	Economic Impact Analysis for Yakima River Basin	199403800
Anadromous Fish	Ecosystem Modeling for Sor/Afwg and Hybrid Crisp	199205600
Anadromous Fish	EDT Model Evaluation	200107000
Anadromous Fish	EDT Validation – USF&WS	200107800
Anadromous Fish	Effect of Grazing Enclosures on Stream Habitat	199803200
Anadromous Fish	Effect of Nutrition on Immune Responses of Salmon	198404500
Anadromous Fish	Effects of Coded-Wire Tagging on Spring Chinook	198816300
Anadromous Fish	Effects of Dissolved Gas Supersat on Resident Fish	199602200
Anadromous Fish	Eitology of "head Burns" in Adult Salmonids	199605000
Anadromous Fish	Electrophoretic Analysis of Snake River Sockeye	199306800
Anadromous Fish	Electrophoresis Demonstration Genetics Project	198508400
Anadromous Fish	Elisa-Based Segregation of Adult Chinook for BKD	199102200
Anadromous Fish	Elisa-Based Segregation of Adult Chinook for BKD	198903100
Anadromous Fish	Ellensburg Fish Screens Construction	198704700
Anadromous Fish	Energy and Environmental Policy Intern Study	198612700
Anadromous Fish	Enhance North Fork John Day River Subbasin – CTUIR	200003100
Anadromous Fish	Enloe Dam Passage	198347700
Anadromous Fish	Environmental Monitoring in The Snake River Basin	199207103
Anadromous Fish	Epidemiological Salmonid Survival Studies	198910700
Anadromous Fish	Epidemiology and Control of Infectious Diseases	198331200
Anadromous Fish	Erythrocytic Inclusion Body Syndrome Etiology	198908102
Anadromous Fish	Erythromycin Registration	198903200
Anadromous Fish	Escapement /Productivity Spring Chinook – John Day	199801600
Anadromous Fish	Establish Safe Access Tributaries -Yakima Subbasin	199803400
Anadromous Fish	Estimated Screen Costs: Sunnyside and Wapato Dams	198401200
Anadromous Fish	Etiology of Early Salmonid Lifestage Diseases	198404400
Anadromous Fish	Eval Factors Limiting Col R Chum Salmon Population	200001200
Anadromous Fish	Eval Pacific Lamprey in Clearwater R Drainage IDFG	200002800
Anadromous Fish	Eval Reintroduction of Sockeye Salmon Skaha Lake	200001300
Anadromous Fish	Evaluate & Implement Stream Habitat Improvements	199101500
Anadromous Fish	Evaluate Bypass Conduit Designs – Lower Snake Dams	198604700
Anadromous Fish	Evaluate Habitat Work Conducted in 15 Mile Creek	199900900
Anadromous Fish	Evaluate Hydraulic Turbulence on Migratory Fish	200005700
Anadromous Fish	Evaluate Impacts of Yakima Production Project	199104800
Anadromous Fish	Evaluate Lamprey Habitat/Population in Cedar Creek	200001400
Anadromous Fish	Evaluate Live Capture Selective Harvest	200100700
Anadromous Fish	Evaluate Low-Cost Salmon Production Facilities	198336400
Anadromous Fish	Evaluate River Flow Pertaining to Smolt Survival	199105100
Anadromous Fish	Evaluate Salmonid Outmigration at McNary Dam	198200600
Anadromous Fish	Evaluate Smolt Stranding in Hanford Reach	199701400
Anadromous Fish	Evaluate Springfield Production Facilities	199202300
Anadromous Fish	Evaluate Supplementing Imnaha Summer Steelhead	198909700
Anadromous Fish	Evaluate Supplementing The Salmon and Clearwater	198909800
Anadromous Fish	Evaluate Umatilla Project- Smolt Migration	198902401

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Program	Project Title	BPA Project #
Anadromous Fish	Evaluation & Habitat Response to Recent Storms	199703500
Anadromous Fish	Evaluation of A Subunit Vaccine Against IHN	198404300
Anadromous Fish	Evaluation of Law Enforcement Program	199202407
Anadromous Fish	Evaluation of Oxygen Supplementation Equipment	198816002
Anadromous Fish	Evaluation of Retrofitted Oxygen Supplementation	198816000
Anadromous Fish	Evaluation of River Water for Klickitat Hatchery	198903000
Anadromous Fish	Evaluation of Umatilla R Basin Enhancement Project	198902400
Anadromous Fish	Evaluation of Yakima Passage Improvements	198506200
Anadromous Fish	Expand Coded Wire Tags – OR Columbia Hatcheries	198906900
Anadromous Fish	Expand Coded Wire Tags – WA Columbia Hatcheries	198906600
Anadromous Fish	F&W Conservation Enforcement Nez Perce Watersheds	200005500
Anadromous Fish	Facility Support for BKD-Vaccine Testing	198609600
Anadromous Fish	Fall Chinook Yakima R/Marion Drain Construction	199603317
Anadromous Fish	Fall Chinook Yakima River / Marion Drain O&M / M&E	199603315
Anadromous Fish	Farmers Irr Dist Mainstem Hood River Fish Screen	200104200
Anadromous Fish	Feasibility of Removal of Ghost Fishing Nets	200105800
Anadromous Fish	Fifteen Mile Cr Orchard Pesticide Pollution Risk	200102200
Anadromous Fish	Fifteen Mile Creek Riparian Buffers	200102100
Anadromous Fish	Fifteen Mile Creek Riparian Fencing/Stream Survey	200102000
Anadromous Fish	Fifteen Mile Subbasin Water Right Acquisition	200102300
Anadromous Fish	Fifteen Mile Water Acquisition	200101600
Anadromous Fish	Fifteenmile Creek Habitat Enhancement	198607900
Anadromous Fish	Fifteenmile Creek Habitat Enhancement- Phase IV, V	198607901
Anadromous Fish	Fifteenmile Creek Habitat Improvement	199304000
Anadromous Fish	Film BPA Fish Enhancement Activities in Idaho	198741100
Anadromous Fish	Film Umatilla River and Three Mile Dam Enhancement	198741000
Anadromous Fish	Film Yakima Fish Screen and Ladder Projects	198741400
Anadromous Fish	Final Design – Nez Perce Tribal Hatchery	198335001
Anadromous Fish	Final Design Data for Sunnyside Dam Screens	198401800
Anadromous Fish	Final Design- Sunnyside, Wapato, Richland Passage	198404700
Anadromous Fish	Fish / Wash Creeks Habitat Enhancement	198338500
Anadromous Fish	Fish Cr, Lake Branch & Collawash Habitat Work	198401100
Anadromous Fish	Fish Habitat Improvement – Lemhi SWCD	199607500
Anadromous Fish	Fish Habitat Project Field Reviews and Evaluations	199106900
Anadromous Fish	Fish Marking: Chinook and Steelhead (Idaho)	198401700
Anadromous Fish	Fish Marking: Steelhead – Yakima Basin	198401600
Anadromous Fish	Fish Passage Center	199403300
Anadromous Fish	Fish Passage Evaluations – Lower Columbia River	199204101
Anadromous Fish	Fish Survival & Smolt Physiology Behavior Workshop	198741301
Anadromous Fish	Five Points Creek Whole Tree Additions	199803900
Anadromous Fish	Five Year Plan Watersheds (CRITFC)	199607800
Anadromous Fish	Flow Effects on Cottonwood Ecosystems	200006800
Anadromous Fish	Flow Volume Provisions / Support	199304300
Anadromous Fish	Forrest Ranch Acquisition	200104100
Anadromous Fish	Fox Hill Road Improvements, Grande Ronde Basin	199402702
Anadromous Fish	Fred Grey Property Acquisition	199307200
Anadromous Fish	Freeze Brand Recovery Data (Mcnary Dam)	198713000
Anadromous Fish	Freeze Brand Salmonids at Lyons Ferry Hatchery	198611900
Anadromous Fish	Fungal Infection: Spring and Summer Chinook Salmon	199006100
Anadromous Fish	Garden City/Lowden 2 Diversion Screens	199601102
Anadromous Fish	Gas Bubble Disease Clearwater River Resident Fish	199701700
Anadromous Fish	Gas Bubble Disease Research on Juvenile Salmonids	199602100
Anadromous Fish	Gas Bubble Disease Signs & Survival of Smolts	199602400
Anadromous Fish	Genetic Analyses of Columbia & Snake Sockeye	199009300
Anadromous Fish	Genetic Consultation for BPA	199105200

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Program	Project Title	BPA Project #
Anadromous Fish	Genetic Identification Study	197900100
Anadromous Fish	Genetic M&E Program for Salmon & Steelhead	198909600
Anadromous Fish	Genetic Pathogens of Yakima Spring Chinook (WDFW)	199506410
Anadromous Fish	Genetic Sex of Chinook Salmon in Columbia R Basin	200100800
Anadromous Fish	Genetic Stock Identification Expansion Project	199300700
Anadromous Fish	Genetics Literature Search – Snake River Salmonids	199107700
Anadromous Fish	Gillnet Mesh Selectivity Study	199805601
Anadromous Fish	GIS Mapping of Asotin Creek Watershed Habitat	200004700
Anadromous Fish	Goat Creek Salmonid Habitat Restoration	199802900
Anadromous Fish	Gordon Creek/Grand Ronde Streambank Stabilization	199908000
Anadromous Fish	Gourley Creek Dam Fish Ladder	200103800
Anadromous Fish	Grand Ronde, Imnaha, & John Day Telemetry Tracking	199307000
Anadromous Fish	Grande Ronde – Union County Rd, Sediment Reduction	199906300
Anadromous Fish	Grande Ronde – Union SWCD Chan, Rd & Passage Rest	199906100
Anadromous Fish	Grande Ronde – Union SWCD Riparian, Upland Rest	199906200
Anadromous Fish	Grande Ronde Basin Gauging Station Monitoring	199904900
Anadromous Fish	Grande Ronde Basin Tech Engineering Assistance	199907300
Anadromous Fish	Grande Ronde Basin Temperature Assessment	199906500
Anadromous Fish	Grande Ronde Captive Brood O&M / M&E	199801001
Anadromous Fish	Grande Ronde Culvert Replacement – USFS	200006900
Anadromous Fish	Grande Ronde Mainstem Enhancement – CTUIR	199803701
Anadromous Fish	Grande Ronde Mainstem Enhancement, USFS	199803700
Anadromous Fish	Grande Ronde Model Watershed Development	199202601
Anadromous Fish	Grande Ronde Model Watershed Habitat Projects	199402700
Anadromous Fish	Grande Ronde Nutrient Presentation	199903900
Anadromous Fish	Grande Ronde River Basin Temperature Assessment	199906700
Anadromous Fish	Grande Ronde River Fencing – USFS	200007000
Anadromous Fish	Grande Ronde Supplementation – Design	199800705
Anadromous Fish	Grande Ronde Supplementation – O&M – ODFW	199800704
Anadromous Fish	Grande Ronde Supplementation – O&M -CTUIR	199800703
Anadromous Fish	Grande Ronde Supplementation – Scientific Review	199800706
Anadromous Fish	Grande Ronde Supplementation Facilities- O&M -NPT	199800702
Anadromous Fish	Grande Ronde Valley Stream Gauging	199609300
Anadromous Fish	Grande Ronde Water Quality Monitoring	199905000
Anadromous Fish	Grande Ronde Watershed Restoration – CTUIR	199608300
Anadromous Fish	Gravel Push-Up Dam Removal Lower N FK John Day R	199801700
Anadromous Fish	Grouse Creek Culvert Replacement	199805000
Anadromous Fish	Habitat & Passage Projects – Warm Springs Tribe	199603000
Anadromous Fish	Habitat Diversity in Alluvial Rivers	200101100
Anadromous Fish	Habitat Improvements, Ledgerwood Farms, Pataha Cr	199607200
Anadromous Fish	Hagedorn Road Relocation/Stream Restoration	199907100
Anadromous Fish	Hamilton Streambank Stabilization / Grande Ronde R	199709100
Anadromous Fish	Hancock Springs Passage & Habitat Restoration	200106500
Anadromous Fish	Hanford K-Basin Fall Chinook Acclimation (YN)	199603201
Anadromous Fish	Hanford K-Basin Fall Chinook Rearing/Tagging	199603203
Anadromous Fish	Hanford Reach K-Basin Master Plan (YN)	199603202
Anadromous Fish	Hanford Reach Steelhead Stock Investigation	200002400
Anadromous Fish	Haysfork Gloryhole Rehabilitation	199303600
Anadromous Fish	Heritability Disease Resistance & Immune Function	200007200
Anadromous Fish	Hofer Dam Passage	199601104
Anadromous Fish	Holiday Ranch conservation Easement	200107700
Anadromous Fish	Hood River – Parkdale O & M – WST	198805307
Anadromous Fish	Hood River – Powerdale/Oak Springs O&M – ODFW	198805308
Anadromous Fish	Hood River Fish Habitat	199802101
Anadromous Fish	Hood River Fish Habitat	199802100

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Program	Project Title	BPA Project #
Anadromous Fish	Hood River Production – Pelton Dam Ladder O & M	199500700
Anadromous Fish	Hood River Production – Pelton Ladder Hatchery	198902900
Anadromous Fish	Hood River Production Program – Hatchery O&M	198805306
Anadromous Fish	Hood River Production Program M & E – ODFW	198805304
Anadromous Fish	Hood River Production Program M & E -CTWSRO	198805303
Anadromous Fish	Horn Rapids Screen Construction	198406000
Anadromous Fish	Horn Rapids Screen Construction	198405600
Anadromous Fish	Hydraulic Review/Drilling, Westland Diversion	198741602
Anadromous Fish	Hydro Regulator Model Development	199704400
Anadromous Fish	Hydro-Cumulative Effects Methodology	198404100
Anadromous Fish	Hydropower Environmental Mitigation Study – Vol II	199206400
Anadromous Fish	Idaho Captive Rearing Initiative -Salmon R Chinook	199801002
Anadromous Fish	Idaho Chinook Salmon Captive Rearing	199700100
Anadromous Fish	Idaho Fish Screen Shop	199207800
Anadromous Fish	Idaho Fish Screening Improvement	199401500
Anadromous Fish	Idaho Habitat Evaluation/Offsite Mitigation Record	198300700
Anadromous Fish	Idaho Model Watershed Fish Habitat Improvement	199607600
Anadromous Fish	Idaho Model Watershed Habitat Projects	199401700
Anadromous Fish	Idaho Natural Production Monitoring and Evaluation	199107300
Anadromous Fish	Idaho Water Rental – Fish & Wildlife Impacts	199106700
Anadromous Fish	Idaho Water Rental – Flows	199104100
Anadromous Fish	IHN Virus Control	198202100
Anadromous Fish	IHN Virus Workshop	198202200
Anadromous Fish	Imnaha River Smolt Monitoring – Nez Perce Tribe	199701501
Anadromous Fish	Imnaha River Smolt Monitoring Program	198712703
Anadromous Fish	Imnaha Steelhead Rearing, Release and M&E	198805310
Anadromous Fish	Imnaha/Parks Ditch Water Conservation Program	200006200
Anadromous Fish	Implement Trout Creek Watershed Enhancement	199802800
Anadromous Fish	Implement Wy-Kan-ush-mi Wa-Kish-wit Watershed Plan	199803100
Anadromous Fish	Implementation of Trout Creek Habitat Restoration	198406200
Anadromous Fish	Implementation Plan Development	200100100
Anadromous Fish	Imprinting of Salmon and Steelhead for Homing	197800100
Anadromous Fish	Improve Fish Passage at Starbuck Dam	199202500
Anadromous Fish	Improve Sunnyside Ladders and Screen	198406100
Anadromous Fish	Improve The Dryden Dam Passage	198505300
Anadromous Fish	Improve The Tumwater Dam Passage	198505200
Anadromous Fish	Improvements at Westland Diversion	198710402
Anadromous Fish	Incidental Expenses – Gas Bubble Disease Research	199700500
Anadromous Fish	Increase Alturas Lake Cr Flow / Busterback Ranch	198341500
Anadromous Fish	Indian Creek Habitat Restoration (Grande Ronde)	199505300
Anadromous Fish	Induced Turbulence to Assist Migrating Salmonids	200101000
Anadromous Fish	Influence of Vitamin Nutrition on Immune Response	198494500
Anadromous Fish	Info-Artificial Production Mitigation Col R Basin	199804100
Anadromous Fish	Infrastructure for Fda Registration Erythromycin	200000700
Anadromous Fish	Integrated Hatchery Operations and Policy	199204300
Anadromous Fish	Interim O&M for Cle Elum (Yakima) Hatchery	198812012
Anadromous Fish	Internal Consultation for Hydro Operations	199709400
Anadromous Fish	Intertie Policy & Expansion Impacts (Fishpass)	198609500
Anadromous Fish	Inventory Habitat& Food Abundance Data	199105900
Anadromous Fish	Inventory of Nez Perce Reservation Streams	198200100
Anadromous Fish	Investigate Process for Registration of Squoxin	198342800
Anadromous Fish	Irrigation & Riparian Improvements – John Day R	199801800
Anadromous Fish	Jack Creek Acclimation Site – Yakima Hatchery	198811513
Anadromous Fish	John Day Dam Juvenile Fish Monitoring Facilities	199402800
Anadromous Fish	John Day Dam Smolt Monitoring Facility	199602300

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Program	Project Title	BPA Project #
Anadromous Fish	John Day Fish Habitat Improvement	199303900
Anadromous Fish	John Day Reservoir Requirements for Chinook Salmon	198100100
Anadromous Fish	John Day River Habitat Improvement	198200900
Anadromous Fish	John Day River Wild Spring Chinook Study	197900400
Anadromous Fish	John Day Stream Flow Enhancement	200106900
Anadromous Fish	Johnson Creek Artificial Propagation Enhancement	199604300
Anadromous Fish	Johnson Creek Real Estate Services	199604304
Anadromous Fish	Johnson Creek Scientific Review	199604301
Anadromous Fish	Johnson Creek Wetlands Delineation	199604303
Anadromous Fish	Joint Culture Facility Scientific Review	199500601
Anadromous Fish	Joseph Creek & Grande Ronde River Habitat Work	198400900
Anadromous Fish	Joseph Creek & Grande Ronde River Habitat Work	198402500
Anadromous Fish	Joseph Creek Watershed Improvement	199805400
Anadromous Fish	Juvenile & Adult Passage- Walla Walla Basin	199601100
Anadromous Fish	Juvenile Radio Tag Studies	198503500
Anadromous Fish	Juvenile Salmon in The Columbia Estuary	198815900
Anadromous Fish	Juvenile Salmonid Monitoring at Rock Island Dam	198405400
Anadromous Fish	K-Basin (Hanford Reach) Acclimation/ Propagation	199603200
Anadromous Fish	K-Basin Fall Chinook Acclimation Alternative Site	199603204
Anadromous Fish	Klicitat fisheries (YKFP) Data management/habitat	198812035
Anadromous Fish	Klicitat Fisheries (YKFP) Design & Construction	198811535
Anadromous Fish	Klickitat Fisheries (YKFP) M & E	199506335
Anadromous Fish	Klickitat Fisheries (YKFP) O & M	199701335
Anadromous Fish	Klickitat Passage & Habitat Preliminary Design	199506800
Anadromous Fish	Klickitat River Sub-Basin Assessment	200001000
Anadromous Fish	Klickitat Tribal Hatchery Preliminary Engineering	198904200
Anadromous Fish	Lagrande USFS District Early Action Projects	199604700
Anadromous Fish	Lake Branch Creek Habitat Improvement	198338600
Anadromous Fish	Land / Water Acquisition Legal Support	199305700
Anadromous Fish	Larval Pacific/River & Western Brook Lampreys Temp	200002900
Anadromous Fish	Law Enforcement Anadromous Salmonids in Mainstem	200005600
Anadromous Fish	Law Enforcement Interagency Task Force Coordin	199202405
Anadromous Fish	Law Enforcement Protection of Salmon Stocks	199202400
Anadromous Fish	Law Enforcement Protection of Salmonids (IDFG)	199202404
Anadromous Fish	Law Enforcement Protection of Salmonids (MTFW)	199202406
Anadromous Fish	Law Enforcement Protection of Salmonids (OR)	199202402
Anadromous Fish	Law Enforcement Protection of Salmonids (WDF)	199202403
Anadromous Fish	Law Enforcement Protection- Salmon Stocks (CRITFC)	199202401
Anadromous Fish	Law Enforcement Transition Funding – CTUIR	199202410
Anadromous Fish	Law Enforcement Transition Funding – Nez Perce	199202408
Anadromous Fish	Law Enforcement Transition Funding – Shoban	199202409
Anadromous Fish	Lemhi Habitat Enhancement Project	199401703
Anadromous Fish	Lemhi River Rehabilitation Study	198402800
Anadromous Fish	Lemhi River streamflow enhancement	200106800
Anadromous Fish	Lick Creek Water Gap II	199708700
Anadromous Fish	Life Cycle of IHN Virus	198815200
Anadromous Fish	Life Studies of Spring Chinook -Grande Ronde River	199202604
Anadromous Fish	Listed Stock Adult Escapement Monitoring	199703000
Anadromous Fish	Listed Stock Chinook Salmon Gamete Preservation	199703800
Anadromous Fish	Literature Review of Flow Fluctuations Effects	198741200
Anadromous Fish	Little Catherine and Lick Creek Restoration	200101900
Anadromous Fish	Little Dark Canyon Creek	199709700
Anadromous Fish	Little Fall Creek Passage Improvement and O & M	198609000
Anadromous Fish	Little Falls Creek Ladder Repair	198612401
Anadromous Fish	Little Fly Meadow Headcut Rehabilitation	199907400

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Program	Project Title	BPA Project #
Anadromous Fish	Little Naches Passage Improvement – Salmon Falls	198607500
Anadromous Fish	Little Naches Riparian and Channel Enhancement	199705000
Anadromous Fish	Little Ponderosa Ranch Purchase, Red River Meadow	199303500
Anadromous Fish	Little Walla Walla Consolidation Milton/Eastside	199601105
Anadromous Fish	Little Walla Walla Screens and Trap	199601101
Anadromous Fish	Little White Hatchery – Umatilla Salmon	198403307
Anadromous Fish	Lolo, Crooked Fork & El Dorado Creeks Habitat Work	198400600
Anadromous Fish	Lolo, Crooked Fork & White Sands Cr Habitat Work	198352200
Anadromous Fish	Lookingglass Creek Road Obliteration	199805500
Anadromous Fish	Lostine & Hurricane Creeks Habitat Projects	199708300
Anadromous Fish	Lostine River Passage	200007500
Anadromous Fish	Lostine River Streamflow Enhancement	200106200
Anadromous Fish	Low Cost Hatchery Facilities Design	198335300
Anadromous Fish	Lower Clearwater Habitat Study	198801500
Anadromous Fish	Lower Columbia Fish Passage Evaluations	199204100
Anadromous Fish	Lower Eldorado Falls Fish Passage Improve Design	199607704
Anadromous Fish	Lower Five Points Off-Site Water Development	199707000
Anadromous Fish	Lower Granite Pool Survival Study	198712900
Anadromous Fish	Lower Klickitat Habitat Enhancement	199705600
Anadromous Fish	Lower Leap Range Improvement, Trout Creek Basin	199605200
Anadromous Fish	Lower Lemhi and Salmon River Passage Restoration	200106700
Anadromous Fish	Lower Snake Compensation Plan PIT Tags	199701800
Anadromous Fish	Lower Umatilla Channel Modifications Assessment	198383400
Anadromous Fish	Lower Valley Consolidated Diversion- Wallowa River	199402704
Anadromous Fish	Lower Yakima River Predation Studies	199506302
Anadromous Fish	M&E of Chinook & Steelhead Outplanting	200105900
Anadromous Fish	M&E of Yearling Fall Chinook Above Lower Granite	199801004
Anadromous Fish	Mainstem & Middle Fork John Day Habitat Work	198402100
Anadromous Fish	Mainstem & Upper John Day Habitat Improvement	198402200
Anadromous Fish	Manchester Spring Chinook Captive Brood	199606700
Anadromous Fish	Marine Fish Predation on Juvenile Salmonids	199702600
Anadromous Fish	Marion Drain Ladder Construction	198710900
Anadromous Fish	Mark Chinook- Rapid River / Pahsimeroi Hatcheries	199206600
Anadromous Fish	Marr Flat Allotment & Big Sheep/Imnaha Fisheries	200005900
Anadromous Fish	Marsh, Elk Creek & Upper Salmon River Habitat Work	198402400
Anadromous Fish	Materials/Supplies- Yakama Early Action Watershed	199608200
Anadromous Fish	Mccoy Cr Alta Cunha Ranches Instream Restoration	200006600
Anadromous Fish	Mccoy Meadows Watershed Restoration	199608301
Anadromous Fish	Mcintyre Creek Road Relocation – USFS	199804300
Anadromous Fish	Mcintyre Road Relocation – Union County	199804900
Anadromous Fish	Mcintyre Road Relocation – USFS	199804901
Anadromous Fish	Mckenzie Focus Watershed	199607000
Anadromous Fish	McNary and Walla Walla Operations and Maintenance	199800406
Anadromous Fish	McNary Dam Juvenile Fish Collection Efficiency	198813400
Anadromous Fish	Meadow Cr Habberstad Property Instream Restoration	200006500
Anadromous Fish	Meadow Creek Enhancement Evaluation – OSU	199703100
Anadromous Fish	Meadow Creek Enhancement Evaluation – USFS	199703101
Anadromous Fish	Meadow Creek Restoration – USFS	199607701
Anadromous Fish	Meadow Creek Restoration Research – UI	199902800
Anadromous Fish	Meadow Creek Riparian Pasture	200006300
Anadromous Fish	Meadow Creek/Cuna Ranches Riparian Restoration	199805300
Anadromous Fish	Measure Mine Drainage Effects Alder Cr / Methow R	199803500
Anadromous Fish	Mesh Restriction Survey/Enhanced Law Enforcement	199805602
Anadromous Fish	Methow River Basin Screening	200106300
Anadromous Fish	Methow River Valley Irrigation District – YN	199603401

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Program	Project Title	BPA Project #
Anadromous Fish	Middle Deschutes Watershed Coordination	199900500
Anadromous Fish	Middle Fork Clark Creek	199702800
Anadromous Fish	Minam / MT Harris Road Improvement- Grande Ronde	199402706
Anadromous Fish	Model Watershed Studies – Lemhi River Basin	199202603
Anadromous Fish	Modeling Optimized Hatchery Production	198908103
Anadromous Fish	Mohawk Watershed Planning and Coordination	199702200
Anadromous Fish	Monitor Smolt Arrival at Lower Granite Dam	198332300
Anadromous Fish	Monitoring & Evaluation-yakima/Klickitat Fisheries	198812011
Anadromous Fish	Monitoring Fine Sediment-Grande Ronde & John Day R	199703400
Anadromous Fish	Monitoring Out Migrating Salmon at Wells Dam -1984	198401500
Anadromous Fish	Monitoring Supplemental Response – Yakima Project	199506406
Anadromous Fish	Multnomah Channel Riparian Habitat Restoration	199906600
Anadromous Fish	Murderers / Deer Creeks Habitat Improvement	198338400
Anadromous Fish	N FK Clark Creek Large Woody Debris Addition	199609100
Anadromous Fish	N Fork Clark Cr / Hindman Rd Crossing Improvement	199709000
Anadromous Fish	National Symposium – Small Hydro Plants & Fish	198534000
Anadromous Fish	NE Oregon Hatchery Master Plan – CTUIR	198805302
Anadromous Fish	NE Oregon Hatchery Master Plan – Nez Perce	198805301
Anadromous Fish	NE Oregon Outplanting Facilities Master Plan (NPT)	198805309
Anadromous Fish	NE Oregon Outplanting Facilities Plan – ODFW	198805305
Anadromous Fish	NE Oregon Spring Chinook Outplanting/Facility	198805300
Anadromous Fish	Neoh Master Plan – CTUIR – Parametrix – Umatilla	198805311
Anadromous Fish	Nepa – Watershed Management Program EIS	199609800
Anadromous Fish	Nepa for Upper Wapato Irrigation Project	199609900
Anadromous Fish	Nepa Studies for Model Watershed Projects	199609700
Anadromous Fish	Nepa Studies for The Metho River Project	199603400
Anadromous Fish	New Fish Tag System	198331900
Anadromous Fish	New PIT Tag Monitoring Equipment	198331901
Anadromous Fish	Newsclips of Idaho Salmon Habitat Projects	198742200
Anadromous Fish	Nez Perce Master Contract	199701500
Anadromous Fish	Nez Perce NF Early Action Watershed Projects	199607700
Anadromous Fish	Nez Perce Technical Support – IDFG	198812600
Anadromous Fish	Nez Perce Tribal Hatchery	198335000
Anadromous Fish	Nez Perce Tribal Hatchery Construction Management	198335005
Anadromous Fish	Nez Perce Tribal Hatchery Monitoring & Evaluation	198335003
Anadromous Fish	Nez Perce Tribal Hatchery O & M	198335006
Anadromous Fish	Nez Perce Tribal Hatchery Planning and Design	198335004
Anadromous Fish	NMFS Net Exchange Program	199805600
Anadromous Fish	Non-Federal Smolt Monitoring (Fish Passage Center)	198712700
Anadromous Fish	Non-Intrusive Gbd Monitoring Technologies	199300801
Anadromous Fish	North Fork John Day Fish Habitat Enhancement	199303800
Anadromous Fish	North Fork John Day Habitat Improvement	198339500
Anadromous Fish	North Fork John Day Habitat Improvement	198400800
Anadromous Fish	NRCS Rosgen Training Support	199903600
Anadromous Fish	Nursery Bridge Local Cost Share	199601201
Anadromous Fish	Nutrient Impact on Salmon Prod in Columbia R Basin	199904000
Anadromous Fish	Nutrient Use From Spawning Salmon By Juv Salmon	199904100
Anadromous Fish	Oak Springs Hatchery Modifications for Hood River	199301901
Anadromous Fish	Ocean Survival of Salmonids	199801400
Anadromous Fish	Off-Site Water Developments	199704600
Anadromous Fish	Okanogan Focus Watershed	199604200
Anadromous Fish	Okanogan Watershed Planning	199502100
Anadromous Fish	Operate and Maintain Umatilla Hatchery Satellites	198343500
Anadromous Fish	Oregon Fish Screens Project	199306600
Anadromous Fish	Orofino Creek Passage Study	198711200

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Program	Project Title	BPA Project #
Anadromous Fish	Pacific Lamprey Population Studies	199402600
Anadromous Fish	Pacific Ocean Salmon Tracking Feasibility Study	200008000
Anadromous Fish	Pahsimeroi River – Patterson / Big Springs Flow	199401701
Anadromous Fish	Panther Creek Habitat Rehabilitation Study	198402900
Anadromous Fish	Passage, Spawning & Identity- Snake River Chinook	199204600
Anadromous Fish	Pataha Basin Habitat Improvements – Seven Sites	199401802
Anadromous Fish	Pataha Creek Early Action Projects	199606600
Anadromous Fish	Pataha Creek Model Watershed Project	199406500
Anadromous Fish	Pataha Creek Stream & Cropland Restoration	199401807
Anadromous Fish	Pataha Creek Stream Channel & Cropland Restoration	199708800
Anadromous Fish	Pataha Watershed Project Planning & Implementation	199902100
Anadromous Fish	Pataha Watershed Riparian & Croplands Restoration	199905900
Anadromous Fish	Path – Facilitation, Tech Assistance & Peer Review	199600600
Anadromous Fish	Path – Participation By State and Tribal Agencies	199600800
Anadromous Fish	Path – Participation By USFWS	199600802
Anadromous Fish	Path Program Technical Support (UW)	199700200
Anadromous Fish	Path Transition Placeholder	199600601
Anadromous Fish	Peavine Creek Habitat Improvement	198339200
Anadromous Fish	Peer Review for Critfc Watershed Projects – 1	199707901
Anadromous Fish	Peer Review for Critfc Watershed Projects -2	199707902
Anadromous Fish	Peer Review for Critfc Watershed Projects -3	199707903
Anadromous Fish	Pelton Dam Ladder Production	198902901
Anadromous Fish	Pen Rearing and Imprinting of Fall Chinook Salmon	198331300
Anadromous Fish	Phillips Creek Road	199702700
Anadromous Fish	Phillips Creek Stream Habitat Enhancement	199709500
Anadromous Fish	Phillips-Gordon Watershed Assessment	200101800
Anadromous Fish	Pine Hollow Watershed Enhancement	199901000
Anadromous Fish	PIT Tag Facilities Improvement	199106400
Anadromous Fish	PIT Tag Purchase FY/87	198712400
Anadromous Fish	PIT Tag Purchases	199008001
Anadromous Fish	PIT Tag System Improvements	199701000
Anadromous Fish	PIT Tagging Hatchery Spring/Summer Chinook – IDFG	199602002
Anadromous Fish	PIT Tagging Hatchery Spring/Summer Chinook – ODFW	199602001
Anadromous Fish	PIT Tagging Hatchery Spring/Summer Chinook – USF&W	199602003
Anadromous Fish	PIT Tagging Hatchery Spring/Summer Chinook – WDFW	199602000
Anadromous Fish	PIT Tagging Rapid River & Pahsimeroi Chinook Stock	199602004
Anadromous Fish	PIT Tagging Wild Chinook	199102800
Anadromous Fish	Pittsburg Landing Acclimation Facility – Snake R	199801005
Anadromous Fish	Pole Creek Irrigation Diversion Screening	198341600
Anadromous Fish	Policy/Technical Involvement and Planning for YKFP	199506425
Anadromous Fish	Post Release Survival of Fall Chinook in Snake R	199102900
Anadromous Fish	Power Peaking Effects- Fall Chinook Egg Incubation	197900300
Anadromous Fish	Pre Design – Johnson Cr Artificial Propagation	199604302
Anadromous Fish	Predation and Development of Prey Protection	198200300
Anadromous Fish	Predation Index / Model & Harvest Option	198201200
Anadromous Fish	Pre-design of Remaining 10 Yakima Screen Projects	198404800
Anadromous Fish	Pre-design Screen / Ladder Studies, Yakima Basin	198400100
Anadromous Fish	Priest Rapids Summer Migration Monitoring	198340600
Anadromous Fish	Produce Unified Trout Creek Project Report	198612100
Anadromous Fish	Production /Habitat – Wild and Natural Salmonids	199402400
Anadromous Fish	Production Goals: Yakima Fall Chinook & Steelhead	199404000
Anadromous Fish	Production Impacts of Various Hatchery Stocks	199005200
Anadromous Fish	Protect & Restore Squaw & Poosee Cr Watersheds	199607703
Anadromous Fish	Protect and Restore Lolo Creek Watershed	199607702
Anadromous Fish	Protect and Restore Mill Creek Watershed	200003600

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Program	Project Title	BPA Project #
Anadromous Fish	Protect Bear Valley Salmon & Steelhead Spawn Hab	200000500
Anadromous Fish	Protect Bear Valley Wild Salmon Spawning Habitat	200103500
Anadromous Fish	Protect ESA Fish With Screens in Walla Walla Basin	200103900
Anadromous Fish	Protect N Lochsa Face Analysis Area Watershed	200003400
Anadromous Fish	Protecting & Restoring Big Canyon Creek Watershed	199901600
Anadromous Fish	Protection of Upper Snake Wild Adult Steelhead	198400200
Anadromous Fish	Provide O&M for Little Fall Creek Passage Project	198612400
Anadromous Fish	Purchase Land at Cle Elum for The Yakima Hatchery	199506900
Anadromous Fish	Purchase Plaques -audio/Visual Support Project	198713400
Anadromous Fish	Qualify/Quantify Residual Steelhead in Clearwater	199901800
Anadromous Fish	Quantify Loss Mitigation for Dam Operations	198404900
Anadromous Fish	Radio Tracking of Chinook – Bonneville to McNary	198201700
Anadromous Fish	Rangeland Grazing Strategies Training Session	199106901
Anadromous Fish	Rapid Diagnosis of IHN Virus	198202000
Anadromous Fish	Recondition Wild Steelhead Kelts	200001700
Anadromous Fish	Reconnect Little Morgan Creek to Pahsimeroi River	200105100
Anadromous Fish	Red & Crooked Rivers Habitat/ Passage Improvements	198400500
Anadromous Fish	Red River Fish Habitat Improvement	198350100
Anadromous Fish	Red River Restoration (Little Ponderosa Ranch)	199303501
Anadromous Fish	Redfish Lake Sockeye Broodstock Rearing/Research	199204000
Anadromous Fish	Redfish Lake Sockeye Rearing and Trapping	199107200
Anadromous Fish	Refinement of Marking Methods for Yakima Fish	199506401
Anadromous Fish	Regional Forum Facilitator	199800800
Anadromous Fish	Rehabilitate Lapwai Creek	199901700
Anadromous Fish	Rehabilitate Newsome Creek – S Fork Clearwater R	200003500
Anadromous Fish	Rehabilitation of Johnson Creek / Cox Ranch	199607706
Anadromous Fish	Reintro of Columbia R Chum Salmon in Duncan Creek	200105300
Anadromous Fish	Reintro Success of Steelhead	200104700
Anadromous Fish	Remove Barriers/Restore Instream Habitat	200000200
Anadromous Fish	Repair Damage From Lower Wenaha Flood	199605700
Anadromous Fish	Replace Chumstick Creek Culvert	199902300
Anadromous Fish	Replacement Pumping to Weid Main Canal	198740900
Anadromous Fish	Research on Anti-Fungal Compounds	198905400
Anadromous Fish	Research Stream Restoration (U of O)	200005101
Anadromous Fish	Research/Evaluate Restoration of NE Oregon Streams	200005100
Anadromous Fish	Reservoir Operations Committee Facilitator	199506600
Anadromous Fish	Restoration of Anadromous Fish Access to Hawley Cr	200105200
Anadromous Fish	Restoration of Watershed, Clearwater Basin	199706000
Anadromous Fish	Restore & Enhance Salmon in The Umatilla Basin	198201000
Anadromous Fish	Restore Anadromous Fish Habitat – Little Canyon Cr	199901400
Anadromous Fish	Restore Anadromous Fish Habitat – Nichols Canyon	199901500
Anadromous Fish	Restore Early Winters Creek Salmonid Habitat	199802500
Anadromous Fish	Restore Mccommas Meadows – NPT	199607705
Anadromous Fish	Restore Salmon River – Challis Area	199901900
Anadromous Fish	Review Columbia Basin Artificial Production	199800405
Anadromous Fish	Review of F&W Production Initiatives	199800500
Anadromous Fish	Review of Umatilla Hatchery Oxygen Design	198403304
Anadromous Fish	Review Proposed Projects & Gas Bubble Trauma	199601400
Anadromous Fish	Ringold Hatchery Water Supply	199205300
Anadromous Fish	Riparian Habitat Education Project	199609500
Anadromous Fish	Riparian Habitat Education Project, Pendleton	199608100
Anadromous Fish	Riparian Recovery: Plant Succession and Salmon	200005000
Anadromous Fish	Rock Creek Watershed Assessment & Restoration	200001100
Anadromous Fish	Roza Dam Juvenile Guidance Behavior -WDFW	199506407
Anadromous Fish	S FK Salmon River Anadromous Fish Enhancement	199303300

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Program	Project Title	BPA Project #
Anadromous Fish	Safety Net Coordinator	200104900
Anadromous Fish	Salmon and Steelhead Exertion Study	200102400
Anadromous Fish	Salmon Creek Fish Barrier Removal and Water Lease	199907500
Anadromous Fish	Salmon Creek Instream Flow & Habitat Survey	199903700
Anadromous Fish	Salmon River Habitat Enhancement and O&M	199405000
Anadromous Fish	Salmon River Production Program	199705700
Anadromous Fish	Salmon Spawning Below Lower Columbia Dams-Doe-pnnl	199900304
Anadromous Fish	Salmon Spawning Below Lower Columbia Dams-ODFW	199900301
Anadromous Fish	Salmon Spawning Below Lower Columbia Dams-USFWS	199900303
Anadromous Fish	Salmon Spawning Below Lower Columbia Dams-USGS	199900305
Anadromous Fish	Salmon Spawning Below Lower Columbia Dams-WDFW	199900302
Anadromous Fish	Salmon Supplementation in Idaho- Shoshone-Bannock	198909803
Anadromous Fish	Salmon Supplementation Studies in Idaho – USFWS	198909801
Anadromous Fish	Salmon Supplementation Studies in Idaho- Nez Perce	198909802
Anadromous Fish	Salmonid Cumulative Exposure to Dissolved Gas	199602500
Anadromous Fish	Salmonid Production in Restored Rattlesnake Creek	200102500
Anadromous Fish	Salmonid Response to Fertilization	200105500
Anadromous Fish	Salmonid Restoration & Recovery Programs	200101200
Anadromous Fish	Sandy River Basin BPA Right-Of-way Study	199303100
Anadromous Fish	Satus Creek Screen & Ladder Construction	198608800
Anadromous Fish	Scientific Review Group Support – DOE	198907201
Anadromous Fish	Self Contained Sound System	199702402
Anadromous Fish	Sheep Creek Watershed Restoration	199803800
Anadromous Fish	Sheep Ranch Riparian Project	199704300
Anadromous Fish	Signs of Gas Bubble Trauma (Gbd) in Salmonids	199300802
Anadromous Fish	Simcoe Creek Streamflow Enhancement	200106400
Anadromous Fish	Slide Show on Columbia Basin Habitat Enhancement	198610500
Anadromous Fish	Smolt and Adult A/V Monitoring Project	198713800
Anadromous Fish	Smolt Marking – USFWS	198300600
Anadromous Fish	Smolt Monitoring -Lower Monumental & Dalles Dams	198508300
Anadromous Fish	Smolt Monitoring at Federal Dams	198401400
Anadromous Fish	Smolt Monitoring for Spill	198401401
Anadromous Fish	Smolt Monitoring for Spill	198712701
Anadromous Fish	Smolt Monitoring Program	198000100
Anadromous Fish	Smolt Passage Behavior and Flow Relationships	198200800
Anadromous Fish	Smolt Physiology – Travel Time and Survival	198740100
Anadromous Fish	Smolt Quality Assessment of Spring Chinook	198904600
Anadromous Fish	Smolt Survival Estimates Through Dams & Reservoirs	199302900
Anadromous Fish	Snake Juvenile Wild Spring Chinook Mortality Study	199101700
Anadromous Fish	Snake River Coho Brood Stock Program	198344100
Anadromous Fish	Snake River Fall Chinook Brood Program	198200700
Anadromous Fish	Snake River Radio Tracking of Chinook & Steelhead	198000200
Anadromous Fish	Snake River Sockeye Habitat & Limnological Study	199107100
Anadromous Fish	Software for Grande Ronde Model Watershed	199703600
Anadromous Fish	South Fork John Day & Mainstem Habitat Improvement	198507100
Anadromous Fish	South Fork Spring Creek Channel Rehabilitation	199609200
Anadromous Fish	South Naches Fish Screens Land Acquisition	199107504
Anadromous Fish	Southeast Washington Species Interaction Study	199005300
Anadromous Fish	Spawning Habitat Model – Snake River Fall Chinook	199406900
Anadromous Fish	Spring Chinook Outmigration in The Willamette	198816003
Anadromous Fish	Squawfish Management	199007700
Anadromous Fish	Squawfish Management Evaluation	199007800
Anadromous Fish	Squawfish Sport Rewards (Psmfc)	199007701
Anadromous Fish	Stanfield Screen Fabrication	198710403
Anadromous Fish	Stanfield/ Mckay Water Release Project	198902701

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Program	Project Title	BPA Project #
Anadromous Fish	Starr Coleman Riparian Restoration	199602900
Anadromous Fish	Steelhead & Fall Chinook Production Objectives	198812009
Anadromous Fish	Stream Habitat Enhancement Evaluation Workshop	198610700
Anadromous Fish	Streambank Restoration – Biomat Project	199608900
Anadromous Fish	Streamwalk Training	199208000
Anadromous Fish	Study Fish Reared in Enriched Oxygen Environment	198816001
Anadromous Fish	Study of Fall Chinook Outplanted-Abv Lower Granite	199801003
Anadromous Fish	Study Stress on Transported Chinook Smolts	198200500
Anadromous Fish	Sunnyside Screens Construction	198405500
Anadromous Fish	Supersaturated Water Effect on Adult Salmonids	200005800
Anadromous Fish	Supplementation of Steelhead Production in Idaho	199005500
Anadromous Fish	Supplemental Flows in Buck Hollow	200105400
Anadromous Fish	Supplemental Oxygen Effectiveness Consultation	198712200
Anadromous Fish	Survey Fish Screens & Ladders at Water Withdrawals	197900500
Anadromous Fish	Survey Hatchery Production in Columbia Basin	198342400
Anadromous Fish	Survey of Artificial Salmon Production Facilities	198405100
Anadromous Fish	Survey of Salmon Cultural Research	198908104
Anadromous Fish	Teanaway River Instream Flow Restoration – BOR	199704900
Anadromous Fish	Teanaway River Instream Flow Restoration – KCCD	199704902
Anadromous Fish	Teanaway River Instream Flow Restoration – NRCS	199704901
Anadromous Fish	Tech Assistance Juv/Adult Migrant M&E Facilities	199207102
Anadromous Fish	Tech Writer Sockeye/Chinook Oversight Committee	199801301
Anadromous Fish	Technical Assistance for Snake River Drawdown	199301000
Anadromous Fish	Technical Assistance With The Life Cycle Model	199303701
Anadromous Fish	Technical Design for Yakima Salmon/Steelhead Prod	199006901
Anadromous Fish	Technical Support – Grand Ronde Model Watershed	199403000
Anadromous Fish	Technical Support for Path – NMFS Staff	199600801
Anadromous Fish	Technical Support for The Path Process	199601700
Anadromous Fish	Technical Support to Path (Dr. James Anderson)	199800600
Anadromous Fish	Temporary Fish Passage on Toppenish Creek	198508500
Anadromous Fish	The Natures (Natural Rearing Enhancement Systems)	199105500
Anadromous Fish	Toppenish Creek and Satus Unit Screens and Ladder	198405800
Anadromous Fish	Toppenish/Simcoe Instream Flow Restoration	199705300
Anadromous Fish	Touchet River Stream Flow Enhancement	200106100
Anadromous Fish	Training Support to Nrcs/Wildland Hydrology	200000600
Anadromous Fish	Tribal Member for Yakima Species Interaction Study	198812003
Anadromous Fish	Trout Cr Irrigation System Replacement-Willowdale2	199900400
Anadromous Fish	Trout Creek Benefit Cost Analysis Refinement	198609300
Anadromous Fish	Trout Creek Culvert Replacement	200100900
Anadromous Fish	Trout Creek Habitat Enhancement Plan	198342300
Anadromous Fish	Trout Creek Operation & Maintenance	199404200
Anadromous Fish	Trout Creek Photomosaics & Benefit/Cost Analysis	198609400
Anadromous Fish	Trout Creek Presentation at BPA Project Review	198611700
Anadromous Fish	Trout Creek Streamflow Enhancement	200105600
Anadromous Fish	Trout Creek watershed Assessment	199802801
Anadromous Fish	Troy Streambank Protection / Wallowa River	199709300
Anadromous Fish	Tucannon Habitat Improvements – Rubenser Site	199401803
Anadromous Fish	Tucannon Large Woody Debris Manipulation	199606502
Anadromous Fish	Tucannon River Bank Control	199401801
Anadromous Fish	Tucannon River Early Action Projects	199606500
Anadromous Fish	Tucannon River Spring Chinook Captive Broodstock	200001900
Anadromous Fish	Tucannon River Watershed Fish Habitat Enhancement	199905700
Anadromous Fish	Tucannon River Watershed Fish Habitat Restoration	199708100
Anadromous Fish	Tucannon Rootwad Collection	199606501
Anadromous Fish	Tucannon Stream & Riparian Restoration	199401806

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Program	Project Title	BPA Project #
Anadromous Fish	Tuccanon Watershed Project Implementation	199900100
Anadromous Fish	Tumwater Falls / Dryden Dams Passage Plans	198344600
Anadromous Fish	Tumwater/ Dryden Passage Environmental Assessment	198508600
Anadromous Fish	Tybo Canyon Laefy Spurge Project	199704500
Anadromous Fish	Umatilla – Columbia Water Exchange Project	198902700
Anadromous Fish	Umatilla Basin Habitat Project Coordination	199608500
Anadromous Fish	Umatilla Basin Natural Production M&E	199000501
Anadromous Fish	Umatilla Basin Salmon & Steelhead Restoration Plan	198401000
Anadromous Fish	Umatilla Basin Stream Habitat Enhancement	199604500
Anadromous Fish	Umatilla Fish Habitat Improvement / ODFW	198710002
Anadromous Fish	Umatilla Habitat Improvement / CTUIR	198710001
Anadromous Fish	Umatilla Habitat Improvement/ USFS	198710000
Anadromous Fish	Umatilla Hatchery	198403300
Anadromous Fish	Umatilla Hatchery – Cost Verification	198403301
Anadromous Fish	Umatilla Hatchery – Design Change Order Consultant	198403305
Anadromous Fish	Umatilla Hatchery – Design Review	198403302
Anadromous Fish	Umatilla Hatchery – M&E Projects	199000500
Anadromous Fish	Umatilla Hatchery – Master Plan	198741500
Anadromous Fish	Umatilla Hatchery – Tribal Fish Culture Training	198403303
Anadromous Fish	Umatilla Hatchery – Water Supply	198403306
Anadromous Fish	Umatilla Hatchery -Nepa & Operations & Maintenance	198903500
Anadromous Fish	Umatilla Passage Improvements – Cold Sprngs	198741601
Anadromous Fish	Umatilla Passage Improvements – Maxwell Diversion	198741600
Anadromous Fish	Umatilla Passage Improvements- Stanfield Diversion	198710401
Anadromous Fish	Umatilla Passage Improvements- Westland Diversion	198710400
Anadromous Fish	Umatilla Passage O & M	198343600
Anadromous Fish	Umatilla River Basin Fish Habitat Improvement	199607300
Anadromous Fish	Umatilla River Basin Fish Passage Improvement	199607100
Anadromous Fish	Umatilla River Basin Trap and Haul Program	198802201
Anadromous Fish	Umatilla River Basin Trap and Haul Program	198802200
Anadromous Fish	Umatilla River Channel Modification	198343400
Anadromous Fish	Umatilla River Project Slide Show	198741900
Anadromous Fish	Umatilla River Riparian Corridor	199506000
Anadromous Fish	Umatilla Satellites – Planning & Construction	199101400
Anadromous Fish	Union County Public Works – Early Action Projects	199606300
Anadromous Fish	Union County Public Works – Old Projects	199606200
Anadromous Fish	Union County SWCD Early Action Projects	199605500
Anadromous Fish	Union County SWCD Old Projects	199605600
Anadromous Fish	Union County Technical Engineering Assistance	199904300
Anadromous Fish	Union County Watershed Projects – SWCD	199703200
Anadromous Fish	Union Wastewater Plant Improvements, Grande Ronde	199608800
Anadromous Fish	Update Tensionsometer Equipment	198712800
Anadromous Fish	Update Yakima Fisheries Project Economic Analysis	199505500
Anadromous Fish	Upper Grande Ronde & Catherine Cr/Usfs WS Rest	199905800
Anadromous Fish	Upper Grande Ronde & Sheep Cr Instream Structures	199707200
Anadromous Fish	Upper Grande Ronde (Large Woody Debris)	199402705
Anadromous Fish	Upper Grande Ronde Riparian Rehabilitation	199707300
Anadromous Fish	Upper Grande Ronde River Riparian Fencing	199703300
Anadromous Fish	Upper Grande Ronde River Whole Tree Project	199707400
Anadromous Fish	Upper Klickitat Meadows Riparian Restoration	199705400
Anadromous Fish	Upper Salmon River Anadromous Fish Passage	199306200
Anadromous Fish	Upper Salmon River Diversion Consolidation Program	199600700
Anadromous Fish	Upper Toppenish Creek Screen Construction	198608900
Anadromous Fish	Upper Toppenish Creek Watershed Restoration	199803300
Anadromous Fish	Upper Wildcat & Joseph Creek Watershed Improvement	200006100

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Program	Project Title	BPA Project #
Anadromous Fish	Upper Yakima River Species Interaction Studies	199506402
Anadromous Fish	Upriver Egg Take at Bonneville Dam	198202300
Anadromous Fish	Upstream Migration Pacific Lampreys John Day River	200005200
Anadromous Fish	Vernita Bar Redd Surveys	199301500
Anadromous Fish	Video of Wild Spring Chinook Spawning – MT Hood NF	198612200
Anadromous Fish	Video of Yakima Fish Passage Project	198610100
Anadromous Fish	Video of Yakima Phase II Screen Project	198713403
Anadromous Fish	Wagner Ranch Acquisition	200104000
Anadromous Fish	Walla Walla & Touchet Rivers & Mill Cr Restoration	199708500
Anadromous Fish	Walla Walla Basin Anadromous Fish Passage	199601200
Anadromous Fish	Walla Walla Basin Flow Enhancement	200107500
Anadromous Fish	Walla Walla Basin Stream Habitat Enhancement	199604600
Anadromous Fish	Walla Walla River Basin Fish Habitat – SWCD	199606400
Anadromous Fish	Walla Walla River Basin Fish Habitat Enhancement	199604601
Anadromous Fish	Walla Walla River Basin Monitoring and Evaluation	200003900
Anadromous Fish	Walla Walla River Fish Passage Operations	200003300
Anadromous Fish	Walla Walla River Passage O&M Nursery Bridge Power	200003301
Anadromous Fish	Wallowa Basin Project Planning	199403900
Anadromous Fish	Wallowa County Direct Seeding	199907700
Anadromous Fish	Wallowa County Gauging Stations	199907000
Anadromous Fish	Wallowa County Technical Engineering Assistance	199904400
Anadromous Fish	Wallowa County/Nez Perce Salmon Habitat Recovery	199702500
Anadromous Fish	Wallowa SWCD – Early Action Projects	199606100
Anadromous Fish	Wallowa SWCD – Old Projects	199606000
Anadromous Fish	Wallowa SWCD Streambank Protection	199700800
Anadromous Fish	Wallowa Valley USFS District Early Action Projects	199604900
Anadromous Fish	Wapato Screen and Ladder Construction	198405700
Anadromous Fish	Wapatox Water rights Purchase	200107100
Anadromous Fish	Warm Spring Creek Riparian Improvement	199709600
Anadromous Fish	Warm Springs Habitat / Production Assessment	198110800
Anadromous Fish	Warm Springs Habitat Enhancement and O&M	199405600
Anadromous Fish	Warm Springs Reservation Watershed Enhancement	199900700
Anadromous Fish	Warm Springs Reservation Watershed Enhancement	199802400
Anadromous Fish	Warm Springs River Stream Survey	199701600
Anadromous Fish	Warm Springs Watershed Materials & Supplies #2	199802402
Anadromous Fish	Warm Springs Watershed Restoration Mat & Supplies	199802401
Anadromous Fish	Washington Model Watershed Habitat Projects	199401800
Anadromous Fish	Washington DOE Water Transactions	200107900
Anadromous Fish	Water Acquisition Pilot Project	199304400
Anadromous Fish	Water Budget Management	198353600
Anadromous Fish	Water Budget Management Positions	198349100
Anadromous Fish	Water Budget Technical Support	198904700
Anadromous Fish	Water Purchase Acquisition/Lease Fee/Purchase Opt	199305500
Anadromous Fish	Water Quality Monitoring for Grande Ronde Basin	199710100
Anadromous Fish	Water Rights Acquisition Program	199908800
Anadromous Fish	Water Temp Manipulation & Data Sharing Software	199904500
Anadromous Fish	Watershed Response of Stream Habitat to Mine Waste	199803501
Anadromous Fish	Watershed/Habitat Materials & Supplies	199602700
Anadromous Fish	WDFW Coded-Wire Tag of Upper Yakima Spring Chinook	199506411
Anadromous Fish	WDFW Mid-Columbia Coho Policy & Technical Support	199604010
Anadromous Fish	Wdfw/Ykfp Supplementation Monitoring Activities	199506424
Anadromous Fish	Weid Main Canal Pumping – Umatilla Basin	198805000
Anadromous Fish	West Fork Hood River Passage	198334100
Anadromous Fish	Westside Ditch Screen Construction	198710800
Anadromous Fish	Wet Meadow Inventory and Assessment	199904700

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Program	Project Title	BPA Project #
Anadromous Fish	White River Falls Fish Passage Impact Study	198444000
Anadromous Fish	White River Falls Passage Study	198345000
Anadromous Fish	White Salmon River Watershed Enhancement	200105000
Anadromous Fish	Wild Smolt Behavior and Physiology	199202200
Anadromous Fish	Wildcat Creek Culvert Replacement	199907200
Anadromous Fish	Willamette Spring Chinook Study	198506800
Anadromous Fish	Wind River Watershed	199801900
Anadromous Fish	Wind River Watershed – UCD	199801904
Anadromous Fish	Wind River Watershed – USFS	199801903
Anadromous Fish	Wind River Watershed – USGS	199801901
Anadromous Fish	Wind River Watershed – WDF&W	199801902
Anadromous Fish	Workshop on Small Hydropower Plants	198300400
Anadromous Fish	Workshop on Smoltification Research	198405200
Anadromous Fish	Yakama Tribal Fisheries Technician Activities	198812008
Anadromous Fish	Yakama Tribe: Early Implementation Projects 1996	199603300
Anadromous Fish	Yakima – Species Interaction Study	198910500
Anadromous Fish	Yakima / Klickitat Fisheries Management	199506200
Anadromous Fish	Yakima Adult and Juvenile Trapping Design	199104500
Anadromous Fish	Yakima Basin Benthic Index of Biotic Integrity	200004800
Anadromous Fish	Yakima Basin Environmental Education	199405900
Anadromous Fish	Yakima Basin Fish Facilities O&M	199503300
Anadromous Fish	Yakima Biospecification Interface	199403700
Anadromous Fish	Yakima Cle Elum Hatchery O & M	199701300
Anadromous Fish	Yakima Data Processing & Information Management	199506304
Anadromous Fish	Yakima Engineer Assistance	198812002
Anadromous Fish	Yakima Experimental Design Development	199202100
Anadromous Fish	Yakima Fish Passage Video Monitoring	198812005
Anadromous Fish	Yakima Fishery Film	198713401
Anadromous Fish	Yakima Habitat Enhancement – Selah/Union Gap	199705200
Anadromous Fish	Yakima Hatchery – Acclimation Site Construction	198811516
Anadromous Fish	Yakima Hatchery – Basin Water Analysis	198814900
Anadromous Fish	Yakima Hatchery – Cle Elum Well Field Development	198811503
Anadromous Fish	Yakima Hatchery – Construction	198811500
Anadromous Fish	Yakima Hatchery – Coordination Irrigation District	198812300
Anadromous Fish	Yakima Hatchery – Economic Study	198816700
Anadromous Fish	Yakima Hatchery – Environmental Assessment Review	198910000
Anadromous Fish	Yakima Hatchery – Experimental Design – WDF	198908200
Anadromous Fish	Yakima Hatchery – Experimental Design – WDW	198908300
Anadromous Fish	Yakima Hatchery – Final Design	199006900
Anadromous Fish	Yakima Hatchery – Master Plan Development	198713500
Anadromous Fish	Yakima Hatchery – Preliminary Engineering	198904300
Anadromous Fish	Yakima Hatchery – Project Leader Function	199005800
Anadromous Fish	Yakima Hatchery – Wapato Canal Pen Rearing	198713600
Anadromous Fish	Yakima Hatchery – Wells Ce5/Ce6 (Land Purchase)	198811504
Anadromous Fish	Yakima Hatchery Acclimation Sites Groundwater	198811502
Anadromous Fish	Yakima Hatchery Construction-Housing Units Phase 2	198811518
Anadromous Fish	Yakima Hatchery Construction-River Water Cooling	198811517
Anadromous Fish	Yakima Hatchery Final Design Acclimation Sites	199006905
Anadromous Fish	Yakima Hatchery Final Design/Acclimation Permits	199006904
Anadromous Fish	Yakima Hatchery Final Design/Instrumentation/serv	199006903
Anadromous Fish	Yakima Hatchery Final Design/Well Field Developmen	199006902
Anadromous Fish	Yakima Hatchery Fish Predation on Wild Smolts	199506303
Anadromous Fish	Yakima Hatchery Spring Chinook Acclimation Sites	198811514
Anadromous Fish	Yakima Hatchery Training and Education	198812004
Anadromous Fish	Yakima Indian Nation Watershed Restoration	199603500

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Program	Project Title	BPA Project #
Anadromous Fish	Yakima Natural Production and Enhancement Program	198812000
Anadromous Fish	Yakima Passage Predesign – Remaining Phase I Sites	198609100
Anadromous Fish	Yakima Phase II Screens – Construction	199107500
Anadromous Fish	Yakima Phase II Screens – Fabrication	199105700
Anadromous Fish	Yakima Phase II Screens – Predesign Group I	198909000
Anadromous Fish	Yakima Policy / Technical Involvement & Planning	199506404
Anadromous Fish	Yakima River & Marion Drain Fall Chinook Project	199603301
Anadromous Fish	Yakima River Coho Restoration (YN)	199603302
Anadromous Fish	Yakima River Side Channel Survey & Rehabilitation	199704700
Anadromous Fish	Yakima River Side Channels	199705100
Anadromous Fish	Yakima River Spring Chinook Enhancement Study	198201600
Anadromous Fish	Yakima Screens – Fogarty Land Acquisition	199107501
Anadromous Fish	Yakima Screens – Moxee Hubbard Land Acquisition	199107502
Anadromous Fish	Yakima Screens – Phase II – O & M	199200900
Anadromous Fish	Yakima Screens – Selah Moxee Land Acquisition	199107503
Anadromous Fish	Yakima Spring Chinook Genetic Management Framework	199506403
Anadromous Fish	Yakima Spring Chinook Natural Production Objective	198812007
Anadromous Fish	Yakima Spring Chinook Salmon Interaction/Indices	199506409
Anadromous Fish	Yakima Tribal Fisheries Technicians (1993)	198812006
Anadromous Fish	Yakima Watershed Restoration – Satus Creek – YIN	199603501
Anadromous Fish	Yakima Watershed Restoration – Wilson Creek	199603502
Anadromous Fish	Yakima/ Klickitat Fisheries Project Management	198812001
Anadromous Fish	Yakima/ Klickitat Fisheries Scientific Management	199506400
Anadromous Fish	Yakima/ Klickitat Salmonid Radio Telemetry Study	198908900
Anadromous Fish	Yakima/Klickitat Fisheries Program	199701325
Anadromous Fish	Yakima/Klickitat Monitoring and Evaluation Program	199506300
Anadromous Fish	YIN Hatchery Training and Education	198812026
Anadromous Fish	YKFP – Design and Construction	198811525
Anadromous Fish	YKFP – Management Data and Habitat	198812025
Anadromous Fish	YKFP – Operations and Maintenance	199701725
Anadromous Fish	YKFP – Yakima / Klickitat Fisheries M & E	199506325
Anadromous Fish	YKFP O&M for Yakima River Fall Chinook and Coho	199603330
Anadromous Fish	YKRP Development of Bird Predation Index -WDFW	199506408
Anadromous Fish	YN – Coho Supplementation – Yakima R Construction	199603327
Anadromous Fish	YN – Coho Supplementation in Mid Columbia O&M/M&E	199604020
Anadromous Fish	YN – Coho Supplementation Yakima River O&M/M&E	199603325
Anadromous Fish	YN-Coho Supplementation Mid-Columbia Construction	199604022
Resident Fish	(Phase IV) Resident Fish Loss Assessment	199501400
Resident Fish	Archaeological Survey – Galbraith Springs	198802401
Resident Fish	Assess Bull Trout- MF Willamette / Mckenzie Basins	199405300
Resident Fish	Assess Fishery & Needs – Pend Oreille River	198806600
Resident Fish	Assess Genetics of Columbia Basin White Sturgeon	199902200
Resident Fish	Assess Resident Fish Owyhee Dvir	200007900
Resident Fish	Assessment of Fishery Improvement at Moses Lake	199502800
Resident Fish	Billy Shaw Construction	199501505
Resident Fish	Biological Rule Curves – Hungry Horse / Libby Dams	199501200
Resident Fish	BOR Technical Review Billy Shaw Dam, Duck Valley	199501502
Resident Fish	Bull Trout Assessment in The Columbia River Gorge	199902400
Resident Fish	Bull Trout Biological Assessment	199805800
Resident Fish	Bull Trout Life History Project – NE Oregon	199405400
Resident Fish	Cabinet Gorge Hatchery	198401900
Resident Fish	Cabinet Gorge Hatchery Improvements	199400400
Resident Fish	Chief Joseph Kokanee Enhancement Project	199501100
Resident Fish	Chief Joseph Kokanee Enhancement Project	199405200
Resident Fish	Coeur Reservation Fishery Enhancement	199004400

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Program	Project Title	BPA Project #
Resident Fish	Coeur Trout Production Facility	199004402
Resident Fish	Columbia River White Sturgeon Study	198331600
Resident Fish	Colville Tribal Fish Cultural Training Program	198503801
Resident Fish	Colville Tribal Hatchery Construction and O&M	198503800
Resident Fish	Colville Tribal Hatchery Operation and Maintenance	199402900
Resident Fish	Construct Sherman Creek Kokanee Hatchery	199008600
Resident Fish	Creston Nfh Production & Nonnative Fish Removal	199101904
Resident Fish	Cumulative Impact of Micro Hydro Sites, Swan R	198201900
Resident Fish	Determine Fish Habitat Losses- South Fork Flathead	198502300
Resident Fish	Develop Breeding Plans for Kootenai Fish Species	199302700
Resident Fish	Develop Work Plan for Sturgeon Research	198506400
Resident Fish	Document Native WA Trout Populations	199802600
Resident Fish	Duck Valley Reservation Habitat Enhancement	199701100
Resident Fish	Duck Valley Resident Fish Project	198815600
Resident Fish	Duck Valley Resident Fish Stocking	198815601
Resident Fish	Dworshak Resident Fish Study / IDFG	198709900
Resident Fish	Effects of Kerr & Hungry Horse Dams on Kokanee	198110500
Resident Fish	Engineering Evaluation of Cabinet Gorge Hatchery	198612000
Resident Fish	Eval Sediment Transport Spawn Habitat Kootenai ID	200003700
Resident Fish	Evaluate Kokanee Stocking & Cabinet Gorge Hatchery	198533900
Resident Fish	Evaluate Nutrients & Benthic Periphyton	200101300
Resident Fish	Evaluate Snake River Sturgeon Population	199700900
Resident Fish	Evaluate Sturgeon Habitat Needs – Columbia & Snake	198605000
Resident Fish	Evaluation of The Banks Lake Fishery	200102800
Resident Fish	Experimental Kootenai Sturgeon Hatchery & Research	198806400
Resident Fish	Experimental White Sturgeon Supplement Research	198605001
Resident Fish	Film John Day Sturgeon Activities	198740800
Resident Fish	Fishery Habitat Improvements – Flathead Basin	199101903
Resident Fish	Flathead Focus Watershed Coordination	199608701
Resident Fish	Flathead Lake – Monitoring for Kokanee Success	199101901
Resident Fish	Flathead Model Watershed	199502600
Resident Fish	Flathead River Fish and Wildlife Film	198712000
Resident Fish	Flathead River Fishery Monitoring & Enhancement	199101902
Resident Fish	Flathead River Instream Flow	199502500
Resident Fish	Flathead River Native Species – MFWP	199401002
Resident Fish	Ford Hatchery Improvement Operations & Maintenance	200102900
Resident Fish	Genetic Inventory – Westslope Cutthroat Trout	199501600
Resident Fish	Habitat Improvement – Fort Hall Bottoms	199201000
Resident Fish	Habitat Projects – Lake Roosevelt Tributaries	199001800
Resident Fish	Hungry Horse – Excessive Withdrawal Mitigation	199401000
Resident Fish	Hungry Horse Fisheries Mitigation	199101900
Resident Fish	Hungry Horse Reservoir Impacts on Resident Fish	198346500
Resident Fish	Hungry Horse Resident Fish Hatcheries	199301600
Resident Fish	Hungry Horse Selective Withdrawal Design	199305400
Resident Fish	Hydroacoustic and Sonic Tag Tracking	199501101
Resident Fish	Implement Fisheries Enhancement Couer IR	200103200
Resident Fish	Implementation Plan for MT Resident Fish Measures	198300500
Resident Fish	Intermountain Province Resident Fish Symposium	200103100
Resident Fish	Kalispel Bass Hatchery O&M	199500102
Resident Fish	Kalispel Box Canyon Watershed Project	199700300
Resident Fish	Kalispel Resident Fish Habitat Improvement	199500103
Resident Fish	Kalispel Resident Fish Hatchery Construction	199500101
Resident Fish	Kalispel Tribe Resident Fish Project	199500100
Resident Fish	Kokanee Impacts- Lake Pend Orielle	199403500
Resident Fish	Kootenai Focus Watershed Coordination	199608702

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Appendix H: BPA Fish and Wildlife Projects

Program	Project Title	BPA Project #
Resident Fish	Kootenai River Fisheries Investigations	198806500
Resident Fish	Kootenai River Resident Fish Assessments	199404900
Resident Fish	Kootenai River Tributaries Flow & Fish Study	198500600
Resident Fish	Kootenai River White Sturgeon – M & E	199401200
Resident Fish	Lake Billy Chinook Crayfish	199503000
Resident Fish	Lake Billy Shaw – Duck Valley Reservation	199501500
Resident Fish	Lake Billy Shaw Final Design, Duck Valley	199501503
Resident Fish	Lake Billy Shaw O&M	199501506
Resident Fish	Lake Billy Shaw Research Development	199501504
Resident Fish	Lake Billy Shaw Tribal Coordinator	199501501
Resident Fish	Lake Creek Land Acquisition – Coeur Basin	199004401
Resident Fish	Lake Pend Oreille Kokanee Mitigation Research	199404700
Resident Fish	Lake Roosevelt Colville Fish Restoration	200106600
Resident Fish	Lake Roosevelt Data Collection	199404300
Resident Fish	Lake Roosevelt Kokanee & Stream Projects M&E	198806300
Resident Fish	Lake Roosevelt Kokanee Net Pens	199800400
Resident Fish	Lake Roosevelt Kokanee Net Pens	200001800
Resident Fish	Lake Roosevelt Rainbow Trout Net Pens	199500900
Resident Fish	Lake Roosevelt Sturgeon	199502700
Resident Fish	Libby Reservoir Levels & Impacts on Resident Fish	198346700
Resident Fish	Libby Reservoir Mitigation Plan	199500400
Resident Fish	Lower Flathead River Fisheries Study	198300100
Resident Fish	Master Plan/ Sho-Ban & Sho-Piute Trout Hatchery	199500600
Resident Fish	Mit Excessive Drawdowns Hungry Horse Component	199903100
Resident Fish	Mit Excessive Drawdowns Hungry Horse/Libby Res	199903000
Resident Fish	Mitigation for Excessive Drawdown -Libby Reservoir	199401001
Resident Fish	N Fork Malheur Bull & Redband Trout Life History	199701901
Resident Fish	Nez Perce Dworshak Model for Rainbow Trout & Bass	198740700
Resident Fish	Nez Perce Trout Ponds – Design, Construct and O&M	199501300
Resident Fish	Painted Rocks Reservoir Water Management Plan	198346300
Resident Fish	Protect Wigwam R Bull Trout-Kooscanusa Reservoir	200000400
Resident Fish	Reallocation- Spokane Tribal & Sherman Cr Hatchery	199009500
Resident Fish	Resident Fish Above Chief Joe & Grand Coulee Dams	199700400
Resident Fish	Resident Fish Above Chief Joe & Grand Coulee Dams	199706900
Resident Fish	Sherman Creek Hatchery – O&M	199104700
Resident Fish	Sherman Creek Hatchery Equipment	199008700
Resident Fish	Sherman Pass Scenic Byway Center	199300300
Resident Fish	Snake River Native Salmonid Assessment	199800200
Resident Fish	Spokane (Galbraith Springs) Tribal Hatchery	198806200
Resident Fish	Spokane Tribal (Galbraith Springs) Hatchery – O&M	199104600
Resident Fish	Spokane Tribal Hatchery – Engineering Consultant	198806201
Resident Fish	Spokane Tribal Hatchery Equipment	198806202
Resident Fish	Spokane Tribal Hatchery Manager Training Program	199007600
Resident Fish	Spokane Tribal Hatchery Residence	198806203
Resident Fish	Stinking Water Salmonoid Project	199701900
Resident Fish	Study Proposed Tribal Trout Hatchery (Snake Basin)	199102700
Resident Fish	Sturgeon Study- Hells Canyon & Oxbow Reservoirs	199903200
Resident Fish	Warm Springs Tribe Crayfish Study	199505400
Resident Fish	White Sturgeon Life History and Genetics Study	198904400
Resident Fish	White Sturgeon Workshop	198301200
Wildlife	Acquisition of Malheur Wildlife Mitigation Site	200002700
Wildlife	Acquisition of Pine Creek Ranch	199802200
Wildlife	Albeni Falls Dam W/L Mitigation – Kalispel Tribe	199206102
Wildlife	Albeni Falls Wildlife Loss Study & Mitigation Plan	198704300
Wildlife	Albeni Falls Wildlife Mitigation Kootenai Tribe ID	199206105

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Program	Project Title	BPA Project #
Wildlife	Amazon Basin (Willow Creek – Eugene Wetlands)	199205900
Wildlife	Black Canyon & Anderson Ranch Dams – Wildlife Loss	198500100
Wildlife	Blue Creek Winter Range – Spokane Reservation	199106200
Wildlife	Bonneville Dam Wildlife Loss Study	198711000
Wildlife	Boundary Creek Wildlife Mitigation	199206104
Wildlife	BPA – James Property Purchase – Steigerwald Nwr	199601800
Wildlife	Burlington Bottoms – Phase I	199107800
Wildlife	Burlington Bottoms Bridge Construction	199805700
Wildlife	Burlington Bottoms Land Purchase	199107801
Wildlife	Burns-Paiute Tribe Fish and Wildlife Coordinator	199501900
Wildlife	Cabinet Gorge Eagle Study	198601400
Wildlife	Camas Prairie Wildlife Mitigation Project Phase I	199206000
Wildlife	Chief Joseph Dam Wildlife Loss Study & Mitigation	198804400
Wildlife	Columbia Basin Habitat Unit Acquisition – WDF&W	199609400
Wildlife	Columbia Basin Wildlife Mitigation Status Report	198347800
Wildlife	Colville Confederated Tribe Hep Training	199904800
Wildlife	Colville Tribe Habitat Unit Acquisition	199506700
Wildlife	Colville Wildlife Mitigation Coordination	199404100
Wildlife	Conforth Ranch – Hazardous Waste Disposal	199600900
Wildlife	Conforth Ranch Land Purchase	199009201
Wildlife	Conforth Ranch Road Repair	199507200
Wildlife	Conforth Ranch: Clean Generator	199606900
Wildlife	Craig Mountain (Dworshak Wildlife) Management	199206900
Wildlife	CTUIR Habitat Units Acquisition	199710000
Wildlife	Deer Parks Complex Wildlife Habitat	199505704
Wildlife	Develop NW Montana Wildlife Enhancement Plans	198705500
Wildlife	Douglas County Pygmy Rabbit Habitat Project	199404400
Wildlife	Dworshak Wildlife Mitigation & Enhancement	198815400
Wildlife	Dworshak Wildlife Mitigation Agreement Mediation	199406000
Wildlife	Dworshak Wildlife Mitigation and Enhancement Plan	198711100
Wildlife	Dworshak Wildlife Mitigation and Enhancement Plan	198740600
Wildlife	Dworshak Wildlife Mitigation Trust	199205700
Wildlife	Eagle Lakes Ranch Acquisition and Restoration	200002500
Wildlife	Film of West Montana BPA Fish & Wildlife Projects	198610600
Wildlife	Filming of The Bighorn Sheep Project, Montana	198610000
Wildlife	Flathead Lake Level Impact on Canadian Geese	198300200
Wildlife	Forage Quality & Mule Deer Condition-N Washington	200103400
Wildlife	Gap Analysis – ODFW	199506500
Wildlife	Grand Coulee Wildlife Mitigation Plan	198607400
Wildlife	Hellsgate Big Game Winter Range – Colville Tribe	199204800
Wildlife	Henrys Fork River – Kinghorn Property	199206001
Wildlife	Hep Training	199804800
Wildlife	Hungry Horse & Clark Fork Effect on Wildlife	198346400
Wildlife	Hungry Horse Dam Wildlife Habitat Enhancement	198811300
Wildlife	Kalispel – Pend Oreille Wetlands 2	199106001
Wildlife	Kalispel – Pend Oreille Wetlands Acquisition	199106000
Wildlife	Ladd Marsh	199905600
Wildlife	Lake Roosevelt Peregrine Falcon Reintroduction	199204700
Wildlife	Libby Dam Wildlife Enhancement Project	199004900
Wildlife	Libby Dam Wildlife Habitat Enhancement	198804300
Wildlife	Little Pend Oreille River (WEIR)	199803600
Wildlife	Logan Valley Wildlife Mitigation Project	200000900
Wildlife	Lower Clearwater Aquatic Mammal Study	199005100
Wildlife	Lower Columbia Hydroprojects Wildlife Losses	198801200
Wildlife	Lower Columbia Wildlife Mitigation Plan	199002500

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Appendix H: BPA Fish and Wildlife Projects

Program	Project Title	BPA Project #
Wildlife	Lower Yakima Valley Riparian/Wetlands – Phase I	199206200
Wildlife	Minidoka Dam Wildlife Mitigation Plan	198902200
Wildlife	Minidoka Dam Wildlife Mitigation Plan	199005000
Wildlife	Minidoka Wildlife Loss Study and Mitigation Plan	198811000
Wildlife	Montana Wildlife Conservation Easement	198814700
Wildlife	Montana Wildlife Easements & Land Acquisition Plan	198706000
Wildlife	Montana Wildlife Habitat Protection	198902300
Wildlife	Montana Wildlife Trust	198905200
Wildlife	Nez Perce NE Oregon Wildlife Project: Helm Tract	199608000
Wildlife	Oregon Wildlife Mitigation Sites	199705900
Wildlife	Oregon Wildlife Mitigation Sites – ODFW	199705903
Wildlife	Oregon Wildlife Mitigation Sites – USFWS	199705901
Wildlife	Oregon Wildlife Mitigation Sites -CTWSIR	199705902
Wildlife	Oregon Wildlife Trust Program Planning	199208400
Wildlife	Pend Oreille Wildlife Mitigation O&M – IDFG	199206103
Wildlife	Pend Orielle Wetlands – IDFG Moa	199206101
Wildlife	Pend Orielle Wetlands – IDFG Phase I	199206100
Wildlife	Point Grounds Improvements	199701200
Wildlife	Protect & Restore W1 Habitat Couer IR	200103300
Wildlife	Purchase Dworshak Old Growth	199009100
Wildlife	Rainwater Wildlife Area Operations & Maintenance	200002600
Wildlife	Range Management -Swanson Lake Sharp-Tailed Grouse	199204200
Wildlife	Rasor Ranch Acquisition Crab Cr WS Restoration	199902700
Wildlife	Restore Habitat Sharp-Tailed Grouse Colville Tribe	200103000
Wildlife	Sandy River Wetlands Restoration & Evaluation	199902500
Wildlife	Scotch Creek Wildlife Area	199609401
Wildlife	Scotch Creek Wildlife Enhancement	199505600
Wildlife	Shoshone-Paiute Tribes – Wildlife Coordination	199903800
Wildlife	Soda Springs Hills Wildlife Mitigation O&M	199505705
Wildlife	South Daho Wildlife Mitigation Projects -(IDFG)	199505701
Wildlife	South Fork Snake (Soda Hills)	199505703
Wildlife	South Fork Snake / Sand Creek Wildlife Projects	199505700
Wildlife	South Fork Snake Wildlife Riparian Project	199106300
Wildlife	Southern Idaho Wildlife Mitigation – Shoban Tribes	199505702
Wildlife	Spokane Tribe Grande Coulee Mitigation	199800300
Wildlife	Squaw Creek Watershed Wildlife Project	199506001
Wildlife	Steigerwald / Burlington Northern	199904600
Wildlife	Straub Wildlife Area (Steigerwald NWR)	199502300
Wildlife	Swanson Lakes Sharp Tailed Grouse Management	199106100
Wildlife	Tualatin River National Wildlife Refuge Additions	199705916
Wildlife	Tualatin River National Wildlife Refuge Additions	200001600
Wildlife	Umatilla Tribe Wildlife Coordination	199500800
Wildlife	Upper Snake Hydro Projects Wildlife Mitigation	198607300
Wildlife	Ural-Tweed Bighorn Sheep Habitat Improvement	198403800
Wildlife	Ural-Tweed Bighorn Sheep Population Study	198403900
Wildlife	Vancouver Lowlands Wildlife Tract	199204900
Wildlife	Video of Cabinet Gorge Hatchery & Eagle Project	198609900
Wildlife	Video Production on Bighorn Sheep in Montana	198609700
Wildlife	Wanaket Wildlife Area (Conforth Ranch) Management	199009200
Wildlife	Washington Coalition Wildlife Mitigation Agreement	199305800
Wildlife	Washington Wildlife Coordination	199306300
Wildlife	Water Level Impacts on Flathead Geese	198349800
Wildlife	Western Pond Turtle Recovery in Columbia R Gorge	200102700
Wildlife	Wildlife Acquisition EIS	199604100
Wildlife	Wildlife Loss Assessment for Palisades Dam	198403700

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Program	Project Title	BPA Project #
Wildlife	Wildlife Mitigation M & E	199706401
Wildlife	Wildlife Mitigation Sites Oregon, Horn Butte	200002300
Wildlife	Wildlife Mitigation Sites Oregon, Irrigon Addition	200002200
Wildlife	Wildlife Plan: Standardize M & E	199706400
Wildlife	Willamette Basin Mitigation	199206800
Wildlife	Willamette Hydro Projects – Wildlife Mitigation	198606400
Wildlife	Willamette Hydro Projects Wildlife Loss Study	198403600
Wildlife	WL Mitigation Sites Oregon, Ladd Marsh Additions	200002100
Wildlife	WLMitigation Sites Oregon, Wenaha WMA Additions	200002000
Program Support	Action Plan Proposal Review	200104500
Program Support	AFS Bioengineering Symposium	198812900
Program Support	Alternative Dispute Resolution Funding	199607900
Program Support	Analytic Support Path/Esa Biology Assessment	199800100
Program Support	Analytical Methods Coordination – IDFG	198910803
Program Support	Analytical Methods Coordination – ODFW	198910802
Program Support	Analytical Methods Coordination – PSMFC	198910805
Program Support	Analytical Methods Coordination – WDF	198910804
Program Support	Annual Project Review	198507500
Program Support	Assess Hydro and Habitat Impacts – USGS	199800407
Program Support	Baseline Key Ecological Functions – NHI	200007401
Program Support	Baseline Key Ecological Functions – WDF&W	200007402
Program Support	BPA – Fish & Wildlife Program Internal Support	198812400
Program Support	BPA Fish & Wildlife Internet Infrastructure	199207104
Program Support	BPA Internal – Adp Support for Pmis Development	199302000
Program Support	BPA Internal – Program Solicitation	198908100
Program Support	BPA Technical Support Placeholder	200004100
Program Support	BPA- Coordinated Information System (USGS Mapping)	198810802
Program Support	Brian Blair – Watershed Coordinators Meeting	199904200
Program Support	Capital Cost Review and Monitoring	199902900
Program Support	Capital Placeholder Per Nwppc Guidance	200004000
Program Support	CBFWA Coordination. & Scientific Review Group	198906200
Program Support	CBFWA F&W Program Planning and Coordination	199202000
Program Support	CBFWA Placeholder	200004200
Program Support	Clerk-Typist Contracts	198509004
Program Support	Clerk-Typist Services	198509000
Program Support	Consultant for Esa, Sor, & Other Concerns	199007900
Program Support	Coordinate CIS & Ned Data Bases	198810803
Program Support	Cost Effectiveness Analysis & Model Enhancement	199303700
Program Support	Cultural, Social, Institutional Impacts of ESA	199302100
Program Support	Develop Contract Data Information System (Pmis)	198508000
Program Support	Division Retreat Meeting Facilities	199005900
Program Support	Ecosystem Diagnosis and Treatment Model	200104800
Program Support	Educate/Support Yakima River Basin Groups	199803000
Program Support	Electronic Fish and Wildlife Newsletter	199800401
Program Support	Electronic Reference Library	199301700
Program Support	Energy Newsdata Demonstration Project (Fish.net)	199601500
Program Support	Environmental Awareness Project – Yakima Schools	199201900
Program Support	F&W Newsletter Development Grant	199501000
Program Support	Facilitator for Annual Project Review Fy86	198610300
Program Support	Facility Rental (Holiday Inn) for Project Review	198610200
Program Support	Facility Rental – Spokane Holiday Inn	198609800
Program Support	Federal Caucus/Unified Plan	199903400
Program Support	Fish and Wildlife Program Implementation	198300300
Program Support	Fish and Wildlife Public Education Project	199206500
Program Support	Formalize Procedures for Proposal Evaluations	198406300

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Program	Project Title	BPA Project #
Program Support	Fund (TWG) Technical Work Group- Research Emphasis	198730700
Program Support	Geographic Information System(gis) Program	199801200
Program Support	GIS for Subbasin Assessment	200100500
Program Support	Habitat Concept Plan	199903300
Program Support	Hatchery & Harvest Project for The Federal Caucus	199903500
Program Support	Idaho Conservation Data Center	200101700
Program Support	Independent Scientific Review Panel	199702300
Program Support	Innovative Projects Placeholder	200004300
Program Support	Maintain Coordinated Information System (CIS)	198810801
Program Support	Misc F&W Sponsorships	200100600
Program Support	Multispecies Framework Process	199802700
Program Support	Native American Science Outreach Network Students	199405700
Program Support	Natural Heritage Program (NHP)	199801100
Program Support	Nelson Springs BPA Facility Janitorial Service	199503200
Program Support	Nepa Studies for A Variety of Projects: OR, WA, ID	199610200
Program Support	Newsclips on Various BPA Fish & Wildlife Projects	198611600
Program Support	NPPC – Regional Data Needs	200107400
Program Support	NW Fishweb Online Guide	199905300
Program Support	Off-Site Clerical Services – Yakima Project	199006200
Program Support	Pacific Northwest National Laboratory	199905100
Program Support	Pacific Northwest Rivers Study, Develop Ned	198404000
Program Support	Parking Space for BPA Office at Yakima	198815000
Program Support	Participation in Analytical Methods Coordination	198910801
Program Support	Program Analysis Placeholder	200004500
Program Support	Program Support – Offsite Room Rentals	199105000
Program Support	Project Management Plan Templates	199805200
Program Support	PSMFC Educational Publications	199208100
Program Support	Redesign of F&W Management Systems	199804200
Program Support	Regional Analytical Coordination Group	199403100
Program Support	Regional Habitat Education Support	199301100
Program Support	Return of The Salmon – Wenatchee River Festival	199202700
Program Support	Salmon Watch Program	199805900
Program Support	Scientific Review Group Meeting Facilities	198907202
Program Support	Sub Basin Planning Placeholder	200004400
Program Support	Subbasin Assessments	200007300
Program Support	Support for Habitat Education Activities	199202600
Program Support	Support From Internal Operations – CD	199509000
Program Support	Technical Assistance for BPA Fish & Wildlife	198741300
Program Support	Technical Assistance for Fish & Wildlife Projects	198506500
Program Support	Technical Assistance- BPA Fish & Wildlife Program	198611800
Program Support	Technical Services: Performance Measures	199906800
Program Support	Technical Support for Variety of Biological Issues	199301300
Program Support	Technical Support Project Placeholder	200000300
Program Support	USF&WS Wildlife Coordination	199801500
Program Support	Washington Natural Heritage Information System	199805100
Program Support	Watershed Education Interactive Display for OMSI	199208300
Program Support	Workshop for Fish Survival	198815800
Program Support	Write & edit Comments- Integrated System Plan	199104900
Program Support	Writer – Editor for ESA Meetings	199801300
Program Support	Yakima Resource Newsletter	199007300

Appendix I

Build Your Own Alternative

Appendix I

BUILD YOUR OWN ALTERNATIVE

A: "Build Your Own Alternative"

This appendix was provided in the draft version of this EIS to enable people throughout the Region to build their own versions of the "right" plan for the fish and wildlife mitigation and recovery effort. Using this information as part of the unified planning approach, the different perspectives provided through the alternatives that people suggested, as well as other regional guidance, helped shape the ultimate Policy Direction that the BPA Administrator is selecting as the current preferred alternative direction (see Section 3.2.8, BPA Preferred Alternative 2002 (PA 2002)). BPA is retaining this "Build Your Own Alternative" appendix in this final EIS to assist with future policy direction changes and modifications.

Readers should recognize that policies underpin the Region's fish and wildlife mitigation and recovery choices, and this is why BPA has chosen to focus this EIS on a range of five distinctly different, but reasonably foreseeable, Policy Directions (Chapter 3). Through "mixing and matching," these basic Policy Directions made it possible for BPA to gain the necessary information to arrive at a unified perspective for guiding its fish and wildlife program implementation and expenditures. By applying this methodology, BPA has been able to assess the environmental consequences of its preferred alternative Policy Direction, PA 2002, and will be able to do so when future policy direction changes are necessary. This same methodology also makes it possible for others to do the same.

How To Apply This Methodology

To help in the development and understanding of building your own alternative, BPA has provided illustrations and instructions in this appendix on how it is done from the information and data in this EIS. As you begin this procedure, please keep in mind the need to stay focused on the overall objective you are trying to accomplish with your "rebuilt" proposal. It is easy to get mired down in details and exceptions to the rule. Since the science for fish and wildlife recovery is uncertain and still developing, much of the difficulty you may experience will be with conflicting social mandates, laws, and personal values (Chapters 2, 3, and 5). This conflict and need for making trade-offs is the greatest challenge in making public policy. Remember, trying to accommodate too many values will likely lead to an outcome that blurs them all.

There are three basic steps to building your own alternative:

Step one: review the information used for the Status Quo (baseline) to which future fish and wildlife mitigation and recovery effort policy directions will be compared. Review Section 5.1 in Chapter 5 to gain an understanding of the

environmental conditions that the five basic Policy Directions in this EIS were compared and evaluated against. Table B below gives a general sense of the Status Quo with a visual representation distributed across the five Policy Directions.

Step two: determine the basic theme and actions that will best define the proposal for your fish and wildlife mitigation and recovery choices. Review the philosophy or theme behind each of the five basic Policy Directions that span the range of alternatives in Section 3.2 in Chapter 3. Then review the actions in the Sample Implementation Actions tables for the Policy Directions in Volume 3. The tables in Volume 3 offer numerous examples of the types of actions that have been proposed throughout the Region by individuals, interest groups, tribes, states, and Federal agencies. The sample actions are sorted by Key Issue areas (Chapter 3, Section 3.1.2) and grouped into one of the five Policy Directions. Finish this step by considering the different Policy Direction themes and the sample actions and then selecting the theme(s) and actions that best represent your proposal for each of the Key Issue areas. Table A below is provided to help track the choices of actions and develop a visual representation of your proposal for a Policy Direction. It is likely that your proposed Policy Direction will be a combination of more than one of the five basic Policy Directions. See Section B for completed charts on several other illustrations of proposals throughout the Region (Tables C-L; N and O). Also review Section C, Table M, below for a visual representation of BPA's PA 2002.

Step three: determine the environmental consequences of your proposal. Review Chapter 5, Sections 5.1 and 5.2 to get a general understanding of how and where fish, wildlife, and human effects occur with respect to any plan for fish and wildlife mitigation and recovery. Keep in mind that there are trade-offs among impact areas that provide checks and balances for those impact areas.

- The **land, water, and fish/wildlife** sections are presented from the fish and wildlife perspective, because they are the main areas associated with fish and wildlife and their habitats.
- The **air, social, and economic** sections are presented from the human perspective, because these are the main areas of immediate concern to the daily lives of humans.

Obviously, some of these categories affect both fish and wildlife and humans. The grouping was not meant to be exclusive: rather, the objective was to ensure an understanding of how the activities and actions taken to help fish/wildlife or humans may affect each other.

Next, review Section 5.3 for an explanation of how the effects from each Policy Direction change compared to the Status Quo. A shading illustration based on the explanation is given for each environmental consequence. These illustrations offer a visual cue as to whether a set of actions are better or worse compared to Status Quo. Using these explanations and illustrations, consider where your proposal lies in relationship to the different Policy Directions. Match the effects with your selected set of actions. Because you probably mixed portions of different Policy Directions together, you will need to do the same with the environmental consequences areas in order to accurately reflect your "mix and match" approach. See Section 3A at the end of

Chapter 3, PA 2002, for a completed example of the mixing and matching of Policy Directions, as well as an assessment of environmental consequences.

Several cautions are in order for anyone wishing to "mix and match."

- *Compatibility.* Not all combinations of actions are possible; some actions are mutually exclusive.
- *Consistency.* Choosing actions from several different Policy Direction implementation actions may result in a plan that is truly indicative of none.
- *Effectiveness.* A "scattershot" technique that tries to reach too many goals with too little money for each will likely dilute the desired effect.
- *Clarity and Coordination.* The more that different "pieces" of different Directions are mixed, the more likely that confusion might result in interpreting who does what and how.
- *Cause-and-Effect.* If you change or substitute an action, remember that you are also substituting the effects (natural environment and/or social and economic environment) of that action.

Fish and Wildlife Implementation Plan EIS
Appendix I: Build Your Own Alternative

Table A: Visual Aid for New Proposal Alternative

Key Regional Issues	Proposal #1					Proposal #2				
	BPA Alt. Policy Dir.					BPA Alt. Policy Dir.				
	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF
1 Habitat										
1-1 Anadromous Fish										
1-2 Resident Fish										
1-3 Introduced Species										
1-4 Wildlife										
1-5 Pred. Anad. Fish										
1-6 Watersheds										
1-7 Tributaries										
1-8 Mainstem Col.										
1-9 Reservoirs										
1-10 Estuaries/Ocean										
1-11 Water Quality										
2 Harvest										
2-1 Anadromous Fish										
2-2 Resident Fish										
2-3 Wildlife										
3 Hatcheries										
3-1 Anadromous Fish										
3-2 Resident Fish										
4 Hydro										
4-1 Dam Mod. & Facil.										
4-2 Hydro Operations										
4-3 Spill										
4-4 Flow										
4-5 Reservoir Levels										
4-6 Water Quality										
4-7 Juv. Fish Trans.										
4-8 Adult Fish Pass.										
4-9 Flood Control										
5 Power										
5-1 Existing Gen.										
5-2 New Energy Res.										
5-3 Trans. Reliability										
6 Industry										
6-1 Industrial Dev.										
6-2 Alum. and Chem.										
6-3 Mining										
6-4 Pulp and Paper										
7 Transportation										
7-1 Navigation/Barge										
7-2 Trucking & Rail										
8 Agriculture										
8-1 Irrigation										
8-2 Pest./Ag. Practices										
8-3 Grazing										
8-4 Forestry										
9 Commercial Fishing										
10 Resid./Comm. Dev.										
11 Recreation										
12 Tribes										
12-1 Tribal Harvest										
12-2 Trad./Cult./Spirit										

BPA Alternative Policy Direction: NF = Natural Focus; WS = Weak Stock; SU = Sustained Use; SS = Strong Stock; CF = Commerce Focus.

B: Illustrations of Proposals

Table B: Visual Representation of Status Quo

Key Regional Issues	Status Quo				
	BPA Alt. Policy Dir.				
	NF	WS	SU	SS	CF
1 Habitat					
1-1 Anadromous Fish			■		
1-2 Resident Fish			■		
1-3 Introduced Species		■			
1-4 Wildlife			■		
1-5 Pred. Anad. Fish			■		
1-6 Watersheds	■				
1-7 Tributaries			■		
1-8 Mainstem Col.				■	
1-9 Reservoirs		■			
1-10 Estuaries/Ocean				■	
1-11 Water Quality		■			
2 Harvest					
2-1 Anadromous Fish				■	
2-2 Resident Fish			■		
2-3 Wildlife			■		
3 Hatcheries					
3-1 Anadromous Fish				■	
3-2 Resident Fish			■		
4 Hydro					
4-1 Dam Mod. & Facil.				■	
4-2 Hydro Operations			■		
4-3 Spill			■		
4-4 Flow			■		
4-5 Reservoir Levels				■	
4-6 Water Quality			■		
4-7 Juv. Fish Trans.			■		
4-8 Adult Fish Pass.				■	
4-9 Flood Control					■
5 Power					
5-1 Existing Gen.			■		
5-2 New Energy Res.				■	
5-3 Trans. Reliability			■		
6 Industry					
6-1 Industrial Dev.				■	
6-2 Alum. And Chem.				■	
6-3 Mining				■	
6-4 Pulp and Paper				■	
7 Transportation					
7-1 Navigation/Barge			■		
7-2 Trucking & Rail			■		
8 Agriculture					
8-1 Irrigation			■		
8-2 Pest./Ag. Practices			■		
8-3 Grazing			■		
8-4 Forestry			■		
9 Commercial Fishing					
10 Resid./Comm. Dev.					
11 Recreation					
12 Tribes					
12-1 Tribal Harvest				■	
12-2 Trad./Cult./Spirit			■		

BPA Alternative Policy Direction: NF = Natural Focus; WS = Weak Stock; SU = Sustained Use; SS = Strong Stock; CF = Commerce Focus.

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Table C: The Council's Framework Concept Papers Sample Implementation Actions From Volume 3 Spread Across Five Basic Policy Directions

Key Regional Issues	Framework Concept Paper 1					Framework Concept Paper 2					Framework Concept Paper 3					Framework Concept Paper 4					Framework Concept Paper 5				
	BPA Alt. Policy Dir.					BPA Alt. Policy Dir.					BPA Alt. Policy Dir.					BPA Alt. Policy Dir.					BPA Alt. Policy Dir.				
	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF
1 Habitat																									
1-1 Anadromous Fish																									
1-2 Resident Fish																									
1-3 Introduced Species																									
1-4 Wildlife																									
1-5 Pred. Anad. Fish																									
1-6 Watersheds																									
1-7 Tributaries																									
1-8 Mainstem Col.																									
1-9 Reservoirs																									
1-10 Estuaries/Ocean																									
1-11 Water Quality																									
2 Harvest																									
2-1 Anadromous Fish																									
2-2 Resident Fish																									
2-3 Wildlife																									
3 Hatcheries																									
3-1 Anadromous Fish																									
3-2 Resident Fish																									
4 Hydro																									
4-1 Dam Mod. & Facil.																									
4-2 Hydro Operations																									
4-3 Spill																									
4-4 Flow																									
4-5 Reservoir Levels																									
4-6 Water Quality																									
4-7 Juv. Fish Trans.																									
4-8 Adult Fish Pass.																									
4-9 Flood Control																									
5 Power																									
5-1 Existing Gen.																									
5-2 New Energy Res.																									
5-3 Trans. Reliability																									
6 Industry																									
6-1 Industrial Dev.																									
6-2 Alum. and Chem.																									
6-3 Mining																									
6-4 Pulp and Paper																									
7 Transportation																									
7-1 Navigation/Barge																									
7-2 Trucking & Rail.																									
8 Agriculture																									
8-1 Irrigation																									
8-2 Pest./Ag. Practices																									
8-3 Grazing																									
8-4 Forestry																									
9 Commercial Fishing																									
10 Resid./Comm. Dev.																									
11 Recreation																									
12 Tribes																									
12-1 Tribal Harvest																									
12-2 Trad./Cult./Spirit																									

BPA Alternative Policy Direction: NF = Natural Focus; WS = Weak Stock; SU = Sustained Use; SS = Strong Stock; CF = Commerce Focus.

Table D: The Council's Framework Concept Papers Sample Implementation Actions From Volume 3 Spread Across Five Basic Policy Directions

Key Regional Issues	Framework Concept Paper 6					Framework Concept Paper 7					Framework Concept Paper 8					Framework Concept Paper 9					Framework Concept Paper 10				
	BPA Alt. Policy Dir.					BPA Alt. Policy Dir.					BPA Alt. Policy Dir.					BPA Alt. Policy Dir.					BPA Alt. Policy Dir.				
	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF
1 Habitat																									
1-1 Anadromous Fish																									
1-2 Resident Fish																									
1-3 Introduced Species																									
1-4 Wildlife																									
1-5 Pred. Anad. Fish																									
1-6 Watersheds																									
1-7 Tributaries																									
1-8 Mainstem Col.																									
1-9 Reservoirs																									
1-10 Estuaries/Ocean																									
1-11 Water Quality																									
2 Harvest																									
2-1 Anadromous Fish																									
2-2 Resident Fish																									
2-3 Wildlife																									
3 Hatcheries																									
3-1 Anadromous Fish																									
3-2 Resident Fish																									
4 Hydro																									
4-1 Dam Mod. & Facil.																									
4-2 Hydro Operations																									
4-3 Spill																									
4-4 Flow																									
4-5 Reservoir Levels																									
4-6 Water Quality																									
4-7 Juv. Fish Trans.																									
4-8 Adult Fish Pass.																									
4-9 Flood Control																									
5 Power																									
5-1 Existing Gen.																									
5-2 New Energy Res.																									
5-3 Trans. Reliability																									
6 Industry																									
6-1 Industrial Dev.																									
6-2 Alum. and Chem.																									
6-3 Mining																									
6-4 Pulp and Paper																									
7 Transportation																									
7-1 Navigation/Barge																									
7-2 Trucking & Rail.																									
8 Agriculture																									
8-1 Irrigation																									
8-2 Pest./Ag. Practices																									
8-3 Grazing																									
8-4 Forestry																									
9 Commercial Fishing																									
10 Resid./Comm. Dev.																									
11 Recreation																									
12 Tribes																									
12-1 Tribal Harvest																									
12-2 Trad./Cult./Spirit																									

BPA Alternative Policy Direction: NF = Natural Focus; WS = Weak Stock; SU = Sustained Use; SS = Strong Stock; CF = Commerce Focus.

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Table E: The Council's Framework Concept Papers Sample Implementation Actions From Volume 3 Spread Across Five Basic Policy Directions

Key Regional Issues	Framework Concept Paper 11					Framework Concept Paper 12					Framework Concept Paper 13					Framework Concept Paper 14					Framework Concept Paper 15				
	BPA Alt. Policy Dir.					BPA Alt. Policy Dir.					BPA Alt. Policy Dir.					BPA Alt. Policy Dir.					BPA Alt. Policy Dir.				
	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF
1 Habitat																									
1-1 Anadromous Fish																									
1-2 Resident Fish																									
1-3 Introduced Species																									
1-4 Wildlife																									
1-5 Pred. Anad. Fish																									
1-6 Watersheds																									
1-7 Tributaries																									
1-8 Mainstem Col.																									
1-9 Reservoirs																									
1-10 Estuaries/Ocean																									
1-11 Water Quality																									
2 Harvest																									
2-1 Anadromous Fish																									
2-2 Resident Fish																									
2-3 Wildlife																									
3 Hatcheries																									
3-1 Anadromous Fish																									
3-2 Resident Fish																									
4 Hydro																									
4-1 Dam Mod. & Facil.																									
4-2 Hydro Operations																									
4-3 Spill																									
4-4 Flow																									
4-5 Reservoir Levels																									
4-6 Water Quality																									
4-7 Juv. Fish Trans.																									
4-8 Adult Fish Pass.																									
4-9 Flood Control																									
5 Power																									
5-1 Existing Gen.																									
5-2 New Energy Res.																									
5-3 Trans. Reliability																									
6 Industry																									
6-1 Industrial Dev.																									
6-2 Alum. and Chem.																									
6-3 Mining																									
6-4 Pulp and Paper																									
7 Transportation																									
7-1 Navigation/Barge																									
7-2 Trucking & Rail.																									
8 Agriculture																									
8-1 Irrigation																									
8-2 Pest./Ag. Practices																									
8-3 Grazing																									
8-4 Forestry																									
9 Commercial Fishing																									
10 Resid./Comm. Dev.																									
11 Recreation																									
12 Tribes																									
12-1 Tribal Harvest																									
12-2 Trad./Cult./Spirit																									

BPA Alternative Policy Direction: NF = Natural Focus; WS = Weak Stock; SU = Sustained Use; SS = Strong Stock; CF = Commerce Focus.

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Table F: The Council's Framework Concept Papers Sample Implementation Actions From Volume 3 Spread Across Five Basic Policy Directions

Key Regional Issues	Framework Concept Paper 16					Framework Concept Paper 17					Framework Concept Paper 18					Framework Concept Paper 19					Framework Concept Paper 20					
	BPA Alt. Policy Dir.					BPA Alt. Policy Dir.					BPA Alt. Policy Dir.					BPA Alt. Policy Dir.					BPA Alt. Policy Dir.					
	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF	
1 Habitat	█	█	█	█	█																█	█	█	█	█	
1-1 Anadromous Fish																										
1-2 Resident Fish																										
1-3 Introduced Species																										
1-4 Wildlife																							█			
1-5 Pred. Anad. Fish																										
1-6 Watersheds								█			█															
1-7 Tributaries						█	█					█														
1-8 Mainstem Col.																										
1-9 Reservoirs																										
1-10 Estuaries/Ocean																										
1-11 Water Quality																										
2 Harvest																						█	█			
2-1 Anadromous Fish															█			█					█			
2-2 Resident Fish																										
2-3 Wildlife																										
3 Hatcheries																						█		█		
3-1 Anadromous Fish																										
3-2 Resident Fish																										
4 Hydro																							█			
4-1 Dam Mod. & Facil.																										
4-2 Hydro Operations																										
4-3 Spill																										
4-4 Flow																										
4-5 Reservoir Levels																										
4-6 Water Quality																										
4-7 Juv. Fish Trans.																										
4-8 Adult Fish Pass.																							█			
4-9 Flood Control																										
5 Power																										
5-1 Existing Gen.																										
5-2 New Energy Res.																										
5-3 Trans. Reliability																										
6 Industry																										
6-1 Industrial Dev.																										
6-2 Alum. and Chem.																										
6-3 Mining																										
6-4 Pulp and Paper																										
7 Transportation																										
7-1 Navigation/Barge																										
7-2 Trucking & Rail.																										
8 Agriculture																										
8-1 Irrigation								█				█														
8-2 Pest./Ag. Practices																										
8-3 Grazing																										
8-4 Forestry																										
9 Commercial Fishing																										
10 Resid./Comm. Dev.																										
11 Recreation																										
12 Tribes																										
12-1 Tribal Harvest																						█				
12-2 Trad./Cult./Spirit																										

BPA Alternative Policy Direction: NF = Natural Focus; WS = Weak Stock; SU = Sustained Use; SS = Strong Stock; CF = Commerce Focus.

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Table G: The Council's Framework Concept Papers Sample Implementation Actions From Volume 3 Spread Across Five Basic Policy Directions

Key Regional Issues	Framework Concept Paper 21					Framework Concept Paper 22					Framework Concept Paper 23					Framework Concept Paper 24					Framework Concept Paper 25				
	BPA Alt. Policy Dir.					BPA Alt. Policy Dir.					BPA Alt. Policy Dir.					BPA Alt. Policy Dir.					BPA Alt. Policy Dir.				
	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF
1 Habitat																									
1-1 Anadromous Fish																									
1-2 Resident Fish																									
1-3 Introduced Species																									
1-4 Wildlife																									
1-5 Pred. Anad. Fish																									
1-6 Watersheds																									
1-7 Tributaries																									
1-8 Mainstem Col.																									
1-9 Reservoirs																									
1-10 Estuaries/Ocean																									
1-11 Water Quality																									
2 Harvest																									
2-1 Anadromous Fish																									
2-2 Resident Fish																									
2-3 Wildlife																									
3 Hatcheries																									
3-1 Anadromous Fish																									
3-2 Resident Fish																									
4 Hydro																									
4-1 Dam Mod. & Facil.																									
4-2 Hydro Operations																									
4-3 Spill																									
4-4 Flow																									
4-5 Reservoir Levels																									
4-6 Water Quality																									
4-7 Juv. Fish Trans.																									
4-8 Adult Fish Pass.																									
4-9 Flood Control																									
5 Power																									
5-1 Existing Gen.																									
5-2 New Energy Res.																									
5-3 Trans. Reliability																									
6 Industry																									
6-1 Industrial Dev.																									
6-2 Alum. and Chem.																									
6-3 Mining																									
6-4 Pulp and Paper																									
7 Transportation																									
7-1 Navigation/Barge																									
7-2 Trucking & Rail.																									
8 Agriculture																									
8-1 Irrigation																									
8-2 Pest./Ag. Practices																									
8-3 Grazing																									
8-4 Forestry																									
9 Commercial Fishing																									
10 Resid./Comm. Dev.																									
11 Recreation																									
12 Tribes																									
12-1 Tribal Harvest																									
12-2 Trad./Cult./Spirit																									

BPA Alternative Policy Direction: NF = Natural Focus; WS = Weak Stock; SU = Sustained Use; SS = Strong Stock; CF = Commerce Focus.

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Table H: The Council's Framework Concept Papers and Alternatives Sample Implementation Actions From Volume 3 Spread Across Five Basic Policy Directions

Key Regional Issues	Framework Concept Paper 26					Framework Concept Paper 27					Framework Concept Paper 28					Multi-Species Framework Alt. 1					Multi-Species Framework Alt. 2									
	BPA Alt. Policy Dir.					BPA Alt. Policy Dir.					BPA Alt. Policy Dir.					BPA Alt. Policy Dir.					BPA Alt. Policy Dir.									
	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF					
1 Habitat																														
1-1 Anadromous Fish																														
1-2 Resident Fish																														
1-3 Introduced Species																														
1-4 Wildlife																														
1-5 Pred. Anad. Fish																														
1-6 Watersheds																														
1-7 Tributaries																														
1-8 Mainstem Col.																														
1-9 Reservoirs																														
1-10 Estuaries/Ocean																														
1-11 Water Quality																														
2 Harvest																														
2-1 Anadromous Fish																														
2-2 Resident Fish																														
2-3 Wildlife																														
3 Hatcheries																														
3-1 Anadromous Fish																														
3-2 Resident Fish																														
4 Hydro																														
4-1 Dam Mod. & Facil.																														
4-2 Hydro Operations																														
4-3 Spill																														
4-4 Flow																														
4-5 Reservoir Levels																														
4-6 Water Quality																														
4-7 Juv. Fish Trans.																														
4-8 Adult Fish Pass.																														
4-9 Flood Control																														
5 Power																														
5-1 Existing Gen.																														
5-2 New Energy Res.																														
5-3 Trans. Reliability																														
6 Industry																														
6-1 Industrial Dev.																														
6-2 Alum. and Chem.																														
6-3 Mining																														
6-4 Pulp and Paper																														
7 Transportation																														
7-1 Navigation/Barge																														
7-2 Trucking & Rail.																														
8 Agriculture																														
8-1 Irrigation																														
8-2 Pest./Ag. Practices																														
8-3 Grazing																														
8-4 Forestry																														
9 Commercial Fishing																														
10 Resid./Comm. Dev.																														
11 Recreation																														
12 Tribes																														
12-1 Tribal Harvest																														
12-2 Trad./Cult./Spirit																														

BPA Alternative Policy Direction: NF = Natural Focus; WS = Weak Stock; SU = Sustained Use; SS = Strong Stock; CF = Commerce Focus.

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Table I: The Council's Framework Alternatives Sample Implementation Actions From Volume 3 Spread Across Five Basic Policy Directions

Key Regional Issues	Multi-Species Framework Alt. 3					Multi-Species Framework Alt. 4					Multi-Species Framework Alt. 5					Multi-Species Framework Alt. 6					Multi-Species Framework Alt. 7									
	BPA Alt. Policy Dir.					BPA Alt. Policy Dir.					BPA Alt. Policy Dir.					BPA Alt. Policy Dir.					BPA Alt. Policy Dir.									
	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF					
1 Habitat																														
1-1 Anadromous Fish																														
1-2 Resident Fish																														
1-3 Introduced Species																														
1-4 Wildlife																														
1-5 Pred. Anad. Fish																														
1-6 Watersheds																														
1-7 Tributaries																														
1-8 Mainstem Col.																														
1-9 Reservoirs																														
1-10 Estuaries/Ocean																														
1-11 Water Quality																														
2 Harvest																														
2-1 Anadromous Fish																														
2-2 Resident Fish																														
2-3 Wildlife																														
3 Hatcheries																														
3-1 Anadromous Fish																														
3-2 Resident Fish																														
4 Hydro																														
4-1 Dam Mod. & Facil.																														
4-2 Hydro Operations																														
4-3 Spill																														
4-4 Flow																														
4-5 Reservoir Levels																														
4-6 Water Quality																														
4-7 Juv. Fish Trans.																														
4-8 Adult Fish Pass.																														
4-9 Flood Control																														
5 Power																														
5-1 Existing Gen.																														
5-2 New Energy Res.																														
5-3 Trans. Reliability																														
6 Industry																														
6-1 Industrial Dev.																														
6-2 Alum. and Chem.																														
6-3 Mining																														
6-4 Pulp and Paper																														
7 Transportation																														
7-1 Navigation/Barge																														
7-2 Trucking & Rail.																														
8 Agriculture																														
8-1 Irrigation																														
8-2 Pest./Ag. Practices																														
8-3 Grazing																														
8-4 Forestry																														
9 Commercial Fishing																														
9-1 Commercial Fishing																														
10 Resid./Comm. Dev.																														
10-1 Resid./Comm. Dev.																														
11 Recreation																														
11-1 Recreation																														
12 Tribes																														
12-1 Tribal Harvest																														
12-2 Trad./Cult./Spirit																														

BPA Alternative Policy Direction: NF = Natural Focus; WS = Weak Stock; SU = Sustained Use; SS = Strong Stock; CF = Commerce Focus.

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**Table J: Other Federal Reference Documents Sample Implementation Actions From Volume 3
Spread Across Five Basic Policy Directions**

Key Regional Issues	Lower Snake River Feasibility Study					ICBEMP FEIS					ICBEMP DEIS					INFISH/PACFISH EAs					INFISH/PACFISH BiOps						
	BPA Alt. Policy Dir.					BPA Alt. Policy Dir.					BPA Alt. Policy Dir.					BPA Alt. Policy Dir.					BPA Alt. Policy Dir.						
	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF		
1 Habitat																											
1-1 Anadromous Fish																											
1-2 Resident Fish																											
1-3 Introduced Species																											
1-4 Wildlife																											
1-5 Pred. Anad. Fish																											
1-6 Watersheds																											
1-7 Tributaries																											
1-8 Mainstem Col.																											
1-9 Reservoirs																											
1-10 Estuaries/Ocean																											
1-11 Water Quality																											
2 Harvest																											
2-1 Anadromous Fish																											
2-2 Resident Fish																											
2-3 Wildlife																											
3 Hatcheries																											
3-1 Anadromous Fish																											
3-2 Resident Fish																											
4 Hydro																											
4-1 Dam Mod. & Facil.																											
4-2 Hydro Operations																											
4-3 Spill																											
4-4 Flow																											
4-5 Reservoir Levels																											
4-6 Water Quality																											
4-7 Juv. Fish Trans.																											
4-8 Adult Fish Pass.																											
4-9 Flood Control																											
5 Power																											
5-1 Existing Gen.																											
5-2 New Energy Res.																											
5-3 Trans. Reliability																											
6 Industry																											
6-1 Industrial Dev.																											
6-2 Alum. and Chem.																											
6-3 Mining																											
6-4 Pulp and Paper																											
7 Transportation																											
7-1 Navigation/Barge																											
7-2 Trucking & Rail.																											
8 Agriculture																											
8-1 Irrigation																											
8-2 Pest./Ag. Practices																											
8-3 Grazing																											
8-4 Forestry																											
9 Commercial Fishing																											
10 Resid./Comm. Dev.																											
11 Recreation																											
12 Tribes																											
12-1 Tribal Harvest																											
12-2 Trad./Cult./Spirit																											

BPA Alternative Policy Direction: NF = Natural Focus; WS = Weak Stock; SU = Sustained Use; SS = Strong Stock; CF = Commerce Focus.

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Table K: Other State Reference Documents Sample Implementation Actions From Volume 3 Spread Across Five Basic Policy Directions

Key Regional Issues	Idaho's Anadromous Fish Status/Recovery					The Oregon Plan Salmon/Watersheds					Washington's Strategy Salmon Recovery				
	BPA Alt. Policy Dir.					BPA Alt. Policy Dir.					BPA Alt. Policy Dir.				
	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF
1 Habitat															
1-1 Anadromous Fish															
1-2 Resident Fish															
1-3 Introduced Species															
1-4 Wildlife															
1-5 Pred. Anad. Fish															
1-6 Watersheds															
1-7 Tributaries															
1-8 Mainstem Col.															
1-9 Reservoirs															
1-10 Estuaries/Ocean															
1-11 Water Quality															
2 Harvest															
2-1 Anadromous Fish															
2-2 Resident Fish															
2-3 Wildlife															
3 Hatcheries															
3-1 Anadromous Fish															
3-2 Resident Fish															
4 Hydro															
4-1 Dam Mod. & Facil.															
4-2 Hydro Operations															
4-3 Spill															
4-4 Flow															
4-5 Reservoir Levels															
4-6 Water Quality															
4-7 Juv. Fish Trans.															
4-8 Adult Fish Pass.															
4-9 Flood Control															
5 Power															
5-1 Existing Gen.															
5-2 New Energy Res.															
5-3 Trans. Reliability															
6 Industry															
6-1 Industrial Dev.															
6-2 Alum. and Chem.															
6-3 Mining															
6-4 Pulp and Paper															
7 Transportation															
7-1 Navigation/Barge															
7-2 Trucking & Rail.															
8 Agriculture															
8-1 Irrigation															
8-2 Pest./Ag. Practices															
8-3 Grazing															
8-4 Forestry															
9 Commercial Fishing															
10 Resid./Comm. Dev.															
11 Recreation															
12 Tribes															
12-1 Tribal Harvest															
12-2 Trad./Cult./Spirit															

BPA Alternative Policy Direction: NF = Natural Focus; WS = Weak Stock; SU = Sustained Use; SS = Strong Stock; CF = Commerce Focus.

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Table L: Other Reference Documents Sample Implementation Actions From Volume 3 Spread Across Five Basic Policy Directions

Key Regional Issues	Spirit of the Salmon					Human Effects Analysis Appendix D					Draft All-H Paper, Dec. 1999					NW Forest Plan ROD					SOREIS				
	BPA Alt. Policy Dir.					BPA Alt. Policy Dir.					BPA Alt. Policy Dir.					BPA Alt. Policy Dir.					BPA Alt. Policy Dir.				
	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF
1 Habitat																									
1-1 Anadromous Fish																									
1-2 Resident Fish																									
1-3 Introduced Species																									
1-4 Wildlife																									
1-5 Pred. Anad. Fish																									
1-6 Watersheds																									
1-7 Tributaries																									
1-8 Mainstem Col.																									
1-9 Reservoirs																									
1-10 Estuaries/Ocean																									
1-11 Water Quality																									
2 Harvest																									
2-1 Anadromous Fish																									
2-2 Resident Fish																									
2-3 Wildlife																									
3 Hatcheries																									
3-1 Anadromous Fish																									
3-2 Resident Fish																									
4 Hydro																									
4-1 Dam Mod. & Facil.																									
4-2 Hydro Operations																									
4-3 Spill																									
4-4 Flow																									
4-5 Reservoir Levels																									
4-6 Water Quality																									
4-7 Juv. Fish Trans.																									
4-8 Adult Fish Pass.																									
4-9 Flood Control																									
5 Power																									
5-1 Existing Gen.																									
5-2 New Energy Res.																									
5-3 Trans. Reliability																									
6 Industry																									
6-1 Industrial Dev.																									
6-2 Alum. and Chem.																									
6-3 Mining																									
6-4 Pulp and Paper																									
7 Transportation																									
7-1 Navigation/Barge																									
7-2 Trucking & Rail.																									
8 Agriculture																									
8-1 Irrigation																									
8-2 Pest./Ag. Practices																									
8-3 Grazing																									
8-4 Forestry																									
9 Commercial Fishing																									
10 Resid./Comm. Dev.																									
11 Recreation																									
12 Tribes																									
12-1 Tribal Harvest																									
12-2 Trad./Cult./Spirit																									

BPA Alternative Policy Direction: NF = Natural Focus; WS = Weak Stock; SU = Sustained Use; SS = Strong Stock; CF = Commerce Focus.

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KEY ISSUES

1 Habitat

1-1 Anadromous Fish
1-4 Wildlife
1-7 Tributaries
1-10 Estuary and Ocean

1-2 Resident Fish
1-5 Predator Anadromous Fish
1-8 Mainstem Columbia
1-11 Water Quality

1-3 Introduced Species
1-6 Watersheds
1-9 Reservoirs

2 Harvest

2-1 Anadromous Fish

2-2 Resident Fish

2-3 Wildlife

3 Hatcheries

3-1 Anadromous Fish

3-2 Resident Fish

4 Hydro

4-1 Dam Modifications and Facilities
4-4 Flow
4-7 Juvenile Fish Migration & Transport

4-2 Hydro Operations
4-5 Reservoir Levels
4-8 Adult Fish Passage

4-3 Spill
4-6 Water Quality
4-9 Flood Control

5 Power

5-1 Existing Generation

5-2 New Energy Resources

5-3 Transmission Reliability

6 Industry

6-1 Industrial Development
6-4 Pulp and Paper

6-2 Aluminum and Chemical

6-3 Mining

7 Transportation

7-1 Navigation and Barging

7-2 Trucking & Railroad

8 Agriculture

8-1 Irrigation
8-4 Forestry

8-2 Pesticides/Agricultural Practices

8-3 Grazing

9 Commercial Fishing

10 Residential and Commercial Development

11 Recreation

12 Tribes

12-1 Tribal Harvest

12-2 Tradition, Culture, & Spirituality

C: Illustration of PA 2002

The essence of BPA's PA 2002 is visually illustrated in Table M below by charting several of the Sample Implementation Actions in Volume 3. The sample actions used to create the table are taken from major regional documents shown in Tables N and O. The documents include the NMFS 2000 Biological Opinion, USFWS 2000 Biological Opinion, 2002-2006 Implementation Actions (Action Agencies' 5-Year Plan), Council's 2000 Fish and Wildlife Program, Governor's Recommendations, and Tribal Vision. The information from these documents provided BPA both regional guidance on important fish and wildlife policy directions, and more site-specific sample implementation actions for the implementation of fish and wildlife mitigation and recovery.

The illustration in Table M below provides an example of how the different sample implementation actions from the regional documents look when combined and dispersed across the five basic Policy Directions evaluated in this EIS. The black boxes in the Table demonstrate where two or more of the regional documents overlap. It clearly shows that the overall Policy Direction for the Region is focused on the combination of Weak Stocks Focus and Sustainable Use Focus Policy Directions. It has been made clear from the Corps' September, 2002, Record of Decision on the Lower Snake River Juvenile Salmon Migration Feasibility Study that the Lower Snake River dams would not be breached at this time. Therefore, the sample actions from the Weak Stocks Focus would be confined to those not involving breaching dams.

The greatest alignment of actions is in relationship to a Policy Direction or Directions representing the central theme of the actions being proposed in the Region. For PA 2002, it is evident that the Weak Stock Focus and Sustainable Use Focus Policy Directions make up the core of sample actions. Since the current plan does not propose breaching dams, the central tendency leans somewhat more toward the Sustainable Use Focus Policy Direction. As shown, however, there are sample actions in both Policy Directions.

The reason for describing the central tendency of the Policy Directions is twofold: (1) it is easier to determine if future implementing actions are consistent with previous actions and planning goals; and (2) to ensure that expenditures are made efficiently when trying to achieve the overall objective. Earlier in this Appendix and in Chapter 3 we explained how being spread across too many Policy Directions could cause confusion on the part of those who must implement actions in the future. It is much more difficult to determine whether future actions are consistent with the previous actions if the overall direction is unclear. Also, consider the time and money that can be spent trying to settle disagreements over what was intended by past actions if there is not a clear Policy Direction guiding the implementation of future actions.

See Section 3A at the end of Chapter 3 in conjunction with Table M, for a complete assessment of the environmental consequences of PA 2002.

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Table M: Visual Representation of PA 2002

Key Regional Issues	PA 2002				
	BPA Alt. Policy Dir.				
	NF	WS	SU	SS	CF
1 Habitat					
1-1 Anadromous Fish					
1-2 Resident Fish					
1-3 Introduced Species					
1-4 Wildlife					
1-5 Pred. Anad. Fish					
1-6 Watersheds					
1-7 Tributaries					
1-8 Mainstem Col.					
1-9 Reservoirs					
1-10 Estuaries/Ocean					
1-11 Water Quality					
2 Harvest					
2-1 Anadromous Fish					
2-2 Resident Fish					
2-3 Wildlife					
3 Hatcheries					
3-1 Anadromous Fish					
3-2 Resident Fish					
4 Hydro					
4-1 Dam Mod. & Facil.					
4-2 Hydro Operations					
4-3 Spill					
4-4 Flow					
4-5 Reservoir Levels					
4-6 Water Quality					
4-7 Juv. Fish Trans.					
4-8 Adult Fish Pass.					
4-9 Flood Control					
5 Power					
5-1 Existing Gen.					
5-2 New Energy Res.					
5-3 Trans. Reliability					
6 Industry					
6-1 Industrial Dev.					
6-2 Alum. and Chem.					
6-3 Mining					
6-4 Pulp and Paper					
7 Transportation					
7-1 Navigation/Barge					
7-2 Trucking & Rail.					
8 Agriculture					
8-1 Irrigation					
8-2 Pest./Ag. Practices					
8-3 Grazing					
8-4 Forestry					
9 Commercial Fishing					
10 Resid./Comm. Dev.					
11 Recreation					
12 Tribes					
12-1 Tribal Harvest					
12-2 Trad./Cult./Spirit					

BPA Alternative Policy Direction: NF = Natural Focus; WS = Weak Stock; SU = Sustained Use; SS = Strong Stock; CF = Commerce Focus.

Table N: 2000 BiOps Related Sample Implementation Actions From Volume 3 Spread Across Five Basic Policy Directions

Key Regional Issues	Action Agencies' 2002-2006 Imp. Plan					NMFS BiOp Actions Dec. 2000					USFWS BiOp Actions Dec. 2000				
	BPA Alt. Policy Dir.					BPA Alt. Policy Dir.					BPA Alt. Policy Dir.				
	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF
1 Habitat															
1-1 Anadromous Fish															
1-2 Resident Fish															
1-3 Introduced Species															
1-4 Wildlife															
1-5 Pred. Anad. Fish															
1-6 Watersheds															
1-7 Tributaries															
1-8 Mainstem Col.															
1-9 Reservoirs															
1-10 Estuaries/Ocean															
1-11 Water Quality															
2 Harvest															
2-1 Anadromous Fish															
2-2 Resident Fish															
2-3 Wildlife															
3 Hatcheries															
3-1 Anadromous Fish															
3-2 Resident Fish															
4 Hydro															
4-1 Dam Mod. & Facil.															
4-2 Hydro Operations															
4-3 Spill															
4-4 Flow															
4-5 Reservoir Levels															
4-6 Water Quality															
4-7 Juv. Fish Trans.															
4-8 Adult Fish Pass.															
4-9 Flood Control															
5 Power															
5-1 Existing Gen.															
5-2 New Energy Res.															
5-3 Trans. Reliability															
6 Industry															
6-1 Industrial Dev.															
6-2 Alum. and Chem.															
6-3 Mining															
6-4 Pulp and Paper															
7 Transportation															
7-1 Navigation/Barge															
7-2 Trucking & Rail.															
8 Agriculture															
8-1 Irrigation															
8-2 Pest./Ag. Practices															
8-3 Grazing															
8-4 Forestry															
9 Commercial Fishing															
9-1 Commercial Fishing															
10 Resid./Comm. Dev.															
10-1 Resid./Comm. Dev.															
11 Recreation															
11-1 Recreation															
12 Tribes															
12-1 Tribal Harvest															
12-2 Trad./Cult./Spirit															

BPA Alternative Policy Direction: NF = Natural Focus; WS = Weak Stock; SU = Sustained Use; SS = Strong Stock; CF = Commerce Focus.

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Table O: Major Regional Guidance Sample Implementation Actions From Volume 3 Spread Across Five Basic Policy Directions

Key Regional Issues	Council's 2000 Fish and Wildlife Program					Governor's Recommendations					Tribal Vision				
	BPA Alt. Policy Dir.					BPA Alt. Policy Dir.					BPA Alt. Policy Dir.				
	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF	NF	WS	SU	SS	CF
1 Habitat															
1-1 Anadromous Fish															
1-2 Resident Fish															
1-3 Introduced Species															
1-4 Wildlife															
1-5 Pred. Anad. Fish															
1-6 Watersheds															
1-7 Tributaries															
1-8 Mainstem Col.															
1-9 Reservoirs															
1-10 Estuaries/Ocean															
1-11 Water Quality															
2 Harvest															
2-1 Anadromous Fish															
2-2 Resident Fish															
2-3 Wildlife															
3 Hatcheries															
3-1 Anadromous Fish															
3-2 Resident Fish															
4 Hydro															
4-1 Dam Mod. & Facil.															
4-2 Hydro Operations															
4-3 Spill															
4-4 Flow															
4-5 Reservoir Levels															
4-6 Water Quality															
4-7 Juv. Fish Trans.															
4-8 Adult Fish Pass.															
4-9 Flood Control															
5 Power															
5-1 Existing Gen.															
5-2 New Energy Res.															
5-3 Trans. Reliability															
6 Industry															
6-1 Industrial Dev.															
6-2 Alum. and Chem.															
6-3 Mining															
6-4 Pulp and Paper															
7 Transportation															
7-1 Navigation/Barge															
7-2 Trucking & Rail.															
8 Agriculture															
8-1 Irrigation															
8-2 Pest./Ag. Practices															
8-3 Grazing															
8-4 Forestry															
9 Commercial Fishing															
10 Resid./Comm. Dev.															
11 Recreation															
12 Tribes															
12-1 Tribal Harvest															
12-2 Trad./Cult./Spirit															

BPA Alternative Policy Direction: NF = Natural Focus; WS = Weak Stock; SU = Sustained Use; SS = Strong Stock; CF = Commerce Focus.

Appendix J
Typical Environmental Consequences of
Potential Implementation Actions

Appendix J

TYPICAL ENVIRONMENTAL CONSEQUENCES OF POTENTIAL IMPLEMENTATION ACTIONS

The following two tables provide estimates of many of the environmental consequences of potential fish and wildlife mitigation and recovery actions and program activities. The actions and activities could be implemented to benefit fish and wildlife under one or more of the alternative Policy Directions considered in this document. It should be noted that these are sample implementation actions and effects only; that is, the list is not intended to be all-inclusive.

Most of the information has been developed through attempts in other EISs and fish and wildlife documents to quantify the environmental consequences using appropriate units and measures. In many cases, ranges of values provide the best available estimates for activities with varying outputs and costs. The estimates should be used for comparative purposes only; actual consequences of individual projects may vary and are expected to change over time.

The actions and activities are aligned with the major categories of environmental consequences considered in Chapter 5 of this EIS to make it easier to cross-reference.

- Table A provides estimates of many social and economic consequences that could result from implementation of potential fish and wildlife actions.
- Table B gives the typical impacts from alternative methods of energy generation that could affect air, land, and water.

The estimated environmental consequences of sample actions and activities are useful for those who may wish to build their own Policy Direction alternative. The intent of this Appendix is to provide the reader with information to better understand the tradeoffs among program elements.

NOTE: All dollar values are economic costs. Most of the values are based on information in the Northwest Power Planning Council's *Human Effects Analysis of the Multi-Species Framework Alternatives*.¹ That analysis was itself based on secondary information from recent environmental, economic, and policy analyses in the Region. A range is provided where estimates were provided for more than one location, or where multiple references were available. Many of the estimates were derived from research conducted for the Lower Snake River Juvenile Migration Feasibility Study.

Cost information in the tables pertains to the costs of fish and wildlife recovery and mitigation actions. Most hydrosystem costs are expressed as the cost per dam affected. Costs are expressed in terms of their one-time cost and the annualized equivalent. The annual equivalent was calculated assuming 4.75 percent real interest. Payment periods vary

¹ Council, 2000a.

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Appendix J: Typical Environmental Consequences of Potential Implementation Actions

depending on the type of action, but are generally 50 years or longer. Most hydrosystem data are from the Lower Snake River Juvenile Migration Feasibility Study, the John Day feasibility study, and from Federal planning documents.

Most habitat cost data are based on costs of agricultural and forestry practices provided by the USDA. Some habitat cost estimates are based on costs of projects funded by BPA. Cost data are generally expressed as cost per acre, though cost per mile is generally more appropriate for stream restoration practices. Cost per project is used where no better physical measure is possible.

Hatchery cost data are available from Federal sources, and statistical summaries of these data yield cost per pound of fish produced. The range of costs may reflect the age and size of fish produced, different species, and different operators. Costs of actions to reduce harvest are generally based on lost net revenues in the fishing industry, but costs of targeted fisheries can be based on the costs of implementing the new practices.

The air, land, and water data came mainly from the BPA Business Plan FEIS and Resource Programs FEIS. Several energy resources data such as diesels, simple cycle combustion turbines, and fuel cells have been added to the range of effects information provided in the BPEIS. The information from this EIS, Business Plan FEIS, and Resource Programs FEIS should give the reader a broad perspective on the air, land, and water emissions of energy resource development and operation.

Table A: Typical Fish and Wildlife Social and Economic Consequences of Implementation Actions

Action/Activity	Environmental Effect (One-time Cost per Unit)	Annualized Environmental Effect (Cost per Unit per Year)	Unit of Measure	Reference
Agriculture, Crop Switching on Irrigated Land		50-100	\$ cost/acre irrigated	
Agriculture, Crop Management (modified cultivation practices, conservation tillage, no-till agriculture, development of small ponds to retain water)	Not quantified, Potentially major		\$ cost/acre managed	
Agriculture, Erosion Management on Dry Land		10-30	\$ cost/acre managed	USDA 1996a, 1997
Agriculture, Fallow Irrigated Land		100-300	\$ cost/acre fallow	
Agriculture, Irrigation Water Management		10-100	\$ cost/acre irrigated	USDA 1996a, 1997
Agriculture, Nutrient/Pesticide Management: Irrigated Land		5-40	\$ cost/acre managed	USDA 1996a, 1997
Agriculture, Nutrient/Pesticide Management: Dry Land		5-10	\$ cost/acre managed	USDA 1996a, 1997
Agriculture, Retire Irrigated Land	2,000-5,000	95-240	\$ cost/acre retired	

Table A: Typical Fish and Wildlife Social and Economic Consequences of Implementation Actions

Action/Activity	Environmental Effect (One-time Cost per Unit)	Annualized Environmental Effect (Cost per Unit per Year)	Unit of Measure	Reference
Agriculture, Retire Dry Land/Convert to Native Vegetation	500-1,000	25-50	\$ cost/acre retired	
Agriculture, Screen Irrigation Diversions		5-47	\$ cost/cfs diversion capacity screened	USDA 1996b
Dam Breach Mainstem: Hydropower Loss		55-66 (Lower Snake Dams) 215-250 (John Day)	Million \$ cost/dam breached	Corps 1999a, 1999d
Dam Breach Mainstem: Implementation	202 (Lower Snake Dams); 2,500 (John Day)	10 (Lower Snake Dams); 120 (John Day)	Million \$ cost/dam breached	Corps 1999d, 1999e
Dam Breach Mainstem: Increased Transmission Cost	120-144 (Lower Snake Dams)	5-6 (Lower Snake Dams)	Million \$ cost/dam breached	Corps 1999d
Dam Breach Mainstem: Facilities Cost Savings		Some dam modification costs would be avoided by breaching if the costs would be required for the dams that are breached	Million \$ cost saved by breaching	
Dam Breach Mainstem: Navigation Loss		25 (4 Lower Snake Dams); 95 (John Day)	Million \$ loss/group of dams) breached	Corps 1999d, 1999e
Dam Breach Mainstem: Operations and Maintenance Cost Savings		34(4 Lower Snake Dams); 10 (John Day); 10 (McNary)	Million \$ cost saved by breaching	Anderson 1999
Dam Breach Mainstem: Other Recreation Loss		8 (Lower Snake Dams)	million \$ cost/dam breached	Corps 1999d, 1999f
Dam Breach Mainstem: Recreational Fishing Loss		0.4 (Lower Snake Dams)	million \$ cost/dam breached	Corps 1999d, 1999f
Dam Breach Mainstem: Water Supply (Irrigation) Reduction	50-61 (Lower Snake Dams); 370 (John Day); 400 (McNary)	2 (Lower Snake Dams); 20 (John Day) 20 (McNary)	million \$ cost/dam breached	Corps 1999d, 1999e
Dam Breach Tributary: Implementation Costs	10-20	0.5-1.0	million \$ cost/dam	CBB 1999a

Table A: Typical Fish and Wildlife Social and Economic Consequences of Implementation Actions

Action/Activity	Environmental Effect (One-time Cost per Unit)	Annualized Environmental Effect (Cost per Unit per Year)	Unit of Measure	Reference
Dam Modification: Change Dam Operations (Spills and Flows)		Depends on specifications; Changes in power, recreation, flood control, and water supply may be important		
Dam Modification: Dissolved Gas and Temperature Control	5-32	0.3-2.1	million \$ cost/dam modified	Anderson 1999
Dam Modification: Other Juvenile Transport and Bypass System Improvements	5-116	0.3-5.8	Million \$ cost/dam modified	Anderson 1999
Dam Modification: Surface Bypass Systems	50-250	2.6-13	Million \$ cost/dam modified	Anderson 1999
Dam Modification: Turbine Improvements	2-10	0.1	Million \$ cost/turbine rehabilitated (Each dam has 6-22 turbines)	Kranda 1999
Education, Public Environmental	1,000-100,000		\$ cost/educational event	
Enforcement, Fish and Wildlife Regulations	25,000-60,000		\$ cost/employee/year	
Forestry, Controlled Burn	25-56	3-6	\$ cost/acre treated	ICBEMP 2000a; USDA 1996c
Forestry, Eliminate Timber Harvest	125-1,500	6-71	\$ cost/acre not harvested	Quigley 1997; USDA 1996c
Forestry, Limit Size of Clearcuts	<125-1,500	<6-71	\$ cost/acre of deferred harvested	Quigley 1997; USDA 1996c
Forestry, Reforestation	300-500	15-24	\$ cost/acre reforested	USDA 1996c
Forestry, Shelterwood/Group Selection Harvest	50-100 + net on deferred timber harvest	56-130	\$ cost/acre treated	Quigley 1997
Forestry, Thinning	81		\$ cost/acre thinned	ICBEMP 2000a
Habitat Improvement, Active Meander Restoration	10,000–100,000	475– 4,750	\$ cost/acre restored	BPA 1999
Habitat Improvement, Channel Modification (Substrate, configuration, reconnect side channels, etc.)	9,000–100,000 or more	475– 4,750 or more	\$ cost/mile of stream modified	BPA 1999; ICBEMP 2000a

Table A: Typical Fish and Wildlife Social and Economic Consequences of Implementation Actions

Action/Activity	Environmental Effect (One-time Cost per Unit)	Annualized Environmental Effect (Cost per Unit per Year)	Unit of Measure	Reference
Habitat Improvement, Construct/Restore Wetlands	2,000-10,000	100– 470	\$ cost/acre constructed	USDA 1996b
Habitat Improvement, Dike Removal in Estuary	Not quantified, potentially significant		\$ cost/mile of dike removed	
Habitat Improvement, Floodplain Structure Buyback			\$ cost/property purchased	
Habitat Improvement, Instream Structures	30,000	1,425	\$ cost/mile of stream modified	BPA 1999
Habitat Improvement, Monitoring (Improve environmental data management systems)		25,000-60,000	\$ cost/person/year	
Habitat Improvement, Reconnect Aquatic Habitats	9,000–100,000 or more	475– 4,750 or more	\$ cost/project	BPA 1999; ICBEMP 2000a
Habitat Improvement, Remove Passage Obstruction (Culverts, low-head dams, weirs)	5,000-50,000	240–2,400	\$ cost/obstruction removed	BPA 1999
Habitat Improvement, Research	10,000-300,000		\$ cost/research project	
Habitat Improvement, Riparian	300		\$ cost/acre of riparian area improved	ICBEMP 2000a
Habitat Improvement, Road Management (Upgrades, maintenance, closing, and removing roads)	5,800		\$ cost/mile of road treated	ICBEMP 2000a
Habitat Improvement, Utility and Transportation Corridors (Adjust vegetation management and maintenance)	Not quantified, potentially significant		\$ cost/mile of corridor adjusted	
Habitat Improvement, Water Rights Purchase (1 Million Acre-Feet of Water from Upper Snake River)		75–85	Million \$ total cost	USDOI/ Bureau 1999
Habitat Improvement, Wildlife Habitat (Seral stages, snags, downed wood, large trees, and preferred species)	44	2.3	\$ cost/acre treated	ICBEMP 2000a
Hatcheries, Construct New Facilities	20-40	1-2	Million \$ cost/hatchery	Radtke & Davis 1997
Hatcheries, Demolition/Decommissioning	50,000-200,000	2.6-10.5	Thousand \$ cost/hatchery	

Table A: Typical Fish and Wildlife Social and Economic Consequences of Implementation Actions

Action/Activity	Environmental Effect (One-time Cost per Unit)	Annualized Environmental Effect (Cost per Unit per Year)	Unit of Measure	Reference
Hatcheries, Increase Fish Production in Existing Facilities		2-6	\$ cost/pound of smolts	Radtke & Davis 1997
Hatcheries, Increase Fish Production in New Facilities (including O&M)		7-10	\$ cost/pound of smolts	Radtke & Davis 1997
Power , Build Replacement Generation Facilities	Varies, may be significant	Varies, may be significant	\$/aMW	
Power, New Transmission Line Right-of-Way	2.7-4.4		ha dedicated to ROW/km of transmission line	USDOE/BPA 1993
Rangeland , Exclude Grazing from Riparian Zone		10-20	\$ cost/acre excluded	USDA 1996a
Rangeland, Improvements/ Restoration	50		\$ cost/acre treated	ICBEMP 2000a
Rangeland, Manage/ Eliminate Grazing (Seasonal or rotational grazing, reduced grazing intensity, deferred grazing)		1-5	\$ cost/acre excluded	USDA 1996b
Rangeland, Noxious Weed Treatments	30	2.4	\$ cost/acre treated	ICBEMP 2000a
Rangeland, Retire Rangeland	100-500	5-47	\$ cost/acre retired	USDA 1996a, 1996b, 1997
Recreation , Controlled Recreation Intensity or Rotational Use	Varies, may be significant			
Recreation, Relocate Facilities Away from Sensitive Habitats	125-1,500	6-71	\$ cost/acre not used	
Recreation, River (Floating, viewing, hiking)	71-297		\$/river trip	Corps 1999d
Urban and Rural Development , Acquisition of Conservation Easements	1-100	.05-47	Thousand \$/acre of easement acquired	
Urban and Rural Development, Improve Stormwater Treatment	1,000 - 3,000	50 – 150	\$ cost/acre-foot of water treated	
Urban and Rural Development, Improve Wastewater Treatment	0.01-10	0.0005-.5	Million \$/project	

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Appendix J: Typical Environmental Consequences of Potential Implementation Actions

Table B: Typical Impacts to Air, Land, and Water from Alternative Methods of Energy Generation

Types of Energy Conservation and Generation	Air Emissions						Water Consumed (yd ³ /aMW)	Land Area Consumed (ac./aMW)
	SO ₂	NO _x	CO ₂	Particulates	CO	PAHs		
Energy Conservation ^a	0.0	0.0	0	0.0	0.0		0	0.0
Power Efficiency Improvements ^a	0.0	0.0	0	0.0	0.0		0	0.0
Renewable Energy ^a								
Geothermal	0.8 H ₂ S	0.0	636	0.0	0.0		72,277	0.3
Solar	0.0	0.0	0	0.0	0.0		629	6.0
Wind	0.0	0.0	0	0.0	0.0		0	23.6
Hydro	0.0	0.0	0	0.0	0.0		0	0.0
Cogeneration ^a								
Solid Waste-Fired	13.6	70.2	13,256	3.0	2.7	+	0	2.0
Wood-Fired	0.5	9.0	11,959	1.7	17.0	+	87,604	2.6
Existing Natural Gas-Fired	0.0	5.3	3,542	0.0	2.0	+	5,486	0.2
Natural Gas Combustion Turbine ^{ab}								
Older	0.0-43.9	4.6-15.0	3,542-5,142	0.0-0.3	0.7-3.8	+	5,486	0.2
Newer	0.0-0.3	0.4-4.9	3,313	0.2	0.1-5.9	+	5,486	0.2
Natural Gas Reciprocating Engines (with NO _x control) ^b	0.0	1.3-2.5	--	1.1-1.2	3.7-3.8	+	--	--
Large Stationary Diesel Engines ^c (greater than 600 horsepower [hp])	1.9-47.2		7,713	1.4-4.7	2.5-39.7	+	--	--
Without NO _x Control		149.6						
With NO _x Control		14.3-88.8						
Stationary Dual Fuel (5% diesel, 95% natural gas uncontrolled for NO _x) Engines ^c	0.2	105.5	--	--	44.2	+	--	--
Nuclear Energy ^a	0.0	0.0	0	0.0	0.0		25,814	2.2
Coal ^a								
Common	8.6	21.6	8,843	1.3	1.5	+	17,247	1.3
Clean Fluidized-Bed Coal	3.1	5.3	8,052	0.6	1.4	+	26,507	1.6
Clean Gasification Coal	1.5	3.9	7,551	0.2	0.1	+	26,232	0.7
Fuel Switching (Gas water heaters and furnaces) ^a	0.0	2.4	2,550	0.0	1.1	+	0	0.0

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Appendix J: Typical Environmental Consequences of Potential Implementation Actions

Table B: Typical Impacts to Air, Land, and Water from Alternative Methods of Energy Generation

Types of Energy Conservation and Generation	Air Emissions						Water Consumed (yd ³ /aMW)	Land Area Consumed (ac./aMW)
	SO ₂	NO _x	CO ₂ (tons/aMW)	Particulates	CO	PAHs		
Power Purchases (Assumed all combustion turbines) ^a	0.0	5.3	3,542	0.0	2.0	+	5,486	0.2
Fuel Cell ^d								
Solid Oxide	0.0	0.0	4,161	--	--	0.0	--	--
Phosphoric Acid Fuel Cell	0.1	0.0	4,722	--	--	0.1	--	--
Gas-Fired (Internal combustion) ^d								
Lean Burn Engine	9.6	0.0	4,853	0.1	21.9	9.6	--	--
Rich Burn Engine	2.2	0.0	6,027	0.1	17.5	2.2	--	--
Diesel Engine ^d								
Uncontrolled	95.5	2.0	6,272	3.4	27.2	95.5	--	--
Controlled	20.6	2.0	6,272	3.4	27.2	20.6	--	--
Gas Turbine ^d								
Micro Turbine (25kW)	1.9	0.0	6,990	0.4	5.3	1.9	--	--
Small (4,600kW)	5.0	0.0	6,544	0.4	3.1	5.0	--	--
Medium (12,900kW)	2.7	0.0	5,812	0.3	2.6	2.7	--	--
Simple Cycle Gas Engine ^d	1.4	0.0	5,055	0.3	2.2	1.4	--	--

^a USDOE/BPA 1993 and USDOE/BPA 1995a.

^b EPA 2000.

^c EPA 1996.

^d The Regulatory Assistance Project 2001.

+ = Present in emissions from incomplete combustion.

-- = No data.

Appendix K
Comment and Responses

Appendix K

COMMENTS AND RESPONSES

This appendix contains detailed material relating to the comments made on the DEIS during the public review process, and the responses made by BPA. It also contains a brief section about the scoping process for this EIS. This appendix contains the following:

- A series of "Umbrella Responses" that cover questions raised repeatedly on certain key subjects (Section K.1).
- A detailed comment/response matrix that lists, by letter, each comment received, together with a BPA response (Section K.2).
- Summaries of the comment meetings conducted as part of the public involvement process for the Draft EIS (Section K.3).
- Summary of Responses to Comments related to this EIS that were submitted to the first 5-year plan, Endangered Species Act Implementation Plan (2002–2006) for the Federal Columbia River Power System (2002–2006 5-Year Plan), (Section K.4).
- A brief description of the scoping process for preparation of this EIS (Section K.5).
- Photocopies of the letters received on the Draft EIS (Section K.6).

K.1 GENERAL RESPONSES

Some subjects received comments from a number of people. To avoid duplication, we have answered all such comments on a given single subject under "Umbrella Responses." Subjects that were treated under this heading include the following:

- 1. Stating a Party's Preference**
- 2. Claims that BPA Advocated Certain Preferences in the DEIS**
- 3. The Concept of Tiered RODs**
- 4. Scope of this EIS**
- 5. Hybrid Alternatives**
- 6. Reason for the EIS**
- 7. Qualitative versus Quantitative Analysis**
- 8. The Clean Water Act.**

Related subjects are also individually addressed in the Comment Matrix and corresponding changes made in the main text of this EIS itself.

1. Stating a Party's Preference

A number of commenters stated a preference for a particular Policy Direction alternative or subsequent action. BPA appreciates those statements of preference and, before making a final decision, will consider all submitted comments. The BPA Administrator will base his

decision on a variety of relevant factors, including the important information offered in the diverse spectrum of opinions of interested parties. Especially with respect to fish and wildlife mitigation and recovery issues, the citizens of the Pacific Northwest have demonstrated repeatedly that they are an extremely knowledgeable resource.

2. Claims that BPA Advocated Certain Preferences in the DEIS

The EIS evaluates the proposed action and the reasonable alternatives to it. Because each policy direction alternative is typified by certain kinds of actions, the overall affect of the policy direction was determined by looking at the effect of the mitigation and recovery actions that would likely be taken under it. In the process of making these evaluations, the EIS strove to be objective and transparent; that is, the evaluations were made fairly and the basis for the evaluation documented and explained.

Some commenters thought the DEIS advocated certain sample implementation actions. Advocacy was not intended. Both the draft and final EIS present the sample mitigation and recovery actions under each policy direction as actions that could likely be taken under the given policy direction. As is noted throughout the EIS, these actions are examples only, and are drawn from a variety of sources traditionally looked to for mitigation and recovery ideas. Moreover, BPA avoided identifying a preferred alternative in the DEIS to maximize and facilitate public participation by avoiding undue focus on any one alternative. BPA has identified its Preferred Alternative, PA 2002, in this FEIS as required by NEPA.

3. The Concept of Tiered RODs

This EIS is, by design, a broad, policy-level analysis. BPA chose to use this dynamic procedural tool so that the public and agency decisionmakers might, in a timely way, effectively participate in the ongoing regional debate over alternative fish and wildlife recovery and mitigation policies. The reason was not to avoid future site-specific analysis, but to improve decisionmaking by focusing all parties on the issues that are ripe for consideration, while providing a way to connect the subsequent individual decisions back to an overall policy goal via "tiered Records of Decision (tiered RODs)." When site-specific projects for fish and wildlife mitigation and recovery are later proposed, those individual RODs may be linked with the accepted broader policy direction, assuming they are consistent. If information suggests that the project would diverge from what is considered in this EIS, additional analysis and documentation would be undertaken pursuant to NEPA. In this way, interested parties can "connect the dots" of the many decisions in the fish and wildlife mitigation and recovery effort inside the scope of the overall picture.

This tiering process is preferred for its efficiency and usefulness to the public and the decisionmaker(s). Most of the environmental analyses prepared under NEPA are site-specific: a bridge to be built, a road to be constructed, or a power plant to be brought on-line. Typically, an agency or group of cooperating agencies collects, evaluates, and distributes an enormous amount of quantitative data about that particular project at that particular location. But readers often complain that such narrowly focused analyses ignore the "big picture" or cumulative impacts of similar projects within the Region (i.e., a common complaint is that they look backwards or merely justify a predetermined outcome).

In response, environmental analysts sometimes seek to create complex and detailed projection models for the entire subject. These models typically contain dozens, or even hundreds, of assumptions, and generate very large amounts of computerized data. Decisionmakers and others interpret the amount of data as an assurance of precision. However, as with most things in life, natural systems do not always behave as anticipated. The data generated by modeling are only as strong as the weakest assumption: where assumptions prove faulty, the overall result will change. This leaves decisionmakers and the public with an answer that feels *precise* but is incorrect.

Even highly qualified and experienced technical experts will usually admit that some assumptions about supply, demand, economic growth, and climatic conditions, for example, are uncertain but must be made when preparing a futuristic model. While modeling can be a vital tool in certain circumstances, the modeling results are often extremely fragile. The modeling conclusions may be accepted as *fact*, rather than as the *indicators of trends* that they are meant to be.

We have found that, with respect to projecting environmental impacts at a policy level, it is better to be generally correct than precisely wrong. We therefore chose to develop a policy-level programmatic assessment using an existing database that has been generated over the years on related actions and their associated environmental impacts, to establish a *qualitative* understanding of the essential relationships for alternative policy directions. These relationships, although not precise and quantifiable at the policy level, offer an understanding of how all the major components of a policy direction fit together and what environmental consequences might be expected. The objective is to give the decisionmaker and others the opportunity to see the potential concerns of and be alerted to those unforeseen events that are likely to arise during implementation of any policy direction. These relationships can then be used as a foundation in overall strategic planning and implementation. (See also Umbrella Response on Qualitative vs. Quantitative Analysis.)

Once a particular Policy Direction is selected and presented in the EIS's ROD, the public and agency decisionmakers can then turn to site-specific actions consistent with that direction. These site-specific actions, and their associated quantifiable environmental effects, can be "tiered" from the policy-level analysis, better clarifying the extent of the effects. This stepped process helps to avoid analytical and procedural duplication and allows all parties to focus on the issues that are truly ripe for consideration. As noted earlier in this response, when new or supplemental analysis should prove necessary, it will be prepared. We have found that site-specific analysis and decisionmaking provides a superior level of information upon which to base a decision when it is tiered to an overall understanding of the general impacts within a particular subject area, such as fish and wildlife mitigation and recovery.

This tiering or stepping process can take place three ways. First, BPA could use a tiered ROD to clarify that policies, programs, or site-specific actions under consideration are clearly within the scope and adequately supported by this EIS. Second, where it is unclear whether the policy, program, or site-specific action involves legally significant new circumstances or information relevant to environmental concerns, then BPA may analyze

the action through a supplement analysis as provided for at 10 CFR 1021.314(c) to determine if a new or supplemental EIS should be prepared, or if no further NEPA documentation is required. Finally, if the action clearly involves significant new circumstances or information, then BPA may prepare a supplemental EIS tiered to this EIS, or other EISs, and document its decision through a ROD, or prepare other appropriate NEPA documentation such as an EA/FONSI. BPA expects to rely on the tiered RODs and supplement analyses whenever appropriate.

4. Scope of this EIS

Several comments expressed concern that some of the Policy Directions included actions beyond BPA's current legal jurisdiction or inconsistent with existing laws. We acknowledge that certain mitigation and recovery actions within the policy direction alternatives are beyond BPA's legal jurisdiction or inconsistent with existing laws. However, we believe that BPA must include such actions in the analysis, when preparing a policy-level EIS, for two primary reasons.

First, the Council on Environmental Quality (CEQ) has advised Federal agencies that alternatives outside the legal jurisdiction of the lead agency must still be analyzed if they are reasonable. CEQ has further stated that a potential conflict with Federal or local law does not necessarily render an alternative unreasonable. (See 40 CFR 1502.14.)

A policy-level analysis is designed to guide decisionmaking in the present *and* the future, as a foundation to tier future site-specific decisions or as a planning tool to revisit alternative policy directions. To insure its longevity, the policy-level analysis must evaluate actions *now beyond* existing authority, but *possibly within* future legal authorities. Laws are constantly being amended, repealed and created. In fact, as explained by the CEQ, an EIS may serve as the basis for modifying Congressional approval. Accordingly, BPA has included some actions that could conflict with existing laws to accommodate the possibility that laws might change in the future and to insure the vitality of the analysis, if they do. See 40 CFR 1505.2 and 1506.8.

Second, all of the reasonable Policy Directions have a foundation in actions and proposals put forth within the Region. Because BPA's intent is not to eliminate an alternative or actions from long-term consideration, or establish the value basis for the future of the Region, the sample mitigation and recovery actions for each policy direction include actions BPA may not ultimately support or have the authority to implement. BPA has spent much of its time trying to capture the many different perspectives of fish and wildlife recovery in the Region. By putting all reasonable possibilities on the table for consideration, the decisionmakers and other interested parties can see the many trade-offs and concerns of considering any particular path to move forward. See 40 CFR 1508.7 and 1508.18.

5. Hybrid Alternatives

Some comments suggested that BPA must select from among the five base alternatives described in this EIS or proceed on the Status Quo course, and that selection of a "hybrid" or "mixed" alternative would require re-circulation of the document for public comment. For several reasons, BPA disagrees. Often, an agency considers a project with a very large

number of possible reasonable alternatives. In the case of fish and wildlife recovery and mitigation, with so many potential actions to mix, match, and characterize, the number of possible reasonable alternatives was almost infinite. The five alternatives identified in the EIS were designed to represent the full spectrum of distinct reasonable alternatives along a continuum of possibilities. Even the Status Quo is a mixture of elements from the five different alternatives, although it differs from these basic alternatives in that it does not presume to proceed under a unified planning approach (see Appendix I, Table B). The CEQ's 40 Questions recognized this issue and support the use of such a methodology to help alleviate the problem of analyzing endless alternatives.

Next, within each policy direction alternative are sample mitigation and recovery actions that help characterize the alternative (see Volume 3). The impacts of those actions has been described generally in Chapters 3 and 5. When a hybrid alternative gets created for consideration, its impacts can be compared to other alternatives by examining the impacts for its component mitigation and recovery actions as provided in Chapters 3 and 5.

BPA recognizes and expects that over time other reasonable alternatives will be created from within the spectrum of policy directions presented in this EIS. In fact, BPA encouraged just such creativity in the "Build Your Own Alternative" section of this EIS (see Appendix D). Here again, by providing agencies and the public with the overall impact analysis for the sample actions, this final EIS may be used for many years, without supplementation, to guide mitigation and recovery policy.

The alternative identified in this final EIS by BPA as its Preferred Alternative, PA 2002, is within the spectrum of alternatives that were analyzed in the Draft EIS because it is similar to the Status Quo alternative with respect to environmental concerns and essentially consists of a blend of the Sustainable Use Focus and Weak Stock Focus alternatives. The impacts of the PA 2002 sample actions are discussed in this EIS, and the overall impacts of the PA 2002 can be compared to the other policy direction alternatives. Thus, the PA 2002 is within the scope of the alternatives discussed in the DEIS, and it was not necessary to recirculate this EIS for comment.

6. Reason for this EIS

In the **Foreword/Update** to this EIS, BPA discussed the rationale for preparing this analysis. (Please also see the **Purpose and Need** section in Chapter 1 of this EIS for more on the basis for the analysis.) However, there is an additional reason for the use of a policy-level approach that bears mention.

The Pacific Northwest is currently engaged in a crucial debate about fish and wildlife recovery and mitigation. It is expected that policy choices affecting the environment, economy, and energy generation and use are already being made and will continue into the future. However, the public and decisionmakers continue to find it difficult to understand the interrelationships of the multiple processes addressing these issues. This policy-level environmental impact statement provides a vehicle for timely and effective participation in these overall decisions that will frame a current and future course of fish and wildlife actions within the Region.

This EIS, by design, will keep on providing agency decisionmakers with a complete understanding of the impacts associated with certain policy options *before* they might make an irreversible commitment of resources. Because this EIS is designed to be useful for as long as the basic relationships between human activities, fish and wildlife, and the environment remain as is, the public and regional decisionmakers alike can refer to it often for an overall understanding of the environmental consequences of various actions or changes they may contemplate now and during future strategic planning.

7. Qualitative versus Quantitative Analysis

This EIS, as noted elsewhere, is a policy-level analysis. It relies upon a *qualitative* analysis of the more predictable known relationships demonstrated by past actions and associated impacts to inform the general public and agency decisionmakers of the consequences of alternative policy directions. BPA believes that this approach provides the public and decisionmakers with the information necessary to understand the possible impacts of potential policy decisions. However, BPA has been careful to compile, organize and consider the *quantitative* data that support the established relationships and to reference them in this EIS. Those who wish to independently evaluate the data underlying these fundamental relationships may easily access the data that has been incorporated by reference through the numerous footnotes and the References section. The goal is to present the essence of the enormous volume of available site-specific data in a way that will contribute to the longevity of the analysis and, simultaneously, provide the reader with a level of information that can be digested and understood which is necessary to make a policy-level decision.

One of the great challenges in presenting policy-level analysis is refining thousands of pages of specific data on numerous subjects into a manageable document to facilitate effective decisionmaking and public participation. Of course, there may be other ways to organize the reams of data. However, we believe that the organizational approach we have taken for this EIS is reasonable, and have taken care to make the underlying data available for those wishing to review the agency's findings or conclusions in more detail.

8. Clean Water Act

Several comments raised issues concerning the Clean Water Act (CWA; 33 U.S.C. § 1251 et seq., as amended). BPA, like other Federal agencies, is obligated to comply with the applicable requirements of the CWA. BPA recognizes this obligation throughout this EIS. For example, in Section 1.2.2 of this EIS, BPA identifies the fulfilling of its obligations under the CWA as one of the purposes for the proposed action. In Section 3.1, BPA acknowledges that for an alternative to be immediately viable, it must allow for compliance with the applicable requirements of the CWA. BPA thus recognizes that CWA compliance is an essential part of any Policy Direction adopted by BPA.

BPA has several responsibilities under the CWA. The CWA requires Federal agencies such as BPA to comply with all Federal, state, interstate, and local requirements respecting the control and abatement of water pollution in the same manner and to the same extent as any non-governmental entity (33 U.S.C. § 1323(a)). In cases where BPA must apply for a Federal license or permit to conduct an activity that may result in a discharge into navigable

waters, BPA must seek state Section 401 certification that the activity complies with the applicable provisions of the CWA, and must provide this certification to the Federal permitting or licensing agency (§ 1341(a)(1)). For discharges of pollutants from BPA activities or facilities, BPA also has a responsibility to comply with applicable permits issued under Section 402 of the CWA (§ 1342). In addition, BPA must obtain authorization under Section 404 of the CWA for any discharge of dredged or fill material into waters of the U.S., including wetlands (§ 1344).

Many of the comments concerning the CWA center on the current debate over alleged violations of the CWA from operation of the four Federal dams—Ice Harbor, Lower Monumental, Little Goose, and Lower Granite dams—along the Lower Snake River in eastern Washington. These four dams are owned and operated by the U.S. Army Corps of Engineers (Corps), which must make the ultimate decisions regarding the operation of these dams and steps needed to comply with the CWA. BPA nonetheless recognizes that its role as a co-manager and action agency for the Region's Federal power system and the Policy Direction it adopts may influence operational decisions that might be made by the Corps about these dams.

However, it is important to bear in mind that the Policy Direction that BPA adopts will be the **BPA** policy direction. It will guide BPA in its fish and wildlife decisions, but it will not necessarily guide or direct the decisions of other regional agencies and entities such as the Corps unless that Policy Direction is adopted by them. Although BPA believes adoption of consistent policy directions by other agencies and entities is desirable, this will happen only if the other agencies and entities determine that the policy is consistent with their authorities and obligations. Thus, it is uncertain how much, if any, influence BPA's Policy Direction will have on Corps decisions for operation of the Lower Snake River dams. The following discussion summarizes some of the recent key developments in the CWA controversy over the Lower Snake River dams.

In 1999, various environmental and fishing groups filed suit in the U.S. District Court for the District of Oregon, alleging that the Corps failed to comply with its obligations under the CWA by operating the Lower Snake River dams in a manner that causes or contributes to violations of the State of Washington water-quality standards for total dissolved gas (TDG) and water temperatures, as well as the state's antidegradation standard. In addition, these groups alleged that the Corps' 1998 Record of Decision (ROD) for operation of the dams was arbitrary and capricious under the Administrative Procedures Act (APA), 5 U.S.C. § 706(2)(A) for failing to address Corps compliance with its legal obligations under the CWA.

In February 2001, Judge Helen J. Frye ruled that the Corps had not considered all relevant factors in making its 1998 ROD and had failed to address CWA compliance obligations, and that the decision concerning operation of the Lower Snake River dams under this ROD thus was arbitrary and capricious under the APA.¹ Judge Frye thus remanded the case to the Corps for further investigation and additional explanation in a new Corps decision of the Corps' compliance with its legal obligations under the CWA. The Corps subsequently

¹ *National Wildlife Federation v. United States Corps of Engineers*, 132 F. Supp. 2d 876, 895 (D. Or. 2001).

issued a new ROD addressing these compliance issues in May 2001.² Plaintiffs then challenged this new ROD for allegedly not complying with Judge Frye's February 2001 ruling. In January 2003, Judge Frye ruled that the 2001 ROD considered all relevant factors and addressed the Corps' CWA compliance obligations, and that therefore the Corps did not act arbitrarily and capriciously or contrary to law.³

In addition to addressing CWA compliance issues in the May 2001 ROD, the Corps has addressed these issues in its February 2002 Final Feasibility Report (FR)/EIS for improved juvenile salmon passage through the Lower Snake River hydropower system.⁴ This FR/EIS identified and assessed four alternatives, including a dam breaching alternative, for improving salmon migration. The Final FR/EIS identified a modified version of Alternative 3—Major System Improvements (Adaptive Migration) as the Corps' preferred alternative. Under this alternative, the Corp would implement a number of structural and operational measures to improve fish passage through the four Lower Snake River dams without breaching or removing these dams, with increased focus on adaptive migration capabilities. In September 2002, the Corps issued a ROD documenting its decision to adopt and implement its preferred alternative for improving Lower Snake River salmon migration.⁵

The following discussion summarizes *technical information* concerning CWA compliance from the May 2001 ROD, as well as the Lower Snake River Juvenile Salmon Migration Final FR/EIS.

The Corps' May 2001 ROD provides, among other things, a discussion of the Corps's legal obligations under the CWA and a description of efforts taken by the Corps over the past 30 years to address concerns that its dams cause increased TDG and water temperatures in rivers such as the Lower Snake.

Regarding TDG, the May 2001 ROD identifies operational changes being undertaken to minimize or avoid violations of the state water quality standard. These are actions such as making spill volume adjustments for listed species, working with BPA to minimize involuntary spills from lack of power load, and obtaining variances from the standard for voluntary spills conducted by the Corps to comply with ESA requirements for fish passage. The ROD also identifies improving existing, and installing additional, spillway deflectors at the dams as a structural modification that would reduce TDG to the greatest extent technically feasible, while still allowing for voluntary spills up to TDG levels specified in NMFS' BiOp.

Regarding water temperatures, the May 2001 ROD document notes that water temperatures at the dams sometimes exceed state water quality standards. After reviewing existing data, the Corps concludes that, while the Lower Snake River dams may contribute to a *shift in the temperature regime* in the portions of the river affected by the dams (i.e., these portions may

² Corps 2001a.

³ *National Wildlife Federation v. United States Army Corps of Engineers*, --- F. Supp. 2d --- (D. Or. 2003).

⁴ Corps 2002b.

⁵ Corps 2002c.

warm up or cool down earlier or later in the year than under natural conditions due to the dams), the dams do *not significantly increase the number or severity* of water temperature exceedances. Because the Corps' opinion is that there is no causal connection between the dams and water temperature exceedances, the Corps concludes that operational and structure changes at the dams are not warranted, and states that it is not now seeking variances for exceedances.

The Corps' Final FR/EIS also includes a detailed evaluation of the effects of the Lower Snake River dams on various aspects of water quality, including TDG, water temperatures, dissolved oxygen (DO), sediment accumulation and chemical contamination, nutrient levels, and trophic ecology.⁶ Regarding TDG, this evaluation finds that river water passing through the dams currently reaches TDG levels that violate the state TDG standard on a frequent basis during periods of involuntary spill, as well as during periods of voluntary spill. The Corps believes that structural modifications implemented under Alternative 3 would eliminate TDG violations during periods of voluntary spill, but that TDG levels during involuntary spills would still violate the state TDG standard (although these violations would be less severe). If the dams were breached, TDG levels would return to pre-dam levels, and the Corps expects that these levels generally would be at or below the state TDG standard.

Regarding water temperatures, the Final FR/EIS water quality evaluation reiterates the conclusion made by the Corps in its 2001 decision that the primary effect of the dams is a shift in the temperature regime of the Lower Snake River. More specifically, the evaluation finds that data show that the portions of the river affected by the dams currently warm up more slowly (by about one week) in the spring and summer than they would under a breached dam scenario, but also currently cool down more slowly (by about two weeks) in early fall. The evaluation considers both empirical data and modeling projections to analyze possible increases in water temperatures from the dams. The empirical data indicate that the state water temperature standard would be exceeded approximately the same number of days in an average flow year under a breached dam scenario as it is under current conditions with the dams in place, and that water would reach the same maximum temperature in the summer under the breached dam scenario as it does under current conditions. The water temperature modeling also indicates that maximum water temperatures would be approximately the same under both scenarios. In addition, this modeling projects that water temperatures at river mile (RM) 107 (i.e., Lower Granite dam) would exceed the state water temperature standard approximately the same number of days in an average flow year under both scenarios. However, the modeling also projects that the number of days of water temperature exceedances at RM 10 (i.e., Ice Harbor dam) would be reduced by about 20% by dam breaching, as compared to existing conditions with the dams in place.

⁶ Corps 2002b, Appendix C.

K.2 THE COMMENT RESPONSE MATRIX

The following Table lists the commenters who responded to the Draft EIS. Comments in Section K.2.2 are identified by letter numbers as shown in this table.

Table A. List of Commenters to Draft EIS

Letter No.	Commenter	Letter No.	Commenter
1	John/Megan Kendall	24	Lincoln County Board of Commissioners
2	US Dept of Agriculture/Natural Resource Conservation Service	25	Washington Dept of Natural Resources
3	Lincoln County Planning Commission	26	Edward B. Sinclair
4	Bruce W. Henion	27	Columbia-Snake River Irrigators Association
5	Katherine Van Tuyl	28	Charles J. Ferranti
6	Sharon Waterman	29	Inland Ports and Navigation Group
7	Rachel Thomas	30	Shelly Grimshaw
8	Casey Jones	31	Elwin L. Fisk
9	D.E. Callison	32	Public Power Council
10	Susan Krentz	33	Natural Solutions
11	Anonymously Submitted Newspaper Articles	34	Columbia River Inter-Tribal Commission
12	US Dept of the Interior/Office of the Secretary	35	Washington State Farm Bureau
13	Rick Carosone	36	Maia E. Genaux
14	S. Nighthawk	37	Timothy Charles Reagan
15	Joe Thompson	38	Save Our Wild Salmon
16	Paula A. Jones	39	Spokane Tribe of Indians
17	Marshall Magee	40	Committee of Nine and Idaho Water Users Association
18	Pacific Northwest Generating Cooperative	41	Kootenai Tribe of Idaho
19	Barbara Birnbaum	42	US EPA Region 10
20	Joseph Demir	43	Shoshone-Paiute Tribes
21	Karen Carlson	44	State of Idaho Office of Species Conservation
22	Lester Carlson	45	The Mountaineers
23	Curtis Magee		

K.2.1 How to Read the Comment Response Matrix

The table that follows contains information from each submitted comment letter, separated by the EIS Team into individual recommendations, points of disagreement, or general remarks. To make sure that we stayed as close as possible to the commenter's intent, we

have carefully reproduced each speaker's words. In a few instances, where the writer accidentally omitted a letter or where a reader referred to but did not name a section in the EIS, we have inserted the needed letter or point of reference in order to convey the reader's intent more accurately—these changes are always indicated with [brackets]. We have not summarized any comments, but where a subject was addressed over several sentences or paragraphs, we have selected the major points, indicating omitted material with ellipses (. . .). These may be checked against the original letters, found at the end of this appendix.

Each comment letter received an individual number; each comment within the letter also received a unique identifying number (so that, for instance, the very first comment on the list comes from Letter #1, and is Comment #1). From left to right, the columns contain the following information:

- **Number of the comment letter and comment:** each letter received its own number, as did each comment within that letter.
- **The actual comment** (see note above).
- **The response:** in some cases, the comment can be responded to in the table itself, where a short answer is appropriate. Where a number of commenters addressed the same subject, we have written a response that applies to several comments at once—an "umbrella" response (see preceding section). Wherever possible, we have indicated the section in the EIS where either changes have been made to respond to the comment or material relevant to respond to the comment may be found.

The matrix also contains numerous references to documents where more information can be found. Each of those reference documents can be found, listed alphabetically under the author's or initiating agencies' respective names, in the References section of this EIS (Volume 1). Note that because the Lower Snake River Juvenile Salmon Migration Feasibility Report and Final Environmental Impact Statement bears a lengthy title, and because it is referenced frequently, we have adopted a "shorthand" title of "FR/EIS" in the Matrix.

K.2.2 The Comment Response Matrix

Comments from Letters		
Letter/ Cmt #	Comment	Response
1/1	I must say that it is very apparent that we collectively must implement to recover our anadromous fish population while maintaining solid economic factors.	Please see Umbrella Response on Preferences.
1/2	The information is in gentlemen ... and we must act on it. ... It is time we take some action	We agree; see Chapter 1 and the Umbrella Response describing the Reason for the EIS.
1/3	Please remove the earthen portion of the four lower Snake River Dams to allow more natural passage for these fish.	See Umbrella Response on Preferences. Also refer to the Umbrella Response on the Clean Water Act for a discussion of the controversy over the Lower Snake River dams, and to the Corps' Lower Snake River

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Comments from Letters		
Letter/ Cmt #	Comment	Response
		Juvenile Salmon Migration Final FR/EIS (Corps 2002b) for a comprehensive analysis of the impacts associated with breaching the four Lower Snake River dams.
1/4	Just alone with a solid return of salmon and steelhead annually we will create more jobs and boost economies of once slow areas.	Agreed, more salmon and steelhead would be a boost to some economies. However, the amount and location of boost also depends on harvest policies. The exact harvest policies under each Policy Direction are not sufficiently defined to say which economies would be helped the most. Selective harvest policies would tend to favor river harvest and economies over ocean harvest and economies. Following BPA's initial Policy Direction decision at the conclusion of this EIS process, the Agency will proceed with other more specific program and action decisions, as it implements the chosen Direction. More detailed information clarifying where changes in the economy may take place will be addressed at that time. See Section 5.2 and 5.3 in this EIS for more information on the many interrelationships and trade-offs among the various actions associated with fish and wildlife mitigation and recovery. Also, see the Umbrella Response regarding Tiered RODs.
2/1	It is obvious that the intent of the EIS is to encourage positive support for habitat restoration from private landowners.	See Umbrella Response regarding Tiered RODs, Claims that BPA Advocated Certain Preferences in the DEIS, and the Reason for the EIS. The EIS did not identify exact mixes of property purchases, positive incentives, and regulation. Voluntary, cooperative habitat protection and improvement is more likely to be successful than the alternative. Implementation will include locally led initiatives financed by local, private, state, and Federal funds.
2/2	The document does not adequately describe what actions are contained in the implementation plan, itself. The concept of an implementation plan implies decisions have been reached by BPA as to what actions to pursue to restore fish and wildlife. ... In addition most of the [sample implementation] actions listed read as goals and objectives not actions that describe what, when, where, who and how different tasks will be undertaken. Without this level of information it is difficult if not impossible to describe the cumulative environmental, economic and social effects required by NEPA.	See Umbrella Response regarding Tiered RODs. In order to account for cumulative environmental, economic, and social effects, it is important first to understand their interrelationships. This EIS focuses on those interrelationships so that an overall conclusion or a cumulative assessment can be completed, with a full understanding of the consequences. Without this level of understanding about the relationships, the sheer enormity and complexity of the effort to recover fish and wildlife in the Region would likely overwhelm and elude the public and decisionmakers. Because this EIS is a policy-level EIS, it focuses on an analysis of the policies that would be implemented under each Policy Direction in the EIS, rather than on site-specific actions. The sample implementation actions are intended to provide examples of the actions that could occur under each Policy Direction; site-specific analysis for specific actions would occur once an action is proposed. As described in the Umbrella Response referenced above, BPA intends to "stair-step" the decisions made under its

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		<p>adopted Policy Direction so that others, including the public, can follow the train of logic to the decisions made over time.</p> <p>Regarding the Implementation Plan that BPA and others are developing to comply with the NMFS 2000 FCRPS BiOp, please see Section 2.3.2.4 of the EIS. Those actions to be taken under the Implementation Plan that are derived from the NMFS BiOp and the Northwest Power Planning Council's (Council) Program have also been incorporated into the sample implementation tables (Volume 3), where appropriate, for each Policy Direction.</p>
2/3	Effects do not [c]ite study or research references. They do not appear to be based on science nor on a process to synthesize societal values about the proposed alternatives.	Effects were taken from publicly available EISs, studies, and other regional documents (please see the Documents Incorporated by Reference in Chapter 1 and the References sections for details). Over 600 footnotes have been added throughout this Final EIS to better direct the reader to specific detailed information. See, also, Umbrella Responses on Tiered RODs and the Qualitative versus Quantitative relationship. The DEIS, as well as this Final EIS, was intentionally written NOT to take a particular stance on what the Region's values should be.
2/4	The concept of "Build Your Alternative" ... is interesting but perhaps should have been used through a public process to scope the alternatives prior to developing an implementation plan and this draft EIS.	<p>The "Build Your Own Alternative" was an out-growth of the scoping process. As the EIS team became more familiar with the different processes for fish and wildlife being conducted around the Region, the need for this section became apparent. What we experienced at the beginning of the EIS process (i.e., scoping) is still true, as demonstrated from the comments received on the DEIS and the continuing processes in the Region.</p> <ul style="list-style-type: none"> ▪ The science still does not have agreement as to the <i>precise</i> answer on how to resolve the fish and wildlife recovery effort. ▪ Complete <i>agreement</i> on the actions to take to implement a fish and wildlife recovery plan can still not be reached. ▪ The level of what is considered <i>reasonable</i> for alternatives is still being questioned. <p>If BPA had waited until the many processes around the Region coalesced into one agreed-upon approach for fish and wildlife recovery, the necessary time to prepare this EIS would have further delayed implementation by 2-3 years or more. Also, the opportunity to examine objectively a broad scope of alternatives would have been lost, and this EIS analysis would have been focused on implementing a decision already made. It would not have been a prudent environmental or public-policy strategic decision for the Administrator to wait while fish and wildlife might have continued to decline.</p>

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		<p>Even now, it is still uncertain whether there will be complete agreement on the <i>right</i> approach for the Region to take on fish and wildlife recovery.</p> <p>The "Build Your Own Alternative" section in this EIS is needed: it offers the public, other interested parties, and decisionmakers the methodology and understanding as to how to construct new alternatives (modified Policy Directions) in the future from the actions and effects information and data in this EIS. As we noted in the DEIS, we anticipate that Policy Directions will not remain static over time (see Chapters 2 and 4 specifically). This EIS's analytical process and the use of the Tiered ROD concept (see Umbrella Response on Tiered RODs and Figure 1-6) allow us to cover the many thousands of alternative combinations of the potential Policy Directions. This in turn allows for more informed and expedited decisions that transfer the needed funds into actions on the ground to help fish and wildlife recovery.</p> <p>Finally, BPA also offered to assist those interested in trying the "Build Your Own Alternative" process during the comment period on the DEIS. However, no one accepted this offer.</p>
2/5	<p>The Commerce Focus Alternative has, what NRCS perceives as, major inconsistencies. The draft EIS defines the Commerce Focus as: "a libertarian approach to conservation [quotes DEIS]" On pages xxiv-xxv of the draft EIS summary the effects of the Commerce Focus are displayed as less effective than the No Action alternative. ... NRCS and our conservation partners view this as the only viable approach. A locally led, voluntary approach is the only way to get the needed private landowner trust and stewardship needed to restore fish and wildlife to sustainable levels. The effects of this alternative however, are displayed in the draft EIS as less effective than the "Status Quo (No Action) alternative." ... Regulations and enforcement at best control behaviors but only as long as the regulators are visible.</p>	<p>The Commerce Focus alternative would emphasize private incentives to improve habitat and other activities to enhance native species. We recognize that incentives would likely be most effective and efficient for actions that involve private lands. However, public lands and public and private water uses must also be considered. The Commerce Focus would also, generally, de-emphasize non-commercial values and emphasize commercial use of land and water resources. Overall, we believe that this emphasis would be less effective than some other Policy Directions in restoring species with less commercial value. We have eliminated the characterization, "libertarian" in this EIS.</p>
2/6	<p>Long-term approaches that emphasize maximizing economic, social and cultural values and internalizing both private and public costs will result in similar outcomes as the draft EIS alternative</p>	<p>It is easier to say that we will maximize economic, social, and cultural values than it is to consider the very different values, and beliefs about the relative importance of values, that lead to very divergent preferences. We do believe that internalizing costs, the</p>

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	described as "Sustainable Use." The use of financial incentives and processes that empower local decisionmaking can effectively be used to accelerate efforts to meet both economic and environmental objectives.	use of financial incentives, and local decisionmaking are solid foundations of an efficient, workable approach. See also Umbrella Response on Preferences.
2/7	At least for Habitat Actions, NRCS disagrees that the implementation actions listed for the Commerce Focus Alternative (end of Chapter 3) would result in the effects displayed in chapter 5 (pages 226-266).	We note your opinion. While we believe that the effects identified in Chapter 5 are those that could reasonably be expected to flow from the actions for this alternative identified in Chapter 3 (now in Volume 3), we have reviewed the actions and effects in light of your comments, those of others, and the data in the documents incorporated by reference. Chapter 5 has been modified accordingly. Please refer to Section 5.3, Environmental Consequences.
3/1	I request ... a 60-90 day extension to the comment period.	The comment period for the Draft EIS began on June 22, 2001, with publication of the Notice of Availability for the Draft EIS in the <u>Federal Register</u> , and originally ended on August 6, 2001. Thus, BPA originally provided a 45-day comment period for the Draft EIS, as required by NEPA and DOE regulations. However, based on public input such as this commenter's letter, balanced with the agency's need to continue to proceed with the EIS, BPA chose to extend the end of the Draft EIS comment period for 32 days until September 7, 2001. Thus, a 77-day comment period was provided for the Draft EIS, which BPA believes was a reasonable amount of time for public review and comment.
3/2	[The FWIP DEIS comment period] also violates [Lincoln County Planning] land use plans for adequate notice, and consultation, cooperation and coordination.	As discussed on page 1 of the Draft EIS, this EIS is being prepared by BPA, a Federal agency, in order to comply with NEPA and assist BPA's Administrator in making an informed policy-level decision for the agency. While BPA is required to comply with the procedural requirements of NEPA, BPA is not obligated to comply with the procedural requirements of local land use regulations for this review. Generally, pursuant to the Supremacy clause of the U.S. Constitution, Federal agencies such as BPA are not bound by such state and local procedural regulations unless Congress has waived supremacy. Nevertheless, BPA believes that it has provided ample opportunity to participate in this process and will further coordinate with local officials as more specific actions are tied to this analysis.
4/1	Request a 60-90 day extension to the comment period. The August 6, 2001 suspense does not give sufficient time to receive the document, review it, and provide comments.	See response to comment 3/1.
5/1	Request a 60-90 day extension to the comment period. The August 6, 2001	See response to comment 3/1.

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	suspense does not give sufficient time to receive the document, review it, and provide comments.	
6/1	Please extend the comment period another 60-90 days to allow those of us in these states to review the draft.	See response to comment 3/1.
7/1	Request a 60-90 day extension to the comment period. The August 6, 2001 suspense does not give sufficient time to receive the document, review it, and provide comments.	See response to comment 3/1.
8/1	Please extend the comment period for an additional 60 to 90 days. The current August 6, 2001 suspense doesn't allow sufficient time to receive, review, and provide comments on a document of this import.	See response to comment 3/1.
9/1	I request at least a 90 day extension to the comment period. Less than a month is hardly sufficient time to receive the document, review it and provide comments.	See response to comment 3/1.
10/1	Request a 60-90 day extension to the comment period. The August 6, 2001 suspense does not give sufficient time to receive the document, review it, and provide comments.	See response to comment 3/1.
11/1	Save our rivers, our salmon; breach dams.	See Umbrella Response regarding Preferences. Also refer to the FR/EIS for a comprehensive analysis of the impacts associated with breaching the four Lower Snake River dams.
12/1	The FEIS should include the following [additional] information on impacts to recreation use and facilities for the lands managed through the [National Park Service] and should be considered in the final analyses for mitigation to these resources.	All information submitted as part of a formal comment will be part of the Administrative Record for this EIS, including the material on impacts on recreational use and facilities for the lands managed through the National Park Service. Even information that may be more detailed than necessary for a policy-level decision will remain available to the public and decisionmakers as part of the Administrative Record for this process, in order to benefit site-specific actions tiered from this decision. One of the benefits of this type of process is that the relevant portions of the record will be available when a specific action is considered for implementation.
12/2	The Department [of Interior] is concerned that changes in reservoir operations that directly affect the management of the [Lake Roosevelt] National Recreation Area, in terms of public access and	See response to comment 12/1, above. Impacts will likely vary by alternative. Site-specific impacts will be addressed for each site-specific action. Fundamentally, BPA recognizes that reservoir drawdowns to create higher flows downstream for migrating juvenile salmon

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	resource management and protection, have not been adequately addressed in the DEIS. ... The following [additional] information should be included in the FEIS for analysis.	will trade-off a variety of other upstream impacts on cultural, economic, and fish and wildlife resources.
12/3	We also request that [BPA] provide information in the FEIS on how [the agency] will mitigate for these impacts to recreation use and facilities.	This EIS identifies possible mitigation measures throughout Chapters 4 and 5 and, in particular, Section 5.2. Also, the ROD will provide information regarding mitigation for the final decision. See also response to comment 12/1, above. Actual mitigation is coordinated with the hydro project owner(s) and operator(s), the recreational land manager, and affected states and tribes.
12/4	The Department [of Interior] is also concerned that the three concessionaire operated marinas within the [Lake Roosevelt National Recreation Area] that would be affected by changes in the summer operations of Lake Roosevelt were not addressed in the DEIS. Please include this [additional] information and the analyses for affects on these concessionaires in the FEIS.	This policy-level analysis does not assess actions as detailed as the impacts on three concessionaire-operated marinas within the Lake Roosevelt Recreation Area. However, this information will undoubtedly be useful in evaluating subsequent site-specific proposals. Accordingly, it will be included in the Administrative Record for this EIS to be used at the most appropriate time. See, also, the Umbrella Response regarding Tiered RODs and the response to comment 12/1, above.
12/5	[DOI] are very concerned that the impacts to cultural resources in the LRNRA, given the drafting of Lake Roosevelt below elevation 1,280 feet, was not adequately addressed in the DEIS. ... The [additional] following information should be included in the FEIS and used for the impacts analyses of this project on cultural resources.	See response to comment 12/1, above. In addition, this EIS provides a broad, policy-level analysis of potential impacts associated with various Policy Directions. As such, the EIS discusses only general, qualitative impacts on cultural resources. (See, for instance, Sections 5.2.3.3 and 5.3.3.4 of this EIS.) Once a particular Policy Direction is selected and site-specific actions are proposed, more in-depth analysis of cultural resources effects from each site-specific action will be conducted through additional NEPA documentation, as necessary. See also the General Response regarding Tiered RODs.
12/6	[DOI] are concerned that the impacts [on the resident fishery in Lake Roosevelt] from fluctuations below elevation 1,280 feet (July to August) were not addressed in the DEIS. The [additional] following impacts would be two-fold [productivity and loss of macrophyte populations], and should be included and analyzed in the FEIS.	See response to comment 12/1 and the other previous comments to letter 12. The general impacts on the resident fishery from drawdown have been considered in the analysis on resident fish in Sections 5.2 and 5.3, and summarized in Chapter 3. See also, the Umbrella Response on Tiered RODs.
12/7	The DEIS did not address the exposure to the public during the peak public utilization period, of additional portions of the lake bed, which may have deposition areas containing toxic materials. These toxic materials have been the result of past and present	See previous responses to comment letter 12. Also, the FR/EIS, even though focused on non-storage dams, provides a useful analysis of the impacts associated with drawdown, including geology, soil, agricultural, water quality, and economics. For analysis more directly focused on storage dams, please see the relevant analysis from the SOR FEIS. Further, for a policy-level

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	activities of a lead/zinc smelter and pulp mill upstream, and from other mining, logging, agricultural, industrial and municipal activities. The affect to the public and possible mitigation given the drawdown of the lake should be included in the FEIS.	analysis, see Sections 5.2 and 5.3 of this EIS regarding the general impacts of reservoir drawdown and pollutants.
13/1	The only two options that can be considered ... is the Natural Focus alternative or the Weak Stock Alternative. I think that there should be some modifications to both of these options ... The only thing that will restore our fish runs is the breaching of the lower four Snake River dams.	See Umbrella Response on Preferences. Also refer to the FR/EIS for a comprehensive analysis of the impacts associated with breaching the four Lower Snake River dams.
13/2	I realize the consequences of breaching are the loss of barging jobs and power generation. The addition of long fishing seasons will more than offset this loss.	Comment noted. For more on the impacts on barging and power, as well as associated fishing concerns, see FR/EIS Sections 5.9 through 5.14 and Appendix I.
14/1	Save our rivers, our salmon; breach dams.	See Umbrella Response regarding Preferences. Also refer to the FR/EIS for a comprehensive analysis of the impacts associated with breaching the four Lower Snake River dams.
15/1	In essence we are maintaining the status quo ... yet we know what it takes to restore the runs. ... Nothing in the paper convinces me that we can save the salmon without breaching dams (Snake River Dams). We don't have time for study and research. These species face [extinction].	<p>We appreciate and agree with the commenter's desire to move more quickly in the fish and wildlife mitigation and recovery effort. Even though many actions have already been implemented and much time has passed in trying to recover fish and wildlife in the Region, the precise science for successful fish and wildlife recovery has not been agreed upon at this time. As can be demonstrated by the comments on the DEIS, there is disagreement on what should be done to recover fish and wildlife. Even on a broad scale, some in the Region believe the Lower Snake River dams should be removed, while others argue that there is no overall salmon species problem. The "bookend" Policy Directions, such as Natural Focus and Commerce Focus, are seen by some as the only reasonable choice, while others think these are too extreme to even be considered (see the Umbrella Response regarding Scope).</p> <p>A purpose of this EIS is to help in the understanding of the general environmental consequences and trade-offs that can be expected under the different Policy Directions. Our intent with this EIS is to "stair-step" the decisionmaking process so the public, other interested parties, and the decision- makers can see how the different levels of decisionmaking for fish and wildlife recovery can affect the human environment. Basically, we want to "look before we leap." However, in doing so, we also want to expedite future processes, so the</p>

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		transfer of money into actions that can make a difference to fish and wildlife recovery is timely. See the Umbrella Response regarding the Reason for the EIS.
16/1	It is time for BPA to set some new, more effective policies. I want to see the new direction of policy for the BPA to be based on the Weak Stock Focus.	The preference was noted. The Preferred Alternative (PA 2002) in this EIS is mainly a combination of the Weak Stocks Focus (without dam breaching) and Sustainable Use Focus alternatives. See Section 3A of this EIS.
16/2	The 4 or 5% of generation capacity these dams provide could easily be made up with conservation measures or through alternative energy sources.	Energy conservation and renewable energy resources have been an ongoing part of BPA's programs. For more information on generation and conservation, please see BPA's Business Plan EIS and ROD, and the Resource Program EIS and ROD. For information regarding analysis of the energy resources impacts associated with breaching the four Lower Snake River dams, refer to the FR/EIS (Section 5.10.4) and the Corps' FR/EIS ROD.
16/3	The Stateline 300 megawatt Wind Power project ... not only is supplying environmentally benign power it is also generating jobs and good source of commerce.	See response to previous comment, 16/2.
16/4	The four lower Snake dams are in violation of the Clean Water Act.	We have noted the opinion expressed in this comment. For more information about these dams in the context of the CWA, see the Umbrella Response regarding the Clean Water Act
17/1	I want to see the new direction of policy for the BPA to be based on the Weak Stock Focus. I want to see the weakest fish populations saved first.	See Umbrella Response regarding Preference. See 16/1, above.
17/2	The 4 or 5% of generation capacity these dams provide could easily be made up with conservation measures.	See comment 16/2.
17/3	The four lower Snake dams are in violation of the Clean Water Act.	See response to comment 16/4.
18/1	History is written, consciously or not, through the filter of those doing the writing. ... This summary [chapter 2] suffers ... from an overemphasis of certain themes. It is not necessary in an EIS.	We note the commenter's views concerning BPA's summary of policy history. To streamline this discussion in the EIS, we have focused on those policy issues that have historically been problematic or that appear to be central to any policy alternative comprehensively addressing fish and wildlife in the Region. We have added an introduction acknowledging our efforts to objectively summarize the relevant history, while recognizing that some may feel we have been subjective. In any event, we have decided to leave this historical information as a reference for decisionmakers and the public. Also see the FR/EIS,

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		Appendix R, entitled Historical Perspectives.
18/2	Why not ... recognize and propose action on the management conflicts occurring between these laws, and between BPA and other federal, state, and tribal entities involved in fish and wildlife management? ... There is a serious question about the usefulness of the sections of the document that attempt to select a preferred course of action.	<p>We have tried to lay out (especially in Chapter 1) the problems that we think the Region is facing regarding the need for a Policy Direction that will be guided by a comprehensive and consistent fish and wildlife recovery plan. Some changes have been made throughout the document to clarify further our intent and the problem that BPA, as well as the Region, faces (also see Section 2.3.2.3, Current Policies—Conflicting Priorities and Appendix B). As for trying to create a forward-looking policy-level EIS, the "policy vacuum" has left BPA with the need to gain some stability to assist the Region in trying to reach a sustainable recovery effort. BPA does recognize the conflicts of laws, regulations, and values throughout the Region. Figure 1-1 was a prime illustration of the challenge of reaching agreement. The Preferred Alternative (Chapter 3, Part 3A) identified in this EIS shows how BPA intends to manage its issues around the conflicts to achieve some form of order. Figure 1-6 demonstrates BPA's commitment to creating understanding around a Policy Direction decision by connecting it with important, more specific decisions on programs and actions to implement the chosen Policy Direction. (Also see Umbrella Response regarding Tiered RODs.)</p> <p>Chapter 2, also, spends considerable time tracing how fish and wildlife policy has evolved over time. We are now at a point where the regional policy direction may need altering as mitigation and recovery effects continue to change. Table 2.3-2 highlights the key policy conflicts that create difficulty in reaching balance. Given these factors, BPA has prepared this EIS to help make decisions today and to establish a way to assess future environmental consequences promptly and effectively to help the recovery effort when timely actions are key to success.</p>
18/3	It appears that this EIS has gotten ahead of itself. ... The entire array of the Columbia Basin fish and wildlife activity is not within the province of BPA's actions, therefore does not lend itself to creation of an EIS for NEPA purposes by BPA.	<p>See Umbrella Responses regarding Tiered RODs, and Scope of the EIS, and the Reason for the EIS. BPA funds the largest fish and wildlife mitigation and recovery program in the world. We address the imminent threat of extinction not only of species, but also, in some instances, of Pacific Northwest cultural icons. Uncertainty is a given. Bureaucratic delay is not an option. To responsibly fulfill our role, we believe BPA must undertake a broadly scoped quantitative analysis to provide better guidance to the public and decisionmakers and to expedite the actual mitigation and recovery work that needs to be done.</p> <p>Too often, NEPA is criticized for merely affirming a decision already made. There can be little doubt that the</p>

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		Region is continuing to implement fish and wildlife mitigation and recovery policy whether stated or implied. The need to modify such policy through time, as has been done in the past, is highly likely. Therefore, BPA has initiated a NEPA process that is proactive and forward-looking. We believe this approach furthers the purpose and intent of NEPA. Moreover, while all actions under a policy alternative will not be within BPA's authority to implement, such actions will be connected, or their impacts cumulative, so their inclusion in this EIS helps ensure its adequacy.
18/4	No one in the region has been able to determine all of the possible environmental effects possible for fish and wildlife. But, this document does not even try to do so because it relies on previously existing lists of options that have their own limitations and biases.	See Umbrella Response regarding Tiered RODs, Scope, Reason for the EIS, and Qualitative versus Quantitative Analysis. Also, BPA does not presume to have accomplished analytically what no one else in the Region could do. To the contrary, BPA is using and depending upon existing data to establish predictable relationships between actions and effects to inform the public and decisionmakers of the probable overall consequences of general Policy Directions. We have designed alternatives across a spectrum of reasonableness. We do not consider these alternatives to be exhaustive, and we invited parties to suggest their own variations. Our process is designed to complement, not replace, the past and ongoing environmental analysis within the Region. Additionally, our intention was to create a tool that would be useful beyond immediate decisions and that could serve future decisionmakers.
18/5	It is disturbing that BPA decides to pursue NEPA coverage for actions that are not legal under current law, such as dam breaching. ... We do not believe that NEPA compels an EIS on actions that are neither legal nor realistic at this point.	See Umbrella Response regarding Scope.
18/6	Aside from creating another layer of process in the region, what is BPA trying to accomplish in this Draft EIS?	See Umbrella Responses regarding Tiered RODs, Scope of the EIS, and Reason for the EIS. Also see response to comment 18/3 and 18/4, above.
18/7	On the one hand, BPA indicates that it does not intend to unilaterally select a policy direction (Draft Summary p. v, and Draft p. 15). On the other hand, BPA states its intention to identify a preferred alternative in the final EIS (Summary p. xv and Draft p.16).	Both statements are correct and are not inconsistent with each other. As discussed on page 5 of the DEIS, and now in this EIS, BPA does not intend to unilaterally select a Policy Direction regarding fish and wildlife recovery efforts for all the regional entities, or to make a decision on policy for other agencies or entities. BPA has worked hard to objectively review and evaluate the potential implementation of actions recommended by others under the 2000 NMFS and USFWS BiOps, the Council's Columbia River Basin Fish and Wildlife Program, the Tribal Vision, the Recommendation for the Protection and Restoration of Fish in the Columbia

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		<p>River Basin by the Governors, and other land and water management agency plans. The intent for BPA has always been the same, from the DEIS to this EIS and eventually the ROD: to complete a unified planning approach that assesses actions of other regional entities for fish and wildlife mitigation and recovery and that helps establish a policy direction to guide BPA's integrated fish and wildlife program funding and implementation.</p> <p>BPA also has a statutory obligation to understand the environmental consequences of its actions and provide an opportunity for the public to participate in agency decisionmaking. This EIS is a product of that process. It is designed to meet the immediate, as well as the future, needs that the BPA Administrator and any other regional policy decisionmakers may have, to understand the possible environmental consequences of their policy decisions regarding fish and wildlife mitigation and recovery efforts, while informing the public of such impacts.</p> <p>BPA's identification of a preferred Policy Direction in this EIS does not mandate a policy direction for all other regional entities. Other regional entities are free to choose their own policy direction(s) for fish and wildlife recovery efforts or to join BPA as it implements its choice. See Chapter 3 for details of BPA's Preferred Alternative (PA 2002).</p>
18/8	It is not at all clear why BPA believes that it needs to cover the entire waterfront of salmon and steelhead recovery tools within this EIS when it is only one of many agencies involved with these issues.	See Umbrella Responses regarding Tiered RODs, Scope, Reason for the EIS, and responses to comment 18/3 and 18/4, above. Also, BPA is the major source of fish and wildlife funding in the Region. It has projects in four Pacific Northwest states on Federal, state, local, tribal, and private lands. BPA's objective is not to impose a policy on the Region, but to ensure that a long-term policy exists to guide its actions to ensure the efficient and effective use of available resources.
18/9	The real policy options coming out of other processes [e.g., 2000BiOp and "All-H" Paper] ... do not and should not fit neatly into the categories offered in this Draft EIS. ... Assuming that ... a valid policy direction could be created, the only reasonable approach would be to pursue a hybrid that recognizes the complexity of the issues at hand.	See Umbrella Response regarding the Hybrid Alternative. To aid the public and decisionmakers, BPA has incorporated actions from other sources, such as the NMFS and FWS 2000 FCRPS Biological Opinions (BiOps), directly into the Sample Implementation Actions found in Volume 3 and illustrated in Appendix I. As indicated within those Tables, the 2000 BiOp is a hybrid alternative composed of essential aspects of the Weak Stock Focus and Sustainable Use Focus alternatives.
18/10	This Draft EIS does not propose valid policy categories because it oversimplifies and mischaracterizes the	See Umbrella Response regarding the Reason for the EIS and Hybrid Alternatives. Also, the characterization "libertarian" has been removed from this EIS. The

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	categories throughout the document. Part of the problem seems to be a fundamental misunderstanding of the issue. ... [The EIS] describes a "Commerce Focus" as representing a "libertarian" approach We are appalled by this characterization. ... We would hope that BPA shares our interest in efficient recovery efforts, rather than lumping that concept under a false label of radical free market philosophy.	identified Policy Directions in this EIS are not meant to be exclusive, but rather to be logical points along the spectrum of reasonable alternatives. BPA has encouraged readers to "create their own alternative(s)," Appendix I.
18/11	We are disturbed by the characterization of the "Status Quo" alternative as a no action alternative.	Do not read the term "no action" literally. The Status Quo Policy Direction is the "no action alternative" required under CEQ's NEPA regulations. The "no action" alternative usually represents "no change" from current direction at the time of this EIS preparation—a direction under which BPA was spending, annually, hundreds of millions of dollars for fish and wildlife. As can be seen in Chapter 5, continuing the Status Quo would not mean all actions stop, but they would be less coordinated.
18/12	There are other labeling issues that concern us throughout this document. For example, the reference to "industry" is misguided. This is used to describe the entire range of economic interests in the region as if they all had a profit motive inconsistent with the health of fish and wildlife The fact that most utilities receiving power from BPA are not-for-profit entities serving everyday citizens of the region seems completely overlooked. [In the list of] "Major Participants" ... "Other Regional Interests are listed at the bottom almost as an afterthought.	We did not intend to imply that commercial interests were opposed to aiding fish and wildlife mitigation and recovery. Figure 1-2 and Section 1.3.1 have been changed to reflect the comment.
18/13	The document seems to propose making a policy decision based on an oversimplified model that melds several separate and outdated sets of scientific results [e.g., unworkable "Multi-Species Framework Process," discredited PATH process]. ... In the past, BPA has argued for better use of better science How does BPA presume to achieve accurate results in determining policy choices with a monstrous amalgamation of that science conducted at different times, by different people, for different purposes. ... The worst result ... is that throughout the Draft EIS the action items are presumed	See Umbrella Responses regarding Tiered RODs, Scope of the EIS, Qualitative versus Quantitative data and Reasons for the EIS. Also, the comments on the DEIS have demonstrated that tremendous disagreement continues to exist as to the best course of action within the Region. Indeed, there is lack of agreement on the science with respect to this topic; however, BPA has an ongoing obligation to take what it determines to be the best course of action available to mitigate and recover species. Therefore, BPA is attempting to make the most appropriate decision possible by weighing, evaluating, and considering all relevant existing information, always keeping open the possibility that new information will be developed requiring a change in course. Regarding the reference to PATH as outdated, see comments 34/3

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	to have biological results that are either not proven or are still in the midst of heated debate among the region's scientists.	through 34/4 and 44/13 for a contrary point of view.
18/14	However, we believe [BPA] would be better served if it focused more on how to bridge the gap with other regional entities rather than creating its own new fish and wildlife policy making apparatus that seems destined to conflict with its primary duty to assure the Pacific Northwest an adequate, efficient, economical and reliable power supply.	See Umbrella Responses regarding Tiered RODs, Scope of the EIS, Reasons for the EIS, and Quantitative versus Qualitative data. The purpose of this process is not to create a separate process, but to bring all ongoing processes together. BPA is working with the Corps and Bureau of Reclamation toward implementation of the NMFS and USFWS' BiOps. BPA has integrated the funding and implementation of the ESA actions with the Council's Fish and Wildlife Program. The whole intent behind this EIS is to bridge the gap with other regional entities and forge the pieces of fish and wildlife mitigation and recovery into a unified plan. In this way, BPA hopes to provide equitable treatment to fish and wildlife while continuing to assure the Pacific Northwest an adequate, efficient, economical and reliable power supply. For more on BPA's statutory obligations, refer to Section 2.3.2.1 of this EIS.
19/1	"Natural Focus" with some extra emphasis on "weak stocks" ... will benefit both salmon and all the other wildlife species which utilize the same ecosystem.	See Umbrella Response regarding Preference. Also refer to the FR/EIS for a comprehensive analysis of the impacts associated with breaching the four Lower Snake River dams.
19/2	If we are somewhat patient and allow a reasonable timeline for Nature to take advantage of our positive steps, we will ultimately (and not that far off) be able to benefit ourselves with greater harvests of fish and wildlife.	We agree that patience is critical when implementing fish and wildlife recovery and mitigation measures. Rarely can a measure have immediate impact on populations. Especially with salmon, success can often be measured only when fish return to fresh water to spawn.
20/1	If we don't breach the dams we will have no spawning grounds for the wild fish.	We disagree. See Umbrella Response regarding Preference. Also refer to the FR/EIS for a comprehensive analysis of the impacts associated with breaching the four Lower Snake River dams, including the impacts to wild anadromous fish.
21/1	I like to see some breaching of the dams in five years or less, because the salmon will be extinct in 16 years	See Umbrella Response regarding Preference. Also refer to the FR/EIS for a comprehensive analysis of the impacts associated with breaching the four Lower Snake River dams. If salmon are extinct in 16 years, that event will not be a result of the FCRPS or BPA's power marketing actions. High numbers of returning fish in recent years proves the FCRPS is not the limiting factor to salmonid survival and recovery in the Columbia Basin.
21/2	We don't have to let them wait to be extinct and having to pay all of the tribes billions of dollars over something we	The comment was noted.

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	could have prevented.	
22/1	It concerns me about the spring and summer salmon runs in the Snake River and the steelhead too. ... They won't even consider breaching the Snake River Dams for ten years. I would like to see them breached a lot sooner than that.	See Response to 21/1.
23/1	I want to see the new direction of policy for the BPA to be based on the Weak Stock Focus.	See Umbrella Response regarding Preference.
23/2	Emphasis should be placed upon breaching the four Lower Snake dams allowing a natural current to carry salmon smolts to the Pacific Ocean.	See Response 21/1.
23/3	The 4 or 5% of generation capacity these dams provide could easily be made up with conservation measures.	See response to comment 16/2.
23/4	The four lower Snake dams are in violation of the Clean Water Act.	Please see response to comment 16/4, in particular, and the Umbrella Response regarding the Clean Water Act.
24/1	What I see here is a dusting off of an old plan and presenting it with a new look.	This policy-level analysis is distinct from other analysis prepared in the Region regarding fish and wildlife mitigation and recovery. We also feel that it will be enormously helpful in aiding future decisionmaking.
24/2	What isn't here is a thorough discussion of the issues regarding resident fish, particularly in the headwaters. ... Where is the discussion on prioritizing current needs of fish and making provision for changing priorities to accommodate resident fish?	The discussions regarding resident fish mentioned by the commenter are addressed in Sections 5.2 and 5.3 and the Sample Implementation Actions in Volume 3. These discussions provide a level of detail appropriate for a policy-level EIS. More detailed analyses of these issues were conducted as part of other EISs such as the SOR EIS and the FR/EIS. These EISs have been incorporated by reference and summarized where appropriate. See also, the Umbrella Response regarding Tiered RODs.
24/3	Where is the discussion on flow augmentation effects on the Kootenai river and the residents along the river?	This EIS is a policy-level document. As such, it addresses the environmental consequences of flow augmentation, but on a general basis (see Sections 5.1, 5.2 and 5.3, for example). Some of the environmental analyses that have been incorporated into this EIS, such as the SOR EIS, address flow augmentation more comprehensively. The impacts of flow augmentation actions on the Kootenai River and residents along the river are an important issue; however, it is secondary to the initial policy-level decision on the Region as a whole. Importantly, however, the information compiled for this EIS is designed to assist future site-specific action through the process of tiering. Accordingly, all submitted and incorporated information will become part of an administrative record upon which to build. See the Umbrella Response regarding Tiered RODs for

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		a general discussion of future decisionmaking processes.
24/4	Where is the review of reservoir elevations complete with statistics on harm to aquatic life, resident fisheries, economic concerns, and health issues resultant to dust?	As discussed in the Umbrella Response regarding Tiered RODs, site-specific actions proposed subsequent to this EIS will require their own site-specific analysis. The issue of reservoir elevations, resident fish, and economic impacts is addressed in this EIS, albeit at a policy level. Certain incorporated documents (i.e., the SOR EIS and the FR/EIS) contain more detailed information. All this information, in total, will be used for future site-specific decisions consistent with the selected overall Policy Direction. For example, the FR/EIS, even though focused on non-storage dams, provides a useful analysis of the impacts associated with drawdown, including geology, soil, agricultural, water quality and economics. For analysis more directly focused on storage dams, please see the relevant analysis from the SOR FEIS. For a policy-level analysis, see Sections 5.2 and 5.3 of this EIS regarding the general impacts of reservoir drawdown.
24/5	Where is the discussion on VAR-Q for Libby and Hungry Horse?	VARQ is an alternative flood-control strategy being considered by the Corps and Bureau, not by BPA, for operating these dams. This strategy is intended to meet other needs by better assuring reservoir refill and higher spring flows, to come closer to natural snowmelt runoff conditions in the rivers. The Corps of Engineers has recently prepared an Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) for interim implementation of VARQ and intends to prepare an EIS for long-term implementation. BPA will be monitoring that analysis. The VARQ action has been included as a Sample Implementation Action in Volume 3.
24/6	Where is the discussion of tribal fishing rights and non-tribal fishing opportunities for resident fish? The Flathead and the Kootenai fishing opportunities are part of our custom, culture, and economic base.	As discussed in the last several responses, the analysis in this EIS has been prepared at a policy-level. In that regard, tribal rights and non-tribal fishing opportunities for resident fish are discussed generally in Sections 5.2 and 5.3 and the Sample Implementation Actions in Volume 3 of this EIS.
25/1	The proposed Fish and Wildlife Implementation Plan Final EIS and any associated Biological Opinions should address how Washington State Forest Practices rules will be incorporated into future plans conducted in Washington State.	No policy direction contemplates a change in the current application of Washington State Forest Practices rules. The Washington State Forest Practices rules have been incorporated by reference into the Administrative Record of this EIS, so that they will be available for consideration in future site-specific actions. Application of these rules may become a more immediate issue in the future site-specific actions tiered to this process.
25/2	It should also be made clear that future site-specific plans on all non-federal forested lands in Washington State will	The Forest and Fish Report was referenced in Chapter 2 of the DEIS on page 71 (although it was referred to as the Forest and Fish Plan). Section 2.3.2.4 of this EIS

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	be consistent with Washington State Forest Practices rules, specifically those sites where easements on private and state forested lands in Washington are obtained. We strongly encourage you to require the equivalent or higher protection for salmonids from BPA as provided by the Forests and Fish report in order to promote consistent and effective salmon recovery efforts by the federal services in the Northwest.	was updated to reflect the application of these documents to future decisionmaking.
26/1	I support the removal of the Snake River Dams to save the wild runs of Salmon and Steelhead that are going to be extinct if your timetable for dam removal is adopted. They need to be taken out immediately.	See Umbrella Response regarding Preference. Also refer to the FR/EIS for a comprehensive analysis of the impacts associated with breaching the four Lower Snake River dams.
27/1	The [Columbia-Snake river Irrigators Association] recommends that BPA managers review the New Water Management Alternative (proposed amendment now being considered by the [Council]) before making final decisions on the agency's implementation plan. There is an opportunity for BPA, working with others, to make significant changes to the existing operating regime to improve hydropower generation and fish and wildlife benefits within the region.	<p>The submitted documentation was reviewed by BPA. The evidence suggests that in-river juvenile survival is relatively inelastic, with increasing flows provided by flow augmentation within season. Better salmon recovery can be achieved by re-investing economic benefits from better management of the hydropower system in tributary improvements, including water transfers, new storage, and improved habitat conditions in the tributaries from flow and other measures there.</p> <p>This approach favors implementation of the Commercial Focus and or Sustainable Use Focus policies. Also, it argues that existing Status Quo provides limited fish benefits at high economic costs to the hydropower system and recommends the utilization of actual fish counts of adults and juvenile survival to measure effectiveness.</p> <p>BPA also examined the information submitted by commenter (Anderson, J.J. 2001. History of the Flow Survival Relationship and Flow Augmentation Policy in the Columbia River Basin. Working Paper, School of Aquatic and Fishery Sciences, University of Washington.) and noted the following:</p> <ul style="list-style-type: none"> • Paper reviews the history of flow survival research to provide perspective on the evolution of the flow policy. Early theories held that fish passage survival could increase with increases in flow. However, more recent studies have refuted the theory and instead suggest that smolt survival depends on other operative variables like temperature, turbidity, distance traveled, and predators. • Even after being refuted, the flow survival relationship was still used because it is assumed

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		<p>that if flow positively correlates with variables (e.g., temperature and turbidity) that actually do affect survival, then flow augmentation may be valuable as long as the result is higher survival. Increased flows may also improve survival outside the hydro system as a result of earlier arrival to the estuary, improved estuary conditions, and reduced delayed mortality. The flow survival hypothesis has been reformulated as a qualitative statement that flow may affect survival in the estuary and the Columbia River plume.</p> <ul style="list-style-type: none"> • The limits of flow augmentation need to be characterized quantitatively, especially when cumulative impacts are considered. It is suggested that a sensitivity analysis can be developed to ascribe a range of expected survivals for different levels of flow augmentation. However, an analysis must have an ecologically realistic foundation.
28/1	<p>Forestlands can play a pivotal role in creating the habitat necessary for a vibrant and diverse native wildlife population. ... No matter what alternative is chosen by the Agency, incorporating increased public forest protection will be the most cost effective method for protecting fish and wildlife. [Details on benefits follow.]</p>	<p>Public forest lands already figure importantly in the Status Quo Policy Direction as a keystone in the Council's program measures addressing wildlife mitigation. Increasingly, fish and wildlife managers are also looking to forest protection to mitigate and recover aquatic species. Such actions are included in the Sample Implementation Actions in Volume 3 of this EIS for the various alternatives.</p>
29/1	<p>[Inland Ports and Navigation Group] strongly urges BPA to reject any and all analyses or options, recommendations or initiatives that could limit river navigation from the mouth of the Columbia to Lewiston, Idaho.</p>	<p>BPA has an obligation to examine all reasonable alternatives in the EIS, and not to pre-judge any such alternatives. However, the final decision will be based upon consideration of all the information within the Administrative Record, including public comments. Knowing the preferences of various organizations is helpful. We will also consider the data and analysis in the FR/EIS regarding the impacts associated with breaching the four Lower Snake River dams; in particular, Section 5.9 addresses the important issue of transportation.</p>
29/2	<p>As BPA may recall from IPNG's previous administrative submission, we have endorsed a variety of fish species recovery measures, submitting a number of specific recovery measures and implementation programs that we believe will contribute to recovery of listed fish species.</p>	<p>See the Sample Implementation Actions in Volume 3 of this EIS for related and additional action ideas.</p>
29/3	<p>IPNG ports are specifically authorized by their respective states to promote navigation and economic development.</p>	<p>The background information on regional ports and IPNG's members will be added to the Administrative Record for this EIS. Additionally, see Sections 5.1, 5.2 and 5.3. of this EIS regarding navigation and economics.</p>

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29/4	<p>IPNG is disappointed by the failure of BPA to address the role of the ocean in shaping for better or worse the survival of listed species. ... IPNG urges that another H: High Seas, be added to the workscope and funding programs of BPA.... A clearer discussion led by BPA in the region about how adverse ocean conditions can erode recovery successes and erase short-term recovery gains would</p> <p>provide a more sober outlook as to assess future successes and initiatives.</p>	<p>BPA has added text to this EIS in Section 5.1.1.5 and Appendix F regarding ocean conditions and associated effects. See, also, the FR/EIS, Appendix A.</p>
29/5	<p>A chapter that addresses how local recovery efforts are important in reaching any and all of these goals [steps and planning by local fish recovery groups] would have been welcome. ... Broad local support is required for a successful regional species recovery. ... BPA should encourage such regional and local efforts by folding them into BPA recommendations.</p>	<p>BPA agrees that local recovery efforts can be very important in achieving short and long-term goals. BPA has incorporated any identified local recovery planning efforts into this EIS. Pursuant to the NEPA process, we are encouraging all individuals to participate. See Volume 3 for Sample Implementation Actions which can be done by any entity.</p>
29/6	<p>IPNG suggests that putting the lack of progress into the context of money spent since passage of the Regional Act would be a useful addition to this paper at this point [chapter 1].</p>	<p>Chapter 2 reflects much of what you suggest. Before the passage of the Regional Act in 1980, BPA used its broad general funding authorities to fund over \$40 million in mitigation projects. Since the passage of the Act and its express provisions requiring BPA to mitigate fish and wildlife, BPA has incurred costs of over \$6 billion (see Section 2.3.2.3 of this EIS for more details). BPA has followed most of the recommendations of the Council's Fish and Wildlife Program. Whether the hatcheries, harvest opportunities, habitat acquisitions and improvements, and hydrosystem changes constitute progress, has been and continues to be, a matter of debate within the Region. The money spent to date has not resulted in an acceptable recovery or delisting of some fish and wildlife species, which may reflect more on the complexity of the task than on the effectiveness of BPA's actions. Please also see the Northwest Power Planning Council's Inaugural Annual Report of the Columbia Basin Fish and Wildlife Program 1978-1999; it identifies costs in several ways based on data BPA provided.</p>
29/7	<p>IPNG recommends including in the final EIS a discussion of the lack of accountability and measurement standards that, only recently, now are being developed and implemented. ...</p>	<p>BPA is addressing this issue. Any alternative adopted by the Administrator will include the underlying accountability standards found in BPA's new Fish and Wildlife Policy Manual (Nov. 7, 2001). In addition, the NMFS and USFWS BiOps on hydrosystem operations,</p>

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	Stronger performance standards and higher initial standards in awarding various proposals over the years would have made better use of scarce regional resources.	and the plans to implement them, contain various performance standards by which mitigation and recovery efforts can be tracked.
29/8	IPNG also suggests that an examination of how narrower thinking within the various regional groups resulted in such a hydro-centric use of funds for nearly 20 years. If harvests had been curtailed more, if habitat restoration had been a higher priority and if hatchery issues had received more attention, ... the region might well have been farther along in recovery efforts.	We agree that the hydrosystem has been the main focus of fish and wildlife recovery and mitigation efforts. The new Basinwide Strategy (formerly known as the "All-H") approach is meant in part to help provide a guide for recovery planning efforts to ensure that all Hs (habitat, harvest, hatcheries, and hydro) contribute as necessary and appropriate to achieve the goals of the ESA.
29/9	We believe that the tiered approach for implementing actions is a worthy attempt to b[r]ing some structure to the implementation phase.	See Umbrella Response regarding Tiered RODs.
29/10	Given the centerpiece role of navigation in developing the current Columbia Snake hydro system, IPNG suggests that a paragraph should be included in the final EIS describing the role of navigation akin to that of Flood Control.	Reference to the IPNG comment letter and the role of navigation in the FCRPS has been included in this EIS in Sections 2.3.1.2, 2.3.1.3, and 2.3.2.2.. Sections 5.2 and 5.3 of this EIS addresses analysis of transportation, including navigation and barging. Also, please see the FR/EIS, Section 5.9 for a more detailed background on navigation on the Snake River.
29/11	"Congress also stated that environmental protection should not interfere with the Corps preexisting duties of navigation improvements and flood control (33U.S.C. Sec 2316(b))." IPNG requests that this reference be included in BPA's final EIS.	We did reference this language in the Draft; and it is in this EIS in Section 2.3.2.2.
29/12	IPNG suggests that a missing issue ... is protection of rural and smaller community economic health.	Section 5.2.3 in the Draft EIS, under the "Regional Economy" heading, has been expanded in this EIS to address "rural economies." The title has been changed to "Employment and the Regional Economy" in Section 5.2.3.2 of this EIS. In addition, information regarding rural communities can be found in the following sections: <ul style="list-style-type: none"> • Section 5.1.2, Economic and Social Environments, which discusses the importance of natural resources and rural communities; • Section 5.1.2.1, Agriculture, Ranching, and Forest Products; • Section 5.1.2.2, Recreation. • Section 5.3.3.1, Table 5.3-5B, under Other Industry, Industrial, Residential, and Commercial Development, and Employment have been

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		expanded to include discussions and analysis about the effects on rural communities.
29/13	[Re: Status Quo Policy Direction] IPNG believes that the hydro system must be operated in a way that protects navigation as an authorized purpose when the projects were developed, and that administrative actions may not curtail Federal agencies from meeting this requirement.	As hydrosystem managers, BPA, Corps, and Bureau are well aware of their obligations to navigation, as well as the direct and indirect impacts that would occur to navigation as a result of breaching the Lower Snake River dams. See responses to comment 29/10 and 29/11, above. These impacts are discussed in detail in the FR/EIS, which has been incorporated by reference into this EIS.
29/14	[Re: Natural Focus Policy Direction] At a time when BPA is straining under an uncertain energy market, IPNG believes that this focus should be discarded, so that reasonable evaluations of others can be reviewed.	See the Umbrella Responses regarding Preferences and Scope of the EIS. BPA has an obligation to examine all reasonable alternatives in this EIS, and not to pre-judge any such alternatives. However, the final decision will be based upon consideration of all the information in the entire record, including public comments.
29/15	IPNG requests that clarifying the scope of the measure [re: Reservoir Levels] precede any further discussion of this item: lower only to MOP. ... IPNG urges that this element [Navigation and Barging element (7-1) of the Status Quo] be expanded to remind readers that exports from the Columbia Basin compete in world markets primarily because of the efficient water transportation system that has made them attractive for many years in world markets.	Clarifying information has been added in Section 5.3, under Transportation, to enhance the reader's understanding of the navigation and barging issues.
29/16	The list of sample implementation actions that focus on removing and/or breaching mainstem and Lower Snake dams serves little purpose. It also exceeds any administrative authority ... [as it might affect navigation].	See the Umbrella Responses regarding Preferences and Scope of the EIS. Such Sample Implementation Actions are included as part of the Natural Focus alternative to help the reader understand the types of actions that define a Policy Direction alternative based on regional proposals for fish and wildlife mitigation and recovery. Clearly, some of these sample actions exceed existing authorities; however, that does not preclude their inclusion in the EIS as described in the Umbrella Response on Scope of this EIS.
29/17	If BPA does not reject this [Natural] Focus, IPNG urges consultation with the Maritime Administration, whose studies rebut the assertion under Transportation, Trucking and Railroads (7-1) urging "Provide support for alternative forms of transportation of agricultural and other products including improved rail service."	See Umbrella Response regarding Preferences. BPA has included additional clarifying information on transportation issues, specifically on navigation and barging, in Sections 5.1, 5.2, and 5.3 as noted in above comment responses. The information in those Sections has been included in BPA's Preferred Alternative (PA 2002) which is defined and analyzed in Chapter 3. This information provided by IPNG will be included in the

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		record for this EIS. Please see the FR/EIS, Section 5.9, for detailed information on the Lower Snake River dams.
29/18	The most effective methods given in this section [Weak Stock Focus] of the sample actions [Re: Predator control] be implemented without delay.	BPA has considered these and other potential actions in reaching its PA 2002 in Chapter 3 of this EIS. For more detailed information on predation, see also NMFS White Paper on Predation (Predation on Salmonids Relative to the Federal Columbia River Power System White Paper. Northwest Fisheries Science Center, National Marine Fisheries Service and National Oceanic and Atmospheric Administration. Seattle, Washington. March 2000).
29/19	IPNG believes that deepening the channel, when combined with mitigation and restoration activities now under discussion, will make the lower Columbia a cleaner and fish friendlier river than it is today.	Channel modifications have been included as Sample Implementation Actions (Volume 3) under the Natural Focus, Weak Stocks, and Sustainable Use Focus Policy Directions. Channel work has also been noted as actions that have taken place under Status Quo. The PA 2002 identified in this EIS is largely a combination of the Weak Stock Focus and Sustainable Use Focus, which means the Sample Implementation Actions associated with these Policy Directions could be considered while the PA 2002 is being followed. The commenter's preference has been noted.
29/20	Harvest reductions set out under Item 2 [of Weak Stock Focus actions] deserve implementation in various forms so as to help weak stocks recover.	This comment and others related to harvest have been noted and considered in reaching the PA 2002. For additional discussion of harvest issues see Section 2.3.2.3 in this EIS. Also, NMFS has directed several analyses towards a critical quantitative scrutiny of harvest and the risk it poses (if any) for ESUs. These analyses are now incorporated into Appendix A, Anadromous Fish of the FR/EIS. Appendix A incorporates a manuscript by McClure et al. (2000) regarding 11 ESUs in the Columbia River Basin; this report includes an explicit analysis and discussion of risk due to harvest for each of the 11 harvested ESUs in the Columbia River Basin. Better resolution of harvest risks will require a program in which all hatchery fish are marked, a point made in both the McClure et al. (2000) report and in the Basinwide Strategy ("All-H") document (Federal Caucus 1999b).
29/21	Where harvest is possible, ... tribal harvest has priority over sport and commercial lower river fishing.	Harvest regulations will be set by the state, Federal, and tribal entities with authority in that area.
29/22	IPNG would be happy to provide BPA with a copy of its submission to the corps considering moving to Phase II of John Day Drawdown Study. In those comments, IPNG makes a str[o]ng and	Comment noted.

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	compelling case in warning of adverse effects from such a move.	
29/23	Considerable evidence, some of [it] anecdotal we realize, suggests that summer water temperature in the lower Snake canyon prior to the four Snake Dams was <u>hot</u> , far exceeding in its natural state the CWA temperature standards.	The U.S. Army Corps of Engineers, as the owners and operators of the four Lower Snake River dams, have been actively analyzing the effect of these dams on the water temperature of the river. For more information about the results of the Corps' analyses, please see the Umbrella Response regarding the Clean Water Act in this EIS, as well as the Corps' FR/EIS.
29/24	... the suggested action of eliminating barge transportation to Lewiston, Idaho This idea does not withstand any reasonable real-world scrutiny, and never would take place. First, the costs of upgrading rail facilities are too great. ... Second, there are inadequate facilities down-river to transfer all the existing cargo to ocean carriers at downriver ports	We recognize and have recorded your opposition to this sample action; however, it is in this EIS as a component of one of the reasonable alternatives. BPA will make a final decision base upon the entire record. See also Umbrella Responses Scope of the EIS and the Reason for the EIS. Also, refer to the FR/EIS at Section 5.9.
29/25	IPNG is baffled what "shallow draft" barges Bpa is mentioning [under discussion of Transportation].	The action referred to is from the Concept Paper, 7B, submitted under the Council's Framework process. It is not totally clear to BPA what was meant by the proposed action submitted during that process, but BPA included it as a possible Sample Implementation Action as a means to have a more complete list and full disclosure of actions proposed throughout the Region for fish and wildlife mitigation and recovery. The proposed action has been moved to the Natural Focus sample actions to be more in line with the definition of that alternative.
29/26	The lower costs of barge transportation make many PNW export products competitive, and this competitive advantage would contract or erode completely if the goods were forced onto more expensive rail or trucks for transportation.	Competitiveness is determined by a variety of factors, including international market conditions, exchange rates, internal trade, and agricultural policies, and many other factors. Section 5.3 has been enhanced to include more specifics about transportation changes and costs, as well as examples. Also refer to the FR/EIS for a comprehensive analysis of the impacts associated with breaching the four Lower Snake River dams, including the transportation analysis in Section 5.9.
29/27	IPNG encourages BPA to fund an examination of a one concerning aspect Is the use of netting for commercial harvest a guarantee of weaker stocks after a decade where the <u>larger</u> fish are harvested, and only the <u>smaller</u> fish escape the nets?	An action has been added to the Sample Implementation Actions in Volume 3, under Research, Monitoring, and Evaluations, item 9 Commercial Harvest. Also, see item 2 Harvest in the same Sample Implementation Actions for other related suggestions.
29/28	[Commenter argues for] benefits of habitat restoration, the absolute requirements for Federal agencies to	BPA agrees with the need to increase efforts in habitat restoration and predator control. Review Section 5.3 and the PA 2002 at the end of Chapter 3 in this EIS for

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	control predation by terns and pikeminnows, ... written submissions urging culvert replacement. ... They emphasize the need to step up efforts in this area and to look for ways that make the most of limited funding.	additional discussion of the habitat and predation issues.
29/29	Taking steps to improve fish passage at [dams] on the Columbia and Snake has been a good use of funds, and should continue to receive appropriations from Congress	See Umbrella Response regarding Preferences.
29/30	[For navigation and barging losses] IPNG opposes ... compensation schemes Compensation schemes also almost always help a few parties and ignore the secondary and tertiary impact of a loss of this essential service ... ignoring the ripple effect in the community from loss of barge transportation.	See Umbrella Response regarding Preferences. There is no reason why compensation schemes could not be developed to assist persons affected by secondary and tertiary economic effects. The ability to develop and implement an effective compensation scheme would be a regional issue requiring discussion and debate. The issue would involve work from the policy level to the project specific level (see the Umbrella Response for the Concept of Tiered RODs). BPA currently lacks the legal authority to provide economic mitigation to those adversely affected by fish and wildlife mitigation and recovery actions.
29/31	IPNG believes that predation control is an overarching action item that must be a centerpiece for any and all implementation plans.	See Umbrella Response regarding Preferences. Also, see NMFS White Paper on Predation (Predation on Salmonids Relative to the Federal Columbia River Power System White Paper. Northwest Fisheries Science Center, National Marine Fisheries Service and National Oceanic and Atmospheric Administration. Seattle, Washington. March 2000).
29/32	IPNG supports ... continued navigation [under Commerce Focus] ... but [is] concern[ed] that this Focus suffers from a lack of commitment to species recovery, which IPNG supports.	See Umbrella Response regarding Preferences. While Commerce Focus commits less public resources to species recovery measures than other alternatives and more reliance on individuals and the private sector, we did not mean to imply a lack of commitment.
29/33	IPNG supports ... Juvenile Fish Passage and Transportation.	See Umbrella Response regarding Preferences.
29/34	IPNG believes that the Draft EIS language describing the Corps role regarding multiple purpose projects might be strengthened.	The objective of the table was to summarize general responsibilities, not to express the importance. Other parts of this EIS have been enhanced to better articulate the Corps, as well as others, multiple uses of the river such as Chapter 2 and 5.
29/35	IPNG urges a more complete discussion of [increased sedimentation and consequences] from breaching the Lower Snake Dams ... [including] impact on Lake Wallula ... [and] the Wildlife Refuge at the junction of the snake and Columbia Rivers.	As in the Draft EIS, this EIS in Chapter 5 discusses sedimentation as an effect, under existing conditions, and across the five basic Policy Direction alternatives. In Section 5.3, Table 5.3-3B: Water Effects Across the Policy Directions Analysis, sedimentation has been analyzed at an appropriate level of detail for the policy-level analysis in this EIS, and information on removal of

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		Lower Snake River dams from the Corps' FR/EIS has been incorporated to provide examples of the effects being discussed. Site-specific impacts would be addressed in the event of a project-specific proposal triggering such impacts and tiered back to the analysis in this EIS (see the Umbrella Response for Tiered RODs). Impact analysis to a particular wildlife refuge is unnecessarily specific for a functional policy-level analysis. Also refer to the FR/EIS for a comprehensive analysis of the impacts associated with breaching the four Lower Snake River dams, especially Section 5.4 on Water Quality.
29/36	A second sedimentation impact meriting greater scrutiny ... [if] breaching is not off the table is the potential release of possibly hazardous material that now are encased in the silt behind the Snake Dams.	Please see Responses 12/7 and 29/35 above. Also refer to the FR/EIS for a comprehensive analysis of the impacts associated with breaching the four Lower Snake River dams, especially Section 5.4 on Water Quality.
29/37	IPNG agrees with the ... warning of the impact of potential introduction of zebra mussels into the Columbia Basin streams. ... This brief discussion does not adequately warn how such introduction could put at risk all basin-wide recovery efforts for species recovery. ... The impact on the food chain of the zebra mussel and its impact on intake pipes, piers and docks and any other structures is severe.	Additional discussion on exotic species has been added to this EIS in Section 5.1 and 5.2.
29/38	IPNG opposes efforts to reduce gas supersaturation by dam removal or lowering reservoir levels.	See Umbrella Response on Preferences.
29/39	IPNG urges that further discussion of temperature extremes ... discuss high water temperatures in the Lower Snake Canyon prior to construction of the four Lower Snake Dams.	See the Umbrella Response on the Clean Water Act; also see the FR/EIS for a discussion of historical temperature data in Section 4.4 and Appendix C.
29/40	Reduced harvest by commercial and lower river sport fishers provides a way to strengthen listed species. ... After species have recovered and are removed from the ESA lists, then commercial and lower river sport fishing could return.	Please see the response to comment #20 of this letter. Also, harvest limitations are a valid consideration and consistent with certain policy directions. Please refer to the general description of the alternatives in Chapter 3.
29/41	The BPA discussion [of major environmental consequences for humans from common fish and wildlife actions] is not extensive enough to caution the region about the variety of adverse environmental impacts the region would	See Umbrella Responses regarding the Qualitative versus Quantitative nature of this EIS and Tiered RODs. When BPA selects a Policy Direction and proposes to implement specific actions, the impacts will be compared against those in this EIS to ensure that the site-specific impacts are of the kind and magnitude

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	face as a result of certain actions—most of them supposedly pro-species recovery. BPA's brief discussion of mitigation measures is cursory and ignores severe adverse impacts that would result.	anticipated in the EIS.
29/42	The discussion of power generation and transmission is welcome but its s[h]ort discussion merits useful details.	The discussion and analysis of power generation and transmission has been expanded throughout this EIS, specifically review Sections 5.1, 5.2, and 5.3.
29/43	Although IPNG agrees with the points made in the bullet points and in the brief discussion following it, IPNG believes that this cursory report [on dam breaching/drawdown] overlooks many adverse impacts. The D[r]aft EIS ... overlooks secondary and tertiary impacts from dam breaching. We are disappointed that transportation and the complex series of interrelated adverse impacts are not accorded greater attention	The transportation Section 5.2.3.2, and Tables 5.3-1B and Table 5.3-5B. Also refer to Section 5.9 of the FR/EIS for a comprehensive analysis of the impacts associated with breaching the four Lower Snake River dams.
29/44	In the discussion of agriculture and forestry and the adverse impact, BPA also gives short shrift to the widespread impact from the loss of water transportation.	See response to comment 29/43 above.
29/45	IPNG is disappointed that this same concern for the farming communities and inland communities did not strike BPA drafters of the EIS as meriting equal consideration as coastal communities and commercial fishing boat deckhands ... nor for towboat and barge operators who face similar financial issues.	Additional information has been added to this EIS related to this subject. See comment response to 29/12 above.
29/46	IPNG notes that the recreation discussion that examines the impact from breaching contains no discussion of the impact on the people whose marinas are made useless by drawdowns or breaching	Discussion regarding marinas has been added in Section 5.1.2.2 and Table 5.3-5B: Other Recreation in this EIS. Also refer to the FR/EIS for a comprehensive analysis of the impacts associated with breaching the four Lower Snake River dams, including Section 4.13 on recreational facilities.
29/47	BPA's discussion of impacts on the pulp and paper industry ... [should] focus specific attention on the Boise Cascade plant in Wallula, Washington, and the range of adverse environmental impacts it would face if the Snake Dams were breached. [Commenter can provide details about siltation.]	The existing discussion is adequate for the policy-level analysis in the EIS. See Umbrella Response regarding Tiered RODs. Also refer to the FR/EIS for a comprehensive analysis of the impacts associated with breaching the four Lower Snake River dams, specifically Chapter 5 and Section 5.17.7.
29/48	IPNG questions the value of "non-consumptive use"	It is important for a comprehensive policy review of fish and wildlife mitigation and recovery to address concerns

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		for consumptive and non-consumptive uses. The non-consumptive use referring to bird watching is only provided as an example of existence value some people may have toward fish and wildlife recovery issues, and it is not intended to be all inclusive of non-consumptive uses. The comment has been noted as part of the Administrative Record for this EIS.
29/49	The sharply increased costs associated with protecting cultural resources exposed by a drawdown should be among those elements added to [other adverse effects] by BPA.	Additional information has been incorporated into the this EIS to provide more examples and illustration of effects associated with cultural resources. See specifically, Sections 5.1.2, 5.2.3.3, and 5.3.3.4 of this EIS. Also refer to the FR/EIS for a comprehensive analysis of the impacts associated with breaching the four Lower Snake River dams, including Section 5.7 on cultural resources.
29/50	IPNG challenges BPA to show that any transportation is "efficient" when compared to barge transportation.	The intention of this EIS was not to create the idea that forms of transportation other than barging are more efficient. We recognize, to reduce net costs of loss of barge transportation, the new transportation system would need to be as cost-effective as possible. This does not imply that the new system would be more efficient than barging, or that it would be less environmentally damaging. See Sections 5.1, 5.2, and 5.3 regarding transportation.
29/51	Figure 5-21 appears to incorrectly depict the impact from the Natural Focus on navigation. ... Navigation is depicted as having "Lesser Magnitude/Intensity", whereas trucking and railroad are shown as having a "Greater Magnitude/ Intensity."	The figures referred to have been eliminated in this EIS to avoid confusion over what was meant by "the intensity" in which actions are used across the Policy Direction alternatives.
29/52	IPNG requests clarification of the role of navigation in Natural Focus and in Weak Stocks [with regard to breaching].	See Section 5.3.3.1, regarding transportation in this EIS.
29/53	To make these issues more confusing, it appears in Table 5.3B "more" means "worse" in one description and "less" means "worse" in all the others. Later, Chart 5.4-1, uses "more" to equal "better" in some illustrations and "worse" in others. This is confusing and should be redone.	The description of what constitutes "worse" and "better" has been clarified better in Section 5.3 of this EIS.
29/54	IPNG wishes to engage BPA in a consideration of the rights of navigation to assist in its preparation of a final EIS for its fish and Wildlife Implementation Plan.	We appreciate the information provided and have made multiple modifications to this EIS as a result. IPNG has been very helpful.
29/55	IPNG wishes to call to the attention of BPA the unique way that navigation	We have noted the views of the commenter concerning the limitations of the CWA due to navigational rights.

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	intersects with the Clean Water Act. We hope that the discussion that follows will help guide GBPA officials in drafting the Clean Water Act aspect of the Final EIS in a way that comports with existing limits to CWA.	<p>Section 1.1, Introduction, of the EIS acknowledges that the Policy Direction selected by BPA will be shaped by existing laws and mandates. These laws include the applicable requirements of the CWA, as interpreted by the courts and appropriate regulatory agencies and modified by Congress over time.</p> <p>The views expressed by this comment primarily address the interplay of the CWA and navigational rights related to operation of the Lower Snake River dams, which are owned and operated by the Corps, not by BPA. As discussed in the Clean Water Act Umbrella Response, the Corps' Final FR/EIS assesses four alternatives (including a dam-breaching alternative) for improving juvenile salmon passage through the hydropower system on the Lower Snake River. In its September 2002 ROD for the FR/EIS, the Corps decided to adopt and implement Alternative 3—Major System Improvements (Adaptive Migration), which does not involve breaching or removing the four Lower Snake River dams. The FR/EIS notes that the Rivers and Harbors Appropriation Act of 1899, 33 U.S.C. 1344 as amended, preserves the public right of navigation and prevents interference with interstate and foreign commerce. The FR/EIS also states that the Corps would require Congressional approval of any alternative involving dam removal or breach, and that this approval would need to include Congressional consideration of effects to navigation in relation to the Rivers and Harbors Appropriation Act of 1899.</p>
29/56	IPNG attaches as Appendix A to these comments a discussion of how the Lewis and Clark Expedition was viewed by President Jefferson as one with clear commercial goals' ... the Expedition's goal was to find a water-centric transportation route linking the two co[a]sts.	We edited Chapter 2 (in Section 2.3.1.1), accordingly.
30/1	We need the dams. ... Pulling down dams will not save the fish ... will not fix an acute energy crisis. ... will credit you with creating a food crisis.	Comment noted.
31/1	[Re:] "some species of fish and wildlife continue to decline." I take exception to this statement as the dam counts for the years 2000 and 2001 show increased salmon and steelhead runs if not record runs.	Even though some species show larger populations in 2000 and 2001, this does not necessarily indicate a long-run trend for all stocks, and other resident species have been declining.
31/2	Dr. James J. Anderson of the University of Washington School of Fisheries would take great exception to [statement that	We agree that the ocean likely plays a dominant role in how many migrating juvenile salmon and steelhead return as adults and that some stocks have experienced a

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	"there is no clear scientific answer"]. [Commenter cites Anderson's September 1997 article titled "Decadal Climate Cycles and Declining Columbia River Salmon" ... on Pacific Decadal Oscillation (PDO).]	<p>dramatic increase in the past few years. The issue the Region faces is that the fish that are listed as endangered and threatened under the ESA are wild salmon and steelhead populations. Hatchery fish comprise about 80% of the returning adults.</p> <p>The effects of the FCRPS on the listed fish include changes in volume and timing of flow, and a small amount of mainstem habitat loss for fall chinook salmon. Our efforts in freshwater will be successful only if the favorable ocean conditions continue, but the factors that cause El Niños to return are not well understood and the timing is not predictable. The magnitude of the swift positive change in ocean conditions between 1998 and 1999 was not anticipated; we can only speculate when conditions will return to those of the early 1990's.</p> <p>An emerging understanding of an influence that may further exacerbate our work is global warming. The 1990's saw record high temperatures with one El Niño after another instead of a decade of separation. If that scenario returns, we may be greatly frustrated in the attempt to maintain our present gains. Part of the answer is to continue the work in freshwater, but possibly more important is to gain an understanding of why some stocks survive better in the ocean than others. By gaining this insight, we may be able to improve ocean survival in good and bad years through improvements in areas such as freshwater habitat and timing of flow.</p>
31/3	[Commenter citing Anderson's opinion on Plan for Analyzing and Testing Hypotheses (PATH) and NMFS Cumulative Risk Initiatives (CRI).] These analyses are based on data that is not representative of current conditions. Most significantly the CRI and PATH Analyses do not reflect the possibility that the ocean can shift quickly into a regime favorable to Columbia River salmon and steelhead.	See previous comment above. Regarding the reference to PATH being outdated, see comments 34/3 and 44/13 for a contrary point of view.
31/4	Since the food chain in the ocean is close to optimum, the food chain in the natal streams need to be upgraded with either salmon carcasses or by fertilizer briquets that are being used by B.C. biologists on Vancouver Island to increase the steelhead and salmon populations.	This comment has been included as a Sample Implementation Action in the Anadromous Fish (1-1) portion of the Habitat section in the following Policy Directions: Weak Stock Focus and Sustainable Use Focus.
31/5	The only alternative of the DEIS that I can honestly support is Status Quo.	Comment noted. See Umbrella Response regarding Preferences.

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31/6	I particularly support moving all hatchery management to the tribes.	See Umbrella Response regarding Tiered RODs and the Governance discussion in Chapter 6. Moreover, we suspect the states that own many of the hatcheries would disagree with this suggestion.
32/1	On its face, the DEIS is inconsistent. On one hand, BPA seeks to identify the specific path the region is most likely to take as a unified approach to fish and wildlife mitigation, and states that it must implement a mitigation and recovery strategy even if the region fails to agree on a single policy direction. ... On the other hand, the DEIS states that BPA is not unilaterally selecting a policy direction. (Draft/ES-v)	See response to comment 18/7. BPA is working hard, through its implementation of the NMFS and USFWS BiOps, and the Council's Columbia River Basin Fish and Wildlife Program, to complete a unified fish and wildlife mitigation and recovery policy. However, the timing and ultimate success of that effort is uncertain. In any event, BPA is obligated to fund and implement fish and wildlife mitigation and recovery actions before, during and after these policy-level deliberations. BPA also has a statutory obligation to understand the environmental consequences of its actions and provide an opportunity for the public to participate in agency decisionmaking. This EIS is designed to meet the immediate and future needs of agency decisionmakers and the public for information regarding the impacts of mitigation and recovery actions proposed for implementation by BPA. However, if the Region fails to agree upon a Policy Direction, BPA must still implement and fund a fish and wildlife mitigation and recovery strategy.
32/2	[Public Power Council] urges BPA to emphasize this description of the problem [lack of success to date as due to contrasting values and priorities in the region, no clear scientific answers, conflicting directives, absence of comprehensive plan, and inefficiencies in implementation and funding] in the EIS. ... BPA should declare that many of these problems are not the responsibility of BPA or its customers nor do they involve operation of the FCRPS.	See Umbrella Response regarding Tiered RODs, Scope, and Reason for the EIS. We believe the history recounted in Chapter 2 makes this point.
32/3	Until federal salmon management policies are clarified, there is a danger that BPA will fund measures that prove to be counter-productive ... BPA should use this EIS and all available means to stress to fisheries managers the importance of resolving their fisheries management challenges.	Comment noted. We share the desire to maximize the effectiveness of available funds. See Chapter 1, Purpose and Need for the EIS.
32/4	How does BPA interpret its responsibilities under multiple federal obligations?	Some of the varying responsibilities in regional fish and wildlife mitigation and recovery are described in Chapter 1, Sections 1.1 – 1.3. However, the statutory obligations most commonly debated within the Region originate from the ESA, the Regional Act, and the CWA. BPA's different responsibilities under these Acts

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		are discussed in Section 2.3.2.1 of this EIS. We have prepared an Umbrella Response to the Clean Water Act. See also, Appendix B, Section B. Information regarding how BPA may see its role affected under different Policy Directions is provided in the Purposes table in Chapter 3, and will be used in decisionmaking.
32/5	BPA can and should ... emphasize the importance of a unified plan in its EIS and use its influence to put [an] end to funding of uncoordinated, inconsistent and counter-productive measures.	Unified planning will be at the heart of any action alternative adopted under this EIS. Regardless of the alternative, BPA will continue to work to integrate its mitigation and recovery obligations under both the Regional Act and the ESA.
33/1	Please review my concern on the definition of surface bypass.	This comment has been combined with comment 33/2 and 33/3 to form a Sample Implementation Action, which has been incorporated into the research, monitoring and evaluation table found in Volume 3.
33/2	Please incorporate in the vast list of alternatives and analysis a section on naturalized bypass systems that strive to mimic the in-stream like conditions. These systems would bypass both adults and juveniles fish of all species.	See above.
33/3	Please include reference to and analysis of ... an alternative mechanism to encourage fish to enter ... natural surface bypass systems.	See above.
34/1	The statement that "There is no clear scientific answer to the problem" is misleading.	We believe that there is no clear and agreed-upon scientific solution, as demonstrated by the following: (1) if the science were clear on fish and wildlife recovery and mitigation issues, there would not continue to be as much divergence or rancor in the ongoing debate regarding this issue in regional processes; (2) based upon the comments on this EIS alone, we see the major disagreements that exist (i.e., there is not agreement on the actions to take, what their overall effect might be, or what trade-offs are acceptable); and (3) some people would still argue that fish and wildlife continue to decline even in light of many actions that have already been taken. Note that we have more accurately reworded the statement in Chapter 1 and other places it appears in the EIS.
34/2	The DEIS ... lacks goals and a decision framework that permits an evaluation of actions in meeting the goals.	Goals and decision frameworks are typically the language of programs, such as the Columbia Basin Fish and Wildlife Program. Nevertheless, BPA believes that the "goal" in this EIS is similar to the Need for Action. The Need and the "framework" to evaluate the possible policy choices are the Purposes identified within Chapter 1, of this EIS. See also the Umbrella Response regarding Tiered RODs.
34/3	It seems disingenuous for BPA to omit all	Some of the other commenters suggested that the PATH

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	mention of PATH and then declare that "There is no clear scientific answer to the problem."	process model was outdated. (See comments 18/13 and 31/3 for a contrary point of view). As can be seen from the many comment letters received on this EIS, there is still much disagreement about what is needed scientifically to achieve successful fish, and wildlife, recovery in the Region. Also, see response to comment 34/4, below.
34/4	[Columbia River Inter-Tribal Fish Commission] commissioned [use of a] decision framework to evaluate an "All H" approach to salmon recovery. This document (Marmorek et al 2000 ...) is consistent with prior PATH documents and indicates the likelihood of recovery is largely governed by actions taken to substantially reduce hydro related mortality. BPA should acknowledge this and previous PATH analyses in the final EIS.	<p>The copy of the Marmorek et al, December 2000, Analysis has been reviewed by two members of the PATH workgroup (Paulson and Hinrichsen, November 2001). NMFS, through the Cumulative Risk Initiative (CRI), has identified risks of extinction and the timeline during which actions must be taken to prevent extinction. NMFS has published the 2000 FCRPS BiOp, which sets out a series of Pacific Northwest actions that are intended to prevent extinction and lead to recovery. See, also, the FR/EIS at Appendix " A, Anadromous Fish clearly reflects a shift on the part of NMFS towards relying more on CRI analyses rather than PATH analyses. This shift, however, has nothing to do with a rejection of collaborative science. Instead, NMFS was reacting to criticism of PATH expressed by an ISAB review and by a failure of PATH to include the four most recent years of run-reconstruction data or the most recent PIT-tag data regarding differential delayed transportation mortality." We have reviewed the Peters et al. (2000) in order to assess its relevance to the June 2001 Draft EIS (BPA 2001). In summary, we think that their analysis – and much of the previous PATH modeling – does not comport very well with recent life-stage survival estimates. The specific data-related issues that we believe are problematic include the following:</p> <ul style="list-style-type: none"> • Downstream stocks as controls. Recent estimates (CSS study, FPC 2001) suggest that SARs for downriver hatcheries are much lower than for upriver fish. • Recent estimates of in-river survival. They use FLUSH for downstream (smolt) survival rates, even though FLUSH projects lower survival than recent PIT tag estimates. • "D" values. The "D" values used are considerably lower than those derived from PIT tags, causing some odd results. • Off-site mitigation assumed to be ineffective. The analysis uses very low values for survival increases from off-site mitigation compared to recent PIT-tag estimates. • SARs do not comport with recent estimates. The analysis assumes that SARs of transported fish will continue to be low (0.5%) indefinitely, compared to recent estimates of 2-4% (FPC 2001).

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		<ul style="list-style-type: none"> • Problematic upstream survival rates. The assumed survival of adults moving upstream through the hydrosystem is both lower than estimates derived from PIT tags or radio tags, and is assumed (based on no data at all) to increase to 1.0 for drawn-down reaches. <p>There are also a number of issues that are less data-driven, but are still important:</p> <ul style="list-style-type: none"> • Inconsistency in treatment of constraints on management actions. The analysis treats habitat improvement and hatchery output reductions as institutionally infeasible, but largely ignores institutional constraints on dam breaching. • Out-of-date expert opinion. The weight-of-evidence appraisals pre-dated the past 5 years of PIT tag data and the last 2 years of high jack and adult returns. • Probability of extinction is essentially zero for all stocks, scenarios, and management actions, much lower than 2000 BIOP estimates due to an optimistic production function.
34/5	Although the DEIS claims that the status quo is unacceptable, it continues to support hydro operations that rely on transportation.	BPA meant that the mix of actions making up the Status Quo, without clear policy guidance, is unacceptable. It is a misuse of the statement to apply it to each individual action such as juvenile salmonid transportation.
34/6	The Tribes support habitat protection and restoration	See Umbrella Response regarding Preferences.
34/7	In the past 12 months, [CRITFC] has provided extensive comments to the Bonneville Power Administration on salmon recovery issues	BPA has incorporated multiple processes into this EIS by reference, including the comments received during those processes. These comments have been incorporated into the different Policy Directions when possible. For example, actions from the Spirit of the Salmon have been included in the Sample Implementation Actions in Volume 3.
34/8	We also submitted substantial recommendations to the Northwest Power Planning Council for amending its Fish and Wildlife Program to address the operations and configuration of the regional hydropower system. We request that you consider the recommendations contained in these documents and that they be made a part of the record for this EIS.	BPA has considered the Council's 2000 Fish and Wildlife Program for this EIS. Sample Implementation Actions have considered and included actions from these documents (see Volume 3).
34/9	Wy-Kan-Ush-Mi-Wa-Kish-Wit is based on sound science. BPA should acknowledge the available science.	BPA has used Wy-Kan-Ush-Mi-Wa-Kish-Wit as a resource for actions included in Volume 3 (Sample Implementation Actions). See response to comment #7 of this letter.
35/1	All of the proposed Alternatives listed by	Comment noted. BPA believes, nevertheless, that some

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	Bonneville Power Administration ... have the potential to negatively impact the agriculture industry in the state of Washington. Obviously, the Alternatives which propose removal of dams would have a larger negative impact on agriculture than the other Alternatives.	alternatives have potential to affect the agricultural industry positively. For example, the Commerce Focus could reduce regulation and costs associated with species protection, thus potentially benefiting the agricultural industry. BPA is very aware of the negative impacts that breaching the four Lower Snake River dams would have on agriculture. See Section 5.3.3.1 of this EIS regarding agriculture, and for greater details from dam breaching refer to Chapter 5 of the FR/EIS.
35/2	All of the Alternatives call for more regulatory control of agriculture and land use which will have a great impact on the citizens of Washington. ... Farmers and ranchers simply cannot afford the environmental regulations suggested by BPA in the DEIS.	Comment noted. However, some alternatives would reduce some regulations. Furthermore, the mix of regulatory, incentive, and voluntary actions that could be implemented for an adopted Policy Direction has not been determined. See discussion at the beginning of the Sample Implementation Tables in Volume 3.
35/3	It is a basic fairness issue. If the public at large wants to protect fish species then the public should shoulder the burden. The burden should not fall upon farmers and ranchers who are facing disaster because of commodity prices, energy costs, and increasing federal regulations.	Comment noted.
35/4	BPA's assertion that no species of salmon is near extinction lacks common sense when the least sophisticated citizen realizes that some salmon species are near extinction.	The commenter is referencing a discussion contained in Section 2.3.2.3 of the Draft EIS that is intended to document existing conflicts in priorities created by existing regional policies. More specifically, the commenter is referencing a subsection entitled "Problems in Defining and Applying Listings," which provides a discussion of the issues surrounding NMFS' evolutionarily significant unit (ESU) policy for identifying endangered salmon species, as well as views by salmon experts on this policy. The "assertion" attributed to BPA by the commenter is not a BPA assertion at all; rather, as indicated by the footnote for this sentence, it is a statement drawn from an article concerning salmon policy. This statement is considered to represent the consensus view concerning salmon extinction—namely that although salmon is not considered near extinction on a species level, certain populations are considered close to extinction.
35/5	National Marine Fisheries Service ... listed three Evolutionary Significant Units ("ESUs") of Northwest chinook salmon as threatened species, and one chinook salmon ESU as an endangered species. The commentators believe that these listings are an unlawful alternative to the ESA's statutory species definition. ... These chinook salmon are	The existence of disagreement concerning the validity of NMFS' listings of certain salmon populations as threatened and endangered under its ESU and hatchery salmon policies is acknowledged. The complaint filed by Common Sense Salmon Recovery (of which the commenter is a member) against NMFS is an example of this disagreement. After the FWIP Draft EIS was published, this issue gained greater visibility due to a challenge to NMFS' ESU and hatchery salmon policies

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	neither endangered nor threatened when identical and abundant salmon from artificial channels or hatcheries are included in the population.	that is currently before the Ninth Circuit Court of Appeals. The subsections entitled "Judicial Impact on Natural Resource Policy" and "Problems in Defining and Applying Listings" in Section 2.3.2.3 of this EIS have been revised to reflect the current status of this litigation, as well as to provide information on NMFS' resulting review of its hatchery policy and listed Pacific salmon and steelhead stocks. The second subsection also has been revised to identify the complaint filed by the organization to which the commenter belongs.
35/6	There is no real danger of extinction of a species, yet the DEIS advocates greater use of the ESA and the Clean Water Act ("CWA") to reform land use laws for salmon protection, as well as manage public land for salmon instead of for multiple use.	The DEIS did not advocate a particular position; instead, as required by NEPA, it provided an evaluation of the potential environmental effects of a range of reasonable alternatives for implementing fish and wildlife mitigation and recovery efforts in the Region (see Umbrella Response about Claims that BPA Advocated Certain Preferences). The commenter appears to be referring to Sample Implementation Actions identified in some of the tables in Section 3A of the DEIS (now found in Volume 3 of this EIS) that would involve increased regulation under the ESA and CWA, primarily to prevent further degradation of fish habitat. As noted in the introduction to the DEIS' Section 3A tables, the sample actions in the tables were only examples drawn from a variety of sources, and those actions did not represent the position, an implied endorsement, or commitment by BPA. For Sample Implementation Actions involving increased regulation under the ESA and CWA, the regulatory agencies charged with enforcing those regulations such as NMFS, USFWS, and EPA would be responsible for implementing those sample actions, and they (not BPA) would decide whether and how the actions would be implemented.
35/7	It is illogical to pay taxes to implement protection for a fish species that is not endangered.	See Chapter 2 for a discussion of the Judge Hogan Decision and the issue of whether the listing of certain species is appropriate under the ESA. BPA's responsibilities under the Regional Act to mitigate and enhance are unrelated to ESA. Generally, fish and wildlife are also protected for tribal, recreational, commercial, and other purposes, and it is logical to protect species to keep them from becoming endangered.
35/8	The DEIS calls for more reduced power generation. This will have a severe impact on farmers and ranchers throughout the states impacted by the DEIS.	The DEIS did not take a particular position with respect issues such as power generation. We do agree, however, that reduced power generation would impact farmers and ranchers in the Region. See response to comment 35/6.
35/9	The DEIS is not based on adequate scientific data [but on "fuzzy" concepts] Instead of science, nature-	The DEIS information is not uniquely BPA's. It is a compilation of data from throughout the Region, obtained from existing documents; plus information

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	based biocentric philosophy underpins the dramatic changes in public policy contained throughout the DEIS.	provided by all participants in the EIS process, including the Farm Bureau. As can be seen by reviewing all of the comments and responses in this Appendix, there are many positions on what is the "right" science.
35/10	The DEIS advocates moving forward to force many people in the rural areas to change their lives in ways that may have severe economic and social impacts.	See comment response to in comment #6 of this letter. The DEIS did not advocate particular positions, including, as stated here, forcing people to change their lives in ways that may have severe economic and social impacts. The DEIS did not advocate one Policy Direction over another. In fact, BPA intentionally avoided selecting a preferred alternative in the DEIS in order not to influence public comment one way or the other. The DEIS tried to present the information associated with each Policy Direction in an objective, factual manner. In this EIS, Section 5.3 has added clarifying information and examples to better illustrate the potential effects to rural areas. BPA has selected a Preferred Alternative (PA 2002). With the benefit of full consideration of the entire administrative record, including public comment, BPA is better able to name one alternative as preferred. However, a final decision on a particular policy direction will not occur until at least 30 days after publication of this EIS. This decision will be published and made available in a Record of Decision.
35/11	Americans agreed on current land management decisions via debate, discussion and tradeoffs that characterize policymaking in a democracy. Americans have not had a debate about abandoning multiple use, sustained yield and balancing competing uses of public lands in favor of trying to recreate pre-European landscapes which is advocated by the DEIS.	Again, the DEIS did not advocate a position regarding Policy Directions. See response to comment #6 of this letter. The commenter appears to take the inclusion of a Weak Stock Policy Direction as advocacy for that alternative. BPA is examining a reasonable range of alternatives to meet the purposes and needs stated in the EIS. As can be seen from our identification of a Preferred Alternative (PA 2002, Chapter 3), we are not advocating a return to pre-European settlement policies or landscapes.
35/12	BPA does not choose any of the Alternatives as a preferred alternative. ... Instead, BPA will allow the BPA administrator to choose the Alternative which BPA will most likely follow.	The Final EIS includes a Preferred Alternative (PA 2002, Chapter 3). See Umbrella Response regarding Hybrid Alternatives.
35/13	BPA makes gross errors in its conclusions regarding rural Washington's history and its affected environment. ... The DEIS touts the service and recreation industries as the future of rural Washington with a major market being California's 30 million people. ... The DEIS ignores the importance of Washington's agricultural	This comment misrepresents the referenced material. The referenced section does not discuss the state of Washington, and it does not tout the service and recreational industries as the future of rural Washington. Rather, the text discusses current economic trends of the Region. Still, the text has been changed. See Sections 5.1, 5.2, and 5.3 for added information regarding rural and agricultural areas.

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	heritage.	
35/14	The DEIS does not list a preferred alternative. It is impossible for the commentators to adequately determine the effects of all alternatives on the region. Thus, once a preferred alternative is chosen, an additional comment period must be provided.	BPA intentionally avoided identifying a preferred alternative in the DEIS; however, we have identified one in this EIS. Also, see Umbrella Response regarding Scope and Hybrid Alternatives.
35/15	The DEIS admits that it used "qualitative" or "relationship analysis ..." to compare Alternatives. ... This is inappropriate as determinations and actions must be based on scientific studies. Any action taken without necessary scientific data is arbitrary and capricious.	See Umbrella Responses regarding Qualitative versus Quantitative Effects and Tiered RODs. The EIS incorporates an extraordinary number of scientific studies that sometimes conflict, at least partially. BPA has an ongoing obligation to fund actions regarding fish and wildlife mitigation and recovery and must make decisions based upon the best information available.
35/16	The DEIS is leaving the actions that they are going to take a mystery and thus, it is impossible to comment upon same.	As stated in previous comment responses to this letter, the lack of identifying a preferred alternative in the DEIS was to encourage more comment on all of the Policy Direction alternatives and to gather more information from the Region for a perspective on what the preferred alternative should be. See Umbrella Responses regarding Tiered RODs and Qualitative versus Quantitative Effects.
35/17	Removal of the dams is too drastic a measure considering that only 6% of the Basin is diverted for irrigation for agriculture and over 300,000 acres are irrigated by those 3 reservoirs.	Information regarding irrigated land associated with dam breaching has been added in Section 5.3 of this EIS.
35/18	It is inappropriate for the DEIS to provide Alternatives that cannot be implemented within the current legal restraints.	See Umbrella Response regarding Scope.
35/19	Using the Status Quo or no action Alternative as a benchmark to predict future environmental impacts is in violation of NEPA and is arbitrary and capricious under the Administrative Procedure Act	We disagree. The Status Quo Policy Direction (i.e., the "no action" alternative) is not used as a benchmark for predicting environmental impacts. Rather, it is a baseline for comparing the impacts of the other Policy Directions. Potential environmental impacts of the alternatives were forecast based on the existing environment and the typical policies that likely would be followed under each alternative.
35/20	The DEIS allows the administrator to select a hybrid of any of the alternatives to implement his or her policy direction. ... This type of approach is inappropriate in that it is impossible for the commentator to comment on the possible environmental impacts of a hybrid alternative yet to be determined	See Umbrella Response regarding a Hybrid Alternative.

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35/21	The Interior Columbia Ecosystem Management Project ... is not final and has been protested. ... All reference to and reliance on ICBEMP is improper	We have used the ICBEMP document for background information on ecosystems in the Region. As a product of the ICBEMP process, an <i>Implementation Strategy</i> is being done in lieu of a Basinwide decision. The participants of the ICBEMP process stated that instead of a Basinwide strategy, the science base and knowledge gained from the ICBEMP effort would be utilized during USFS and BLM unit planning efforts. With regards to the protests, we have continued to monitor the status. According to the ICBEMP participants, the protests have been analyzed and summarized within a "Content Analysis" process. Several points made in the protests were considered in the development of the <i>Implementation Strategy</i> . In addition, BPA has relied upon the data in the PACFISH AND INFISH processes too, as noted in Section 5.2.2.1.
35/22	The DEIS claims that the last summer chinook commercial fishing season was in 1967. ... However [media reported that WDFW authorized recreational fishing in summer 2001 and thousands of chinook were caught in 2001]. Therefore, the DEIS statement is inaccurate.	The DEIS did contain an error, in that it referenced 1965 instead of 1967 for the last summer chinook commercial fishing season. This has been corrected in Chapter 2 of this EIS. The last summer chinook targeted commercial fishery occurred in 1967. However, significant catch of summer chinook continued to occur, incidentally, in sockeye targeted commercial fisheries through 1973. The summer chinook have recently been harvested in small-scale recreational fishing and incidentally in commercial tribal platform fisheries. Under the ESA, the harvest impact limit for summer chinook is less than 5% of the run, or between 1,000 and 1,500 fish.
35/23	The conclusions in the DEIS are not based on adequate scientifically sound data.	See Umbrella Responses regarding Tiered RODs, Scope of the EIS, Qualitative versus Quantitative data, and Reasons for the EIS. Also, the comments on the DEIS have demonstrated that tremendous disagreement continues to exist as to the best course of action within the Region. Indeed, the science with respect to this topic remains controversial, a major part of the problem. However, BPA has an ongoing obligation to take what it determines to be the best course of action available to mitigate and recover species, especially when inaction may lead to extinction. Therefore, BPA is attempting to make the best decision possible with the information that exists, always keeping open the possibility that new information will be developed requiring BPA to reconsider its decisions and analysis.
35/24	The DEIS states that BPA will probably "proceed along the lines discussed in the Basin-wide Strategy Paper" to take steps to comply with ESA. ... It is inappropriate and a violation of the APA for an agency to make decisions as to	The DEIS predicts that the recovery planning for listed anadromous fish will likely proceed along the lines discussed in the Caucus' Basinwide Strategy paper. This is a general observation, not a statement of a decision or final action by BPA.

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	how to act before receiving public comment.	
35/25	BPA admits that "consequences are expressed not in terms of exact numbers but, rat[h]er, in qualitative terms" which would not comply with the "detailed statements" mandated by NEPA.	See Umbrella Response regarding Qualitative versus Quantitative Effects and Tiered RODs.
35/26	The current direction of BPA as evidenced in the DEIS, is contrary to the Congressional scheme of the Bonneville Power Act.	BPA's mandate has expanded considerably since 1937, yet we remain in full compliance with all of our organic acts.
35/27	The [Pacific Northwest Electric Power and Conservation Planning Act] mandates <u>balance</u> between electric power needs and conservation efforts in the environment. Congress did not intend for fish and wildlife mitigation efforts to supercede human development. The Alternatives proposed by the DEIS fail to provide the necessary balance as mandated by PNEPPCA.	We believe that the alternatives represent logical points across a spectrum of reasonable policy directions for fish and wildlife mitigation and recovery. There are surely other points; and we have encouraged others to contribute alternative suggestions through the "Build Your Own Alternative" in Appendix I. We also do not suggest that a final decision must be limited to one of the suggested alternatives. In fact, the Preferred Alternative (PA 2002) in this EIS is a hybrid of the major components of two of the Policy Direction alternatives from the DEIS. See Umbrella Response regarding Hybrid Alternatives. Appendix I has been retained in this Final EIS to help facilitate future policy direction shifts.
35/28	It is the Council's objective under the PNEPPCA to make the type of policy directives that BPA is suggesting in the DEIS. Under PNEPPCA, BPA has no authority to make policy decisions, but instead, is mandated to carry them out.	We disagree; BPA's authority is stated quite clearly in its implementing legislation and the Council cannot usurp BPA's statutory authority and require the Agency to take actions without independent consideration.
35/29	Under the PNEPPCA, the BPA administrator has to consult with "the Secretary of the Interior, the Administrator of the National Marine Fisheries Service, and the State fish and wildlife agencies of the region, appropriate Indian tribes, and affected project operators ... to the greatest extent practicable, coordinate their actions." ... There is nothing in the DEIS to suggest that BPA has done this consultation.	BPA has coordinated its fish and wildlife activities to the greatest extent practicable with the appropriate Federal, state, and tribal fish and wildlife agencies and will continue to do so. Examples of this coordination are cited throughout Chapters 1 and 2. Chapter 7 further addresses the review and consultation aspects of the many governing laws and regulations.
35/30	The Natural Focus, Weak Stock Focus, Sustainable Use Focus, and Strong Stock Focus Alternatives all rely upon an ecosystem approach to management of natural resources. There is no statutory basis for an ecosystem approach.	BPA did not rely on an ecosystem approach in the preparation of this document. Rather, we have prepared a document that describes environmental effects of alternative Policy Directions. BPA has a responsibility to consider all effects of its decisions within its service area and to provide full disclosure of impacts. 40 C.F.R. 1508.8

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35/31	BPA must consult with the appropriate agencies under the ESA to determine the extent of their current proposed actions on any endangered species.	BPA has and will continue to consult with the appropriate agencies pursuant to the ESA. See, Chapter 2 for a discussion regarding the Implementation Plan strategy.
35/32	BPA acknowledges that it may need to do additional consultation These consultations need to take place with regard to the actions that the DEIS proposes in its final DEIS.	BPA has and will continue to consult with the necessary agencies, as appropriate. As noted above, please refer to the discussion of the Implementation Plan Strategy in Chapter 2 of this EIS. Also, see Umbrella Response regarding Tiered RODs and Chapter 7.
35/33	The DEIS inappropriately includes "Reserve Options for Future Action" which provide "future decisionmakers with the ability to extend or intensify actions already in place." ... The Reserve Options have not been provided to the public for comment which is necessary under the APA.	See Umbrella Response regarding Tiered RODs. Also, we have welcomed and encouraged comment on any of the Reserve Options in the DEIS. Also, refer to modified text in this EIS regarding Reserve Options, Sections 4.2.2.1 and 5.4.
35/34	The DEIS fails to provide supportable scientific data as well as causal links between the human activities and their effect on the Columbia Basin Region.	The EIS incorporates an enormous amount of scientific studies and data, as detailed in the References section of this EIS. Sometimes studies conflict, at least in part, but BPA has an annual responsibility to make decisions on proposals affecting fish and wildlife recovery and mitigation. This EIS and subsequently tiered analyses will provide BPA with the best available information to make decisions at a given point in time. See Umbrella Responses regarding Tiered RODs and Qualitative versus Quantitative Effects.
35/35	The DEIS does not discuss concrete social and economic impacts of its proposed Alternatives, but instead makes broad policy statements regarding proposed " <i>possible</i> adverse effects" and " <i>possible</i> mitigation measures." ... BPA must consider opportunities for mitigation of the economic harms [of its proposed Alternatives] The DEIS does not consider specific mitigation and economic harms which would allow the public to be fully informed.	The concrete social and economic impacts that the commenter suggest are exactly the reason BPA has developed the Tiered ROD concept. It will provide the decisionmaker and others the opportunity to be properly engaged at each level of decisionmaking, first starting with this policy level and then proceeding toward the more specific actions implementing that policy. See Umbrella Response regarding Tiered RODs and Quantitative versus Qualitative Effects.
35/36	Instead of providing scientific support and causal links between the declining fish and wildlife populations and economic effects, the DEIS makes broad sweeping conclusions.	See response to comment #34 and #35 above.
35/37	DEIS tables at 219-223 ... fail to produce a clear picture of what types of consequences each Alternative would	See Umbrella Response regarding Tiered RODs and Qualitative versus Quantitative Effects. The Tables were removed from this EIS to reduce confusion. Refer

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	create. Instead of providing scientific support and concrete data, the DEIS rates each environmental consequence using categories of "less magnitude" and "greater magnitude." In addition, the DEIS fails to provide any explanation as to how the magnitudes were determined.	to Sections 5.1, 5.2, and 5.3 in this EIS for more explanation of the actions and impacts anticipated under each alternative.
35/38	The same phenomenon can be found in the DEIS' explanation of environmental consequences in the remainder of Chapter 5. ... The tables and proposed explanations are devoid of supportive scientific data or actual concrete analysis. Instead, the DEIS provides tables which rate possible environmental consequences in the categories of "better" or "worse."	See the previous response. Sections 5.1, 5.2, and 5.3 have added numerous references and examples to help clarify information that was in the DEIS. Also, refer to the Umbrella Responses regarding Tiered RODs and Qualitative versus Quantitative Effects.
35/39	Throughout the DEIS, BPA advocates the management of public lands for salmon instead of for multiple use. This would be a violation of the National Forest Management Act, ... the Federal Land Management Policy Management Act, ... and the Multiple Use, Sustained Yield Act	This policy-level document has been designed to assist the public and decisionmakers into the future. Accordingly, to increase the document's longevity, we did not restrict the alternatives by existing law and regulation, because laws and regulations can change over time. Also, see discussion at the beginning of Sample Implementation Actions in Volume 3. Finally, see response to comment 35/9.
35/40	The DEIS threatens increased regulation by the federal government under the CWA and ESA if the region fails to develop a coordinating plan with state and local government.	See response to comment 35/6 and refer to the introduction to Volume 3, Sample Implementation Actions in this EIS. Just as the DEIS did not advocate a particular position, it did not threaten the particular action of concern to the commenter.
35/41	The DEIS calls for TMDL development and implementation for anadromous fish tributaries within five years. ... TMDL development is controlled by the CWA and should not be inappropriately determined beyond the CWA's authority.	See response to comment 35/6. TMDL development and implementation is not "called for" by the DEIS; rather, this action is identified in the Section 3A table (now in Volume 3 of this EIS). If the state and/or tribes decide to develop TMDLs, BPA plans to support these efforts, consistent with the recommendations outlined by the Federal Caucus (of which BPA was a part) in the Final Basinwide Strategy Paper. It is expected that any TMDLs developed by the states and/or tribes would be developed consistent with requirements of the CWA.
35/42	Water quality standards are controlled by the CWA and should not be inappropriately determined beyond the CWA's authority.	See response to comment 35/6 regarding the role of the Sample Implementation Actions in this EIS. Because water quality standards are currently determined by the states and not by BPA, the concern of the commenter is more properly addressed to the states. The presumption in this EIS is that the states will determine water quality standards consistent with the authority given them under the CWA. Also, refer to the Umbrella Response regarding the CWA.
35/43	The DEIS fails to take into consideration	The EIS does not propose taking of private property.

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	that its proposed actions implicate the taking of private property. Some of the DEIS proposed Alternatives will cause the taking of private property through restriction on property rights, flooding, drought, or construction. Thus, a takings implication assessment pursuant to Executive Order 12630 should be performed. [Additional examples provided by commenter.]	Actions that affect private property could be accomplished voluntarily or by using incentives. BPA typically avoids the use of its condemnation authority in the implementation of fish and wildlife mitigation and recovery actions. Where the use of condemnation authority is unavoidable, BPA proceeds according to law to ensure the affected private rights are fully respected.
35/44	Commenter submitted an analysis by Dr. Earnest Brannon, assessing the listing of certain Columbia River salmonids.	<p>BPA reviewed this analysis and will include it in the Administrative Record for the EIS along with submitted materials by other commenters.</p> <p>With respect to Dr. Brannon's analysis, he asserts that the listing of most if not all salmon stocks as threatened or endangered in the Columbia River Basin is unjustified on legal and scientific grounds. He proposes to de-list them, rely on hatcheries mostly and to give jurisdiction to individual states over their conservation.</p> <p>Dr. Brannon contends that NMFS use of ESU that defines a species or subspecies or distinct population is erroneous. For chinook salmon, the science suggests there are many more ESUs (genetically distinct populations) than NMFS has identified and lumped into a single ESU. In others, he posits that the separate ESUs are probably a single population (steelhead, sockeye) maintained by genetically identical resident forms. In yet others, he maintains that the hatchery-produced fish are indistinguishable from wild fish and should be part of the population. Finally, he observes that the genetic legacy of the salmon has been directly modified by over-harvest, hatchery practice and isolation of habitat by dams. Much of this genetic legacy is now totally extinguished or, in some cases, complete replaced by other gene pools of different stocks and species. He further argues that these new gene pools may be maladapted to those environments.</p> <p>Dr. Brannon accuses NMFS of assuming the role more appropriate to State fish and wildlife agencies: that is, tending to the conservation of species diversity and habitat.</p> <p>Dr. Brannon contends that NMFS' policy (that hatchery fish are not part of native gene pools) is not consistent with the ESA or genetic evidence.</p> <p>Dr. Brannon identifies five stages of the collapse of the fishery that was knowingly accepted by the Federal government as the cost of development: (1) 19th century harvest, (2) habitat destruction and isolation in the early 20th century, (3) introduction of exotic competitors,</p>

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		<p>(4) hydropower on the mainstem, and (5) fishery mismanagement.</p> <p>Dr. Brannon shows that the Federal government encouraged and authorized the development of the Columbia River Basin, and mitigated salmon with hatcheries to address that development. However, NMFS (the Federal government) now does not accept hatcheries as mitigation. Thus, Dr. Brannon contends that there are conflicts within the policy of the Federal government.</p> <p>There are many other astute scientific observations about the diversity, adaptation, and genetics of salmon within Dr. Brannon's analysis. Further, many of his arguments are persuasive and may foretell the future of ESA listings in the Region. Nevertheless, with respect to the immediate decisionmaking, BPA must also consider the recommendations of NMFS' as contained within their Biological Opinions.</p>
36/1	The following is submitted for inclusion as a Sample Implementation Action under Sec. 5.2 Install and operate an array of photovoltaic panels on the south-facing slopes near Lower Granite Dam, connected in to existing transmission facilities located at the dam, to relieve regional dependency on hydroelectric power.	This proposed Sample Implementation Action has been included in the New Generation (5-2) portion of the Power section in the Natural Focus Policy Direction.
37/1	I recommend the following implementation action be included ... under Sec. 5.2.... BPA will grant a 30% subsidy to any homeowner or small business that properly installs a rooftop photovoltaic solar collector which is connected to the public grid. BPA will prevail upon regional utilities to purchase power thus generated.	This proposed Sample Implementation Action has been included in the New Generation (5-2) portion of the Power section in the Natural Focus Policy Direction.
38/1	While we support a comprehensive and coordinated approach to salmon and steelhead protection and recovery, that approach must be based on prudent, justifiable facts. An appropriate [EIS] should present the public and decision-makers with a fair and unbiased look at the range of alternatives [Save Our Wild Salmon] believes that the DEIS falls far short of the mark.	This EIS incorporates the relevant factual, scientific and academic information from a broad spectrum of academic and scientific resources to provide an objective analysis of the alternatives in the EIS. As can be seen by review of this Appendix, there is a wide range of perspectives on the alternatives and scientific data. Also, see the Umbrella Response regarding Tiered RODs.
38/2	The DEIS fails the "hard look" test. ... The DEIS does not present any of the detailed information necessary to inform	See the Umbrella Response regarding Tiered RODs, Scope, Qualitative versus Quantitative Effects, and the Hybrid Alternative. Also, please refer to Volume 3 in

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	the public, or BPA, about the environmental consequences of each of the policy direction alternatives. There are numerous options, details, studies - many of which have been compiled and discussed as part of the other analyses - and facts that should be part of BPA's analysis. The programmatic scope of the DEIS does not excuse the agency from presenting and analyzing information that is readily accessible.	this EIS for sample implementation actions pursuant to each alternative policy direction. BPA has incorporated many studies and analyses by reference. These analyses has been extremely useful in selecting the Preferred Alternative (PA 2002) in this EIS, and will be for future modifications to the PA 2002, as well as in analyzing site-specific actions when these actions are actually proposed. The level of detail provided in this programmatic EIS is appropriate for a policy-level document and policy-level decisionmaking.
38/3	The DEIS puts forth biased or inaccurate information to steer reader away from a particular policy alternative.	BPA did not take a position in the DEIS or in this Final EIS; instead, the documents provide same range of reasonable alternatives across a broad spectrum. Additionally, BPA has put forth a good faith effort to provide the analysis objectively and completely. BPA has identified a Preferred Alternative (PA 2002) in this EIS.
38/4	It is impossible to formulate well-reasoned, defensible policy choices when the information underlying the analysis of those choices is inaccurate or missing. Without accurate and comprehensive information, BPA is poised to make a decision based on irrelevant or inappropriate factors.	See the Umbrella Response regarding Tiered RODs, Scope, Qualitative versus Quantitative Effects, and the Hybrid Alternative. BPA has attempted to compile, reference, and incorporate an enormous amount of material (over 10,000 pages) into a manageable and user-friendly document. In fact, this Final EIS has added additional examples and extensive footnotes to further clarify the DEIS information. Should the public or decisionmaker wish to examine the data behind a particular conclusion, the document identifies the best resources (see References section and the over 600 footnotes in this EIS). We have found that at a policy-level, reams of quantitative data and computer runs, only give a false sense of precision to policy-level issues which are large, multi-variant issues. In other words, BPA has found for EIS purposes that it is better to be generally correct than precisely wrong. As stated at the beginning of this response, the Tiered ROD concept will provide the public and decisionmaker with the appropriate level of clarifying detail for programs and projects when they are ripe for decisionmaking.
38/5	BPA's failure to take a "hard look" at the consequences of the various alternatives is compounded by the agency's intention to "tier" future documents to this EIS. ... In short, an agency cannot tier a document that did not in itself comply with NEPA. ... If the Final EIS suffers from the same lack of information and analysis that infects this draft, supplement analyses will be required to ensure that the inadequacies of this DEIS do not	See Umbrella Response regarding Tiered RODs. BPA fully intends that this EIS will comply with NEPA requirements. BPA is embarking upon this policy-level process in order to maximize public involvement at both the policy-level and site-specific level. This is a means to take full advantage of NEPA, not to avoid it. BPA has prepared similar policy-level analyses and has an excellent record of involving the public in all levels of decisionmaking, including those levels where a supplement analysis is used. See 16 CFR § 1021.314.

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	carry over to site-specific actions. We are concerned that BPA will have neither the time, nor the inclination to do such analyses at the site-specific level.	
38/6	Contrary to BPA's assertion, however, there is nothing in this DEIS that considers the environmental impacts of many of the inadequate half-measures described in the Implementation Plan. ... BPA's analysis misapprehends and discounts all too many of the most effective measures for salmon and steelhead protection. SOS is concerned that this may result in the action agencies ignoring vital information that should have been considered <i>at some stage</i> of the decision process.	The relationship between the Implementation Plan and this EIS is more fully explained in Chapter 2. The Implementation Plan is based upon the most recent NMFS' and USFS' BiOps. In order to demonstrate the impacts of these measures on the public and decisionmakers, the measures were included in the Sample Implementation Actions as an alternative track. BPA believes that this policy-level approach and utilization of tiering will help ensure that vital information is not ignored in the decision process. In fact, it actually brings in such relevant information at the appropriate time when a proposed action is ripe for decisionmaking and links it back to the policy-level decisions. See Umbrella Response regarding Tiered RODs.
38/7	The DEIS fails to inform adequately the public and the decision-makers of the requirements under numerous laws including, but not limited to, the Northwest Power Act	While BPA has not attempted to explain the requirements of all statutes as they apply to the Agency, a summary and explanation of several of the more commonly discussed statutes with respect to fish and wildlife mitigation and recovery issues is provided in 2.3.2.1 of this EIS. Appendix B, also gives a further listing and brief description of relevant laws and regulations.
38/8	The DEIS continually speaks in terms of public and policy "trade-offs" between fish and wildlife and other uses of the Columbia River and its tributaries. BPA must recognize that Congress had already prescribed the result of these "trade offs" in the Northwest Planning Act.	Generally, Congress has provided direction to BPA in the Regional Act; however, as with so many statutes, BPA must apply the statutory language to specific actions under consideration. Congress has entrusted BPA with the discretion to make those decisions consistent with the statute. Also see response to comment 38/9.
38/9	The DEIS asserts that "BPA provides equitable treatment by implementing all or part of the Council's Program and taking action to meet the terms of relevant BiOps. The Ninth Circuit Court has upheld BPA's interpretation, holding that it is reasonable to balance power needs and mitigation needs on a system-wide basis."... To the contrary, the Ninth Circuit has twice rejected this same contention, finding that the requirement that BPA give equitable treatment to anadromous fish under 16 U.S.C. Sec. 839b is clearly "substantive" and is, as the statute indicates, "independent" of its duty to consider the program adopted by	In November 2001, these commenters filed a petition in the U.S. Ninth Circuit Court of Appeals, challenging BPA's operations during the 2001 drought and power emergency, asserting that those operations and other actions BPA took failed to provide equitable treatment for fish and wildlife with the other purposes for which BPA manages the FCRPS. BPA has reviewed documents that will make up its Administrative Record in that case, the opinions cited by commenters, and past briefs on the subject. Using these resources, BPA elaborated on its views of equitable treatment in this EIS at Section 2.3.2.1 under the heading Regional Act. Generally, this entire EIS is about trade-offs: those made historically and those we must make prospectively. BPA is preparing this policy-level EIS on fish and wildlife could be viewed as one way of

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	the Council	literally placing fish and wildlife on par with BPA's other statutory purposes because it offers the same level of planning, analysis, and public involvement found in the Business Plan EIS for BPA's power and transmission marketing mandates.
38/10	BPA has premised the DEIS on a fundamental misunderstanding of the NPA's Equitable Treatment mandate. The DEIS specifically states that "high prices for power may impair BPA's ability to finance fish and wildlife implementation," and that "extreme power demands and shortages may lead to modifications to the fish and wildlife programs." Such direction violates the NPA. In these instances, the NPA requires BPA to manage risks equally across all aspects of the system. The Act does not allow BPA to put power ahead of fish. The DEIS is therefore fundamentally flawed due to its reliance on this misguided interpretation of the NPA's requirements.	We respectfully disagree. See response to comment 38/9.
38/11	The Save Our Wild Salmon Coalition has endorsed and advocated for the removal of four lower Snake River dams as the most biologically beneficial and cost-effective means of recovering federally protected salmon runs in the Snake River. Of the proposed Policy Direction Alternatives, the "Weak Stock Focus" comes closest to embracing that goal.	BPA has noted SOS' preference for removing the four Lower Snake River dams. See Umbrella Response regarding Preference. Also refer to the Clean Water Act Umbrella Response for information on the Lower Snake River dams controversy, and the Corps' FR/EIS and ROD for a comprehensive analysis of the impacts associated with breaching the four Lower Snake River dams and the decision by the Corps.
38/12	However, SOS feels that the Weak Stock focus fails to pay adequate attention to salmon runs not listed for protection under the Endangered Species Act (ESA). In addition to meeting its directive to avoid jeopardy to federally protected salmon runs, federal action agencies must pay equal attention to these relatively healthy salmon populations to prevent the future listing of these species and to comply with tribal and Canadian treaty obligations.	Weak Stock Focus, like all policy alternatives, is a general direction, not a limitation. Between the Weak and Strong Stock Focuses, there are multiple layers of emphasis for specific listed and unlisted species. The five identified Policy Directions are logical stopping points along a continuous spectrum and should not be viewed as exclusive. See Umbrella Response regarding Hybrid Alternatives.
38/13	SOS believes that partial removal of the four lower Snake River dams must be a central component of any legally and scientifically legitimate fish recovery plan.	The commenter's opinion is noted. However, as reflected in the sample actions and policies that make up the Preferred Alternative (PA 2002) for this EIS, BPA believes that a legally and scientifically legitimate fish recovery plan can be formulated without including removal of these dams as a central component. The

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		Corps' September 2002 FR/EIS ROD, in which the Corps adopted an alternative that does not involve breaching or removing the four Lower Snake River dams.
38/14	The DEIS unfairly and inappropriately assumes negative impacts on air quality for a decision to remove the four lower Snake River dams. Under a dam breaching scenario, there would be a need to replace the power produced from the dams. However, there is ample evidence to show that the power from those four dams can be replaced without adversely impacting air quality. ... NW Energy Coalition and [NRDC suggest energy lost] can be replaced with a mixture of low-cost conservation and ... renewables The final EIS must consider this "clean air" alternative to power replacement and adjust the Policy Direction effects accordingly.	While replacement power "could" consist of conservation and renewables, in reality, power resource developers have demonstrated a preference for building combustion turbines, as anticipated in this EIS and demonstrated by the permit requests that were filed within the Northwest States during the perceived power shortage. Also refer to the FR/EIS for a comprehensive analysis of the impacts associated with breaching the four Lower Snake River dams, especially Section 5.10.4 regarding Power Replacement with Non-Polluting Resources.
38/15	The DEIS assumes that the power would be replaced by a combination of new combustion turbines and prolonged use of existing coal facilities. ... Yet an analysis by the Army Corps of Engineers estimates that there would be no net increase in emissions for five of eight pollutants analyzed, and overall emissions in the Western United States would increase by less than one percent.	See above response. Changes have been made in Chapter 5, Section 5.3, to reflect a reconsideration of the data. In addition to the Army Corps of Engineers' data referenced, BPA has assessed through this EIS the Business Plan EIS and the Resource Programs EIS likely resource development scenarios and their impacts.
38/16	The DEIS also references increased emissions resulting from increased truck and rail traffic replacing barges. This assertion is again in contrast to the Army Corps of Engineers analysis, which actually predicts a reduction in transportation-related emissions for three of five (CO, SO ₂ , and NO _x), while overall emissions would decrease by seven tons/year.	Refer to the FR/EIS for a comprehensive analysis of the impacts associated with breaching the four Lower Snake River dams, especially Section 5.9 regarding transportation impacts. Generally, two sources provided data for this analysis. First, the Eastern Washington Intermodal Transportation Study (EWITS) (Lee and Casavant, 1998) conducted a 6-year study funded jointly by the Federal government and the Washington State Department of Transportation; it included an examination of transportation-related energy consumption and air emissions associated with breaching of the four Lower Snake River dams. The EWITS data suggest that NO _x , PM ₁₀ , and VOC emissions would increase; CO emissions would remain about the same; and SO ₂ emissions would decrease. Second, the Transportation and Navigation Study data indicate that CO, NO _x , PM ₁₀ , and VOC emissions would increase and SO ₂ emissions would stay about the same. The averages of the two total emissions estimates

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		are presented in Section 5.3.2.4 in the FR/EIS.
38/17	[Re: water Quality Effects] First, SOS is uncertain why the agency has analyzed the amount of reservoir habitat and included reservoir habitat as a positive asset to the river environment. Second, SOS is concerned that the agency has underestimated the positive impacts of the Weak Stock approach on water quality. ... The DEIS improperly analyzes the effects of partial dam removal on reservoir habitat. The DEIS characterizes dam removal as an action that is "worse" because of its impact on "reservoir habitat." While it is true that dam removal will "worsen reservoir habitat" by eliminating the reservoirs, it is unclear to SOS why this impact would be characterized as "worse" in the DEIS. Minimizing the reservoir habitat and increasing the natural river conditions should be considered a beneficial impact, not a negative impact.	BPA has reviewed the information and has added additional examples and references in Section 5.3 of this EIS to help better understand the analysis. BPA appreciates that, from a certain perspective, for some species, loss of reservoir habitat will be beneficial. However, BPA has labeled loss of reservoir habitat as negative because it eliminates resident fish and deep-water wildlife habitat, it exposes more cultural resource sites, and it adversely affects reservoir based-recreational, agricultural, and economic activities. In addition, there may be adverse impacts on human health and the environment from toxic sediment and fugitive dust impacts.
38/18	SOS appreciates the fact that the agency acknowledges the improvements in water quality that would be associated with the Weak Stock alternative. However, we are concerned that the agency either misunderstands the significance of these benefits or simply ignores them in certain situations. The "half truths" presented in the DEIS fall far short of the "hard look" that NEPA requires and seemingly ignore the mandates of the Clean Water Act.	The concerns and views of the commenter are noted. This EIS reflects an extensive effort by BPA to identify and adequately discuss all of the reasonably foreseeable environmental impacts and benefits of each of the alternative Policy Directions. BPA has provided the appropriate level of analysis of these effects and benefits, given the programmatic, policy-level nature of this EIS. For information about BPA's responsibilities under the CWA, see Chapter 2 and the Umbrella Response regarding the Clean Water Act.
38/19	Removing the four Lower Snake River dams would have substantial biological benefit for all Columbia and Snake migrating salmon and steelhead by opening up otherwise lost spawning habitat and decreasing the adverse water temperatures and other pollution (e.g., dissolved gas) that accumulate in the rivers. Although some of these benefits are acknowledged in the DEIS, others are ignored. But, most surprisingly, the DEIS seems to suggest that water quality requirements of the Clean Water Act need only be met where possible. ... We expect that the agency will correct these flaws in the final EIS and give the Weak	Regarding the suggested benefits of removing the Lower Snake River dams: all of these benefits are acknowledged in this EIS. For example, the general loss of spawning habitat caused by construction of dams in the Columbia and Lower Snake River basins is discussed in Section 2.3.1.3 under the heading "Effects from Dam Construction and Operation on Fish and Wildlife." The recovery of lost habitat that would result from dam removal is discussed in Section 5.3. Similarly, the effect of the dams on water quality measures such as water temperature and dissolved gas is discussed in Sections 5.2 and 5.3. For a comprehensive analysis of the potential adverse and beneficial impacts associated with breaching the four Lower Snake River dams, also see the Corps' FR/EIS. Regarding the requirements of the CWA, BPA

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	Stocks alternative the proper "hard look" in terms of water quality improvements.	recognizes that it is obligated to comply with the applicable requirements of the CWA. For information about BPA's responsibilities under the CWA, see Chapter 2 and the Umbrella Response regarding the Clean Water Act.
38/20	In general, the DEIS accounts for the substantial benefits to be derived from a free flowing lower Snake River for fish and wildlife compared to the status quo. ... Yet the DEIS may have underestimated the overall benefit in certain key areas. ... The habitat improvements associated with this [partial removal of the four dams] would be dramatically better than the status quo, not only for native anadromous and resident fish, but also for native wildlife in general.	We are glad to see that the commenter has confirmed our accounting for the substantial effects under the Weak Stocks Focus Policy Direction as compared to the Status Quo. At this point, since the document is a policy-level EIS, the general sense of what takes place regarding environmental consequences is adequate. Also refer to the FR/EIS for a comprehensive analysis of the impacts associated with breaching the four Lower Snake River dams, especially Sections 5.5 and 5.6 on Aquatic and Terrestrial Resources.
38/21	The DEIS also misleads the public and decision-makers by unfairly reporting the environmental consequences of dam removal on non-native species. ... Yet all credible science indicates that the existence of non-native, or exotic species that reside in slack-water reservoirs created by dams are a danger to the survival of listed juvenile salmon. ... Furthermore, BPA's legal responsibilities are toward native, not non-native species. The DEIS's balance of non-native species is misplaced and improperly assesses the impact of dam removal. While it is true that free flowing river conditions would decrease habitat for non-native species and consequently lessen populations, the DEIS must properly acknowledge this as a benefit, not an adverse impact, of dam removal in its comparison of alternatives.	BPA has a responsibility under NEPA to consider all relevant environmental consequences of actions and reasonable alternatives thereto. Since public policy decisions regarding the construction of dams were made years ago and introduced species have since become part of the current environment, BPA would be remiss not to account for their impact from dam removal. Moreover, the decision to place a higher relative value on native species over non-native species reflects a policy choice that is consistent with the Weak Stock Focus Alternative, but other Policy Direction positions reflecting different values by others in the Region are also considered. The commenters position on what the values should be do not represent a regional consensus as can be seen through review of this Appendix. Finally, see the Umbrella Response regarding Scope.
38/22	The DEIS unfairly characterizes the economic effects of a decision to remove the four lower Snake River dams while severely underestimating the potential economic benefits of such a policy direction in a variety of economic sectors.	We respectfully disagree: please see the response to comment 38/24, below. Also refer to the FR/EIS for a comprehensive analysis of the impacts associated with breaching the four Lower Snake River dams, especially Sections 5.10 regarding electric power and 5.16 for an economic overview.
38/23	The DEIS claims "large adverse [power] effects compared to the status quo" for the Weak Stock Policy Direction. Yet nowhere is it mentioned that law mandates reductions in power production for the sake of migrating salmon, nor is it	BPA does not share the commenter's legal interpretations. See Section 1.2.2, BPA's Purposes, and Chapter 2 of this EIS generally, and specifically Sections 2.3.2.1, and 2.3.2.3. See also the FCRPS Action Agencies' initial Progress Report for implementation of the BiOps and the response to

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	mentioned that even under the status quo, BPA and the other federal action agencies are violating these legal requirements ["equitable treatment" under NPA and ESA].	comment 38/9.
38/24	<p>Combined, the four lower snake river dams produce roughly 1,246 average megawatts annually, amounting to only 5 percent of the total Pacific Northwest energy system. The Drawdown Regional Economic Workgroup (DREW) estimated in its regional analysis that the average increase in monthly electric rates for replacement power with bypass would be in the range of \$1.07-\$5.30 for residential ratepayers, assuming that the region replaces the lost power with more expensive forms of power generation like combined cycle turbines and gas fired power plants. As mentioned earlier, a separate study [NRDC report] shows that residential rates would increase by only \$1 to \$3 per month if energy produced by the dams were replaced with a mixture of conservation and non-hydropower renewable energy. ... The relatively modest increase in electric rates pales in comparison to rates elsewhere in the U.S. and becomes even less significant when considering the potential economic benefits of sustainable wild salmon populations.</p>	<p>The cited residential rate increases are misleading. The variation (\$1.07-\$5.30) is largely due to the assumed base of customers either averaged over all residents or just BPA customers [K1]. Also, these estimates do not include cost increases for commercial and industrial customers (Framework Human Effects Analysis Table 4-8). Please refer to the FR/EIS for a comprehensive analysis of the impacts associated with breaching the four Lower Snake River dams, especially Section 5.10 regarding electric power.</p> <p>The technical report supporting the information in Section 5.10 came from a study by the DREW Hydropower Impact Team; Final Technical Report on Hydropower Costs and Benefits (Corps 1999a). This workgroup had representation from numerous organizations: Northwest Power Planning Council, Corps of Engineers, Bonneville Power Administration, NMFS, Columbia River Inter-Tribal Fish Commission, River Network, NW Energy Coalition, Direct Service Industries, Columbia River Alliance, Bureau of Reclamation, and Idaho National Energy Lab. In Section 7.4, Possible Rate Impacts, of this technical report they noted:</p> <p>"With the numerous scenarios presented here, it can be seen that the possible average wholesale rate increases to power customers could be as low as 0.67 mills/kWh and as high as 5.86 mills/kWh. How these increased wholesale rates would translate to increases in monthly power bills to the different power consumers is very hard to determine. Each power utility purchases different amounts of BPA's wholesale electricity to serve its residential, commercial, agricultural, and industrial customers. Some PNW utilities purchase almost no power from BPA, and hence the rate increases would be very minimal to their customers. However, other utilities rely exclusively on purchases from BPA, and these potential rate increases could be passed directly to their customers. ... As can be seen in Table 44 the average PNW household monthly electricity bill could increase between \$1.20 and \$6.50 depending on which set of cost distribution and economic forecast assumptions is applied. The monthly bill impact for the average PNW commercial establishment could increase between \$6.70 and \$36.30. ... The major impact would be to the industrial sector if the assumed cost</p>

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		<p>distributions occur. For example, the average industrial customer (excluding the aluminum companies and other Direct Service Industries) could see monthly electricity bills increase between \$302 and \$1,645. The aluminum companies in the PNW are extremely large consumers of electricity, and this is reflected in the average monthly consumption of 160,600,000 kWh. Clearly, any increase in the electricity rate will have a significant impact on monthly power bills. Depending on the selection of cost distribution and economic condition impacts, the average monthly power bill for aluminum companies could increase between \$172,600 and \$940,400."</p> <p>With regard to the use of energy conservation and renewable energy, 1,246aMW of power would be a substantial amount of power to try to replace with these resources. As can be seen by review of Appendix E, Table B, of this Final EIS, combustion turbines continue to be the resource of choice for replacement of generating resources primarily because of costs. Even in light of the combustion turbine emphasis, BPA will continue to pursue energy conservation and renewable generating resources to the extent practicable.</p>
38/25	<p>In addition, the DEIS notes "deconstruction costs" as a negative economic effect of dam removal. The DEIS fails, however, to mention potential savings on dam maintenance and capital improvement costs to help offset the initial investment, as well as potential increase in jobs from both deconstruction and new energy generation construction.</p>	<p>The text has been modified to address the issues of dam maintenance, improvements, and repairs, as well as changes in jobs related to dam removal. See Section 5.3 in this EIS, for a assessment across the several related categories of effects. Under Employment, there are specific examples and clarification related to jobs and dam removal.</p> <p>Also see Section 5.14 of the Corps' FR/EIS. They have noted in Section 5.14.1.1, under Total Regional Impacts for employment that there would be an overall loss of related employment in the Pacific Northwest of more than 2,000 jobs.</p>
38/26	<p>Without question, breaching the four lower Snake River dams would dramatically alter the way in which commodities are transported in the lower Snake River basin. Clearly, investments would have to be made in new infrastructure SOS would like to point out economic analyses which demonstrate that the infrastructure investments required could be far superior to continued taxpayer and ratepayer subsidization of the Snake River waterway.</p>	<p>The commenters position for removal of the Lower Snake River dams is well understood, BPA is not familiar with any credible analysis supporting this comment. Also refer to the FR/EIS for a comprehensive analysis of the impacts associated with breaching the four Lower Snake River dams, especially Section 5.9 regarding transportation.</p>
38/27	<p>BPA asserts that "[o]ver 300,000 acres of irrigated land are served out of the Lower</p>	<p>The citation on page 183 of the DEIS that "over 300,000 acres of irrigated land are served out of the Lower Snake</p>

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	Snake reservoirs. ..." As confirmed by the U.S. Army Corps of Engineers and several additional studies, however, there are only approximately 37,000 acres irrigated with water from the Lower Snake River, all of which is drawn from Ice Harbor Reservoir. All additional farmland "served out of the lower Snake reservoirs" irrigate using water from private wells which do not draw water directly from the river. ... We urge BPA to adjust its presentation	Reservoirs" has been corrected in this EIS. Page 94 of the DEIS did state that "37,000 acres are irrigated using surface water diverted from Ice Harbor."
38/28	Among the benefits of healthy salmon populations, one of particular relevance is the restoration of both Tribal and non-Tribal salmon fisheries. In order to sustain these benefits, SOS advocates that fisheries be managed specifically to meet escapement goals for wild stocks, and to assure the long-term capacity of watersheds to support natural production of salmon.	SOS preference has been noted. Also, we have added it to Sample Implementation Actions in Volume 3.
38/29	The Weak Stock alternative calls for the elimination of most ocean harvest where targeted, or selective harvests can not be employed, resulting in an overall decrease in commercial value. ... The 2000 FCRPS Biological Opinion explicitly states: "For most of the listed ESUs, opportunities to improve survival through additional harvest reductions are limited because they are not affected, or are affected only minimally, by today's much-reduced fisheries ... [A]s a result, <i>even the complete elimination of all remaining fisheries would yield only limited benefits for many of the ESUs.</i> " [Emphasis added by commenter.]	This comment quotes language from the NMFS 2000 FCRPS BiOp, indicating that even the complete elimination of all remaining fisheries would yield only limited benefits for many of the ESUs. This BiOp language leaves open the likelihood that while some ESUs will not benefit from eliminating harvest, some ESUs will. The idea underlying the Weak Stock Alternative is to focus on weak stocks first, regardless of, for instance, economic impacts on commercial fishing. This comment is trying to deflect attention from the real and devastating impacts from commercial fishing on anadromous fish and ignores the underlying basis of the alternative. In addition, BPA refers the commenter to Chapter 2 of this EIS and the discussion under Federal Indian and Indian Resource Policies where harvest impacts are also discussed. Finally, after publication of the DEIS and NMFS' BiOp, a Salmon Recovery Science Review Panel convened by NMFS found there were flaws in how harvests were set and their impacts on listed stocks analyzed. The panel stated as follows: "[W]e remain somewhat mystified concerning the scientific justification for current allowable harvests, especially the continuation of substantial or high allowable harvest rates on listed salmonids ESUs. Most of the listed ESUs have experienced continued declines in spawner abundance over the past two decades, with

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		<p>estimated lambda⁷ less than 1. In every case ..., the estimated lambda in the absence of harvest exceeded lambda with harvest. Thus, it is clear that [harvest] contributed, in several cases quite significantly, to the population declines, decreasing estimated lambda by as much as 20% to 30%. In four cases harvest rates in effect before ESA listing tipped the balance between estimated lambda greater than 1 without harvest to less than 1 with harvest (Lower Columbia Chinook, Snake River Fall Chinook, Lower Columbia Winter Steelhead, and Upper Columbia Steelhead). ...</p> <p>For example, allowable in-river harvest of Snake River Spring/Summer Chinook actually increased in recent years from less than 5% in 1995-1999 to nearly 6% in 2000 and more than 12% in 2001. Apparently substantial harvest of listed ESUs continues to be permitted by NMFS, e.g. up to about 50% per year for components of the Lower Columbia Chinook and Snake River Fall Chinook. ...</p> <p>Errors in estimated escapement can be large: for example, we were told that because of recent changes in ocean conditions steelhead returns were about three times greater than predicted in some reaches in 2001. Presumably in other years or sites errors of similar magnitude also occur in the opposite direction. ...</p> <p>In response to our question it became apparent that NMFS, state and tribal personnel involved in setting allowable harvests were not making use of basic theories of harvesting fluctuating populations, ... nor were they familiar with the advantages of threshold harvesting to reduce the risk of population collapse or extinction and to increase average sustainable harvests."⁸ At a minimum, the NMFS BiOp and SOS comments indicate there is uncertainty regarding the impact of harvest on some weak stocks. More likely, as noted by the Salmon Recovery Science Review Panel, harvest has been reducing and continues to significantly reduce the annual growth rate of many weak stocks. In either case, BPA believes an alternative that focuses on promoting weak stocks should further limit or eliminate commercial harvest when compared to the status quo.</p>
38/30	A prudent policy alternative should recognize that fisheries in the Columbia River basin have already been significantly reduced in recent years in	Chapter 2 enumerates the decline of salmonid fisheries beginning in the 1800s due to excessive harvest. The Weak Stock Focus alternative does focus on hydropower operations and includes the most aggressive

⁷ Lambda is median annual population growth rate.

⁸ Robert T. Paine, et al., Salmon Recovery Science Review Panel, Report for the meeting held August 27-29, 2001, Northwest Fisheries Science Center, NMFS, Seattle, Wash., pages 7-8.

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	part to reduce impact on listed species. More importantly, this policy alternative [Weak Stock] should recognize that hydropower operations "harvest" many more wild salmon than do fisheries, and thus should be the real focus of any recovery efforts. Indeed, the Biological Opinion's "Incidental Take" Statement for Snake River fall chinook alone estimates a juvenile mortality rate at 88 percent from operation of the hydro system.	FCRPS generation reductions of any of the Policy Directions, other than the Natural Focus.
38/31	SOS is encouraged that the DEIS recognizes the economic benefits of a sport fishing, though these benefits are severely underestimated However, by proposing further limits on sport fishing, the DEIS is again unnecessarily inflating the socioeconomic consequences of the Weak Stock alternative. The final EIS should recognize and account for this error to adequately present this alternative to the public.	First, the Policy Direction alternatives defined in the DEIS and this Final EIS are based on our experience of participating in regional discussions. As noted in Chapter 3 and other places throughout the document, other definitions can be made. Our work on this EIS within the Region demonstrated to us how many different definitions for any one of the five base Policy Directions there could be. It is because there are so many different ways to define the Policy Directions that BPA defined the five basic Policy Direction alternatives and then developed the "mix and match" or hybrid approach to allow for many other alternatives definitions to be created (see Section 3.5.3 and Appendix I of this EIS). The commenter's concern is so fixed on making our definition for Weak Stock Focus fit their definition that they have missed the opportunity to create its own Policy Direction alternative by mixing portions of the other alternatives such as the Sustainable Use Focus alternative. We encourage the commenter and others in the future to use Appendix I of this EIS, which was in the DEIS, to create their own alternative Policy Direction and assess the effects as described in this EIS. Second, this comment seems to be a reiteration of the commenter's position that harvest reduction is not a necessary component of the Weak Stock Focus. We do not believe that is consistent with the concept of protecting all ESA listed fish and wildlife populations used in our definition. Again, the commenter is encouraged to create their own definition using the information in this EIS. See the revisions to Sections 5.1, 5.2, and 5.3 in this EIS for more examples and references on sport fishing.
38/32	The DEIS dramatically underestimates the recreational benefits of breaching the lower Snake River dams, and inaccurately claims there would be fewer recreational opportunities in the Weak Stock approach than under the Status Quo. The Army Corps of Engineers' (Corps) own DEIS indicates just the opposite.	There is uncertainty in the recreation estimates. Moreover, there are many factors other than breaching at work in the Natural Focus and Weak Stock Focus alternatives. DREW says that recreation benefits are probably large and very uncertain, and results are presented with a wide confidence interval. Recreation benefits might be enhanced in the Lower Snake River region, but this DEIS considers effects Basinwide. Still,

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		<p>we have reviewed the Corps' work again and have added clarifying examples and information to our assessment of recreation effects.</p> <p>See, also, the FR/EIS, Section 5.13.</p>
38/33	<p>Overall the DREW estimates that in the short term, bypassing the lower Snake River dams will eliminate eight hundred reservoir-related jobs, but in the long run will generate over three thousand recreation-related jobs as new and enhanced recreation opportunities associated with a free-flowing river emerge. Perhaps more importantly, however, the DEIS fails to account for the broad range of economic benefits that could be derived from the quality-of-life assets of a naturally flowing river.</p>	<p>The FR/EIS, DREW work in Appendix I, Tables 6-34 and 6-35 show short-term and long-term employment effects of Dam Breaching. Long-term recreation job increases are estimated to be less than 1,000. Permanent job losses associated with decreased Corps spending are estimated to be 1,415. The total, net long-term change in employment is a loss of 1,372 jobs, but 20,821 short-term jobs are created in implementation and construction. Section 5.14.1.1 of the FR/EIS, under Total Regional Impacts for employment note that there would be an overall loss of related employment in the Pacific Northwest of more than 2,000 jobs. We are unaware of studies that demonstrate the economic benefits that could be derived from the quality-of-life assets of a naturally flowing river.</p>
38/34	<p>SOS believes that the Sustainable Use approach, as well as the approach taken by the Biological Opinion is insufficient not only to meet BPA's purposes and needs in funding and implementing fish and wildlife mitigation and recovery efforts, but to avoid jeopardy and to recover salmon and steelhead to sustainable, harvestable levels. ... SOS agrees that many of the measures outlined in the Sustainable Use Focus, and the BiOp, are indeed necessary to improve salmon and steelhead survival. For example, the DEIS outlines numerous beneficial habitat implementation actions under the Sustainable Use policy alternative that SOS believes should be included in any final policy alternative. ... As stated earlier, a fundamental problem of the Weak Stock approach is its failure to adequately address the needs of salmon populations not listed under ESA, and subsequently its failure to take steps that would prevent healthy populations from becoming endangered. The Sustainable Use Focus does not suffer from this bias. Instead, the Sustainable Use alternative gives some priority to unlisted populations. However, by putting off a decision on dam removal in favor of modest hydro</p>	<p>The effect of breaching Snake River dams would affect Snake River listed fish. It would not benefit listed species originating from outside the Snake River Basin. While we recognize that some consider breaching Snake River dams as critical to recovery of Snake River salmon, this remains an outstanding uncertainty on which not all biologists agree (see the Anadromous Fish Appendix A of the FR/ EIS on dam removal; and the NMFS 2000 BiOp).</p>

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	modifications as well as ramping up efforts in all other "H's", the Sustainable Use alternative fails to adequately confront the true impediments to recovering listed salmon [at] the four lower Snake River dams.	
38/35	SOS feels that the Sustainable Use Focus falls far short of meeting recovery needs in other areas. For example, ... [it would] increase emphasis on the harmful barging and trucking program to transport juvenile salmon while failing to mandate an aggressive spill program.	The opinion of the commenter concerning the Sustainable Use Policy Direction is noted. See the comment response to 38/31 above. We do not believe that barging and trucking of juvenile salmon is necessarily harmful; also these transport methods would be just two of several methods that could be used to aid in fish passage. Please see FR/EIS, especially Section 4.5 and 5.5.
38/36	SOS urges BPA to alter the Weak Stock approach as identified above to achieve the greatest benefit from this alternative and to eliminate unnecessary consequences, and further urges BPA to consider this as its preferred alternative.	BPA's Preferred Alternative (PA 2002) in this EIS is a mixture of the Weak Stock Focus and Sustainable Use Focus alternatives. It has been determined in light of the comments received, including those of SOS. However, keep in mind that each alternative Policy Direction (hybrids included) have their own set of consequences. In the world of fish and wildlife recovery, defining the maximum benefits with the minimal consequences is often in the eye of the beholder. Please refer to the Preferred Alternative selection process for an explanation of how BPA engaged in this balancing process in Chapter 3.
39/1	The breadth and length of NEPA coverage anticipated by this document - ... We need to see reasonable parameters placed around the scope of NEPA coverage.	See Umbrella Response regarding Scope.
39/2	The inadequate and premature analysis of impacts on Tribal cultural resources - ... the sections on cultural resources fall far short of the analysis and consultation needed to address the Tribe's concerns. The DEIS reflects a complete lack of any feedback loop from the information garnered during the time from SOR (1995-97) to the present.	<p>Regarding the analysis of impacts on tribal cultural resources, this EIS provides a broad, policy-level analysis of potential impacts associated with various Policy Directions. As such, the EIS discusses only general impacts on cultural resources and tribal concerns on a qualitative level. Once a particular Policy Direction is selected and site-specific actions are proposed, more in-depth analysis of tribal and cultural resources effects from each site-specific action will be conducted through additional NEPA documentation. See also the Umbrella Response regarding Tiered RODs.</p> <p>Regarding input provided by the tribes since the time of the SOR, BPA has made repeated diligent and good-faith efforts to continue dialogues with the tribes about possible effects on tribal and cultural resources from regional fish and wildlife mitigation and recovery efforts. Information gained from these dialogues and other regional processes is reflected in various sections</p>

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		of this EIS. For example, tribal recovery plans and other recovery plans that included tribal involvement since the SOR are discussed in Section 2.3.2.4, Initiatives to Modify the Current State. In addition, the discussion of possible environmental consequences to the tribes and cultural resources in Chapter 5 of the EIS was based in part on recent input from the tribes.
39/3	We strongly recommend that BPA ... make a deliberate effort to address federal NEPA review during meetings scheduled for October 2001	BPA participated in the referenced meetings, sharing our work on this EIS with interested parties. BPA's ongoing efforts to address cultural resources with the upriver tribes, and our commitment to funding cultural resource mitigation, reflect the earnestness with which BPA approaches these important questions.
39/4	We also strongly recommend that BPA delay any FEIS and ROD until regional policymakers have had an opportunity to resurrect a regional governance structure.	The governance analysis in the EIS demonstrated that the ultimate governance structure had no bearing on the environmental impacts. Therefore, irrespective of the governance structure selected, the environmental analysis within this EIS would be unaltered. See Chapter 6 for further discussion of the governance issue.
39/5	The EIS is tardy because BPA has already proceeded under fundamentally altered hydrosystem and business operational strategies without updated NEPA coverage. Tardy also because BPA has already entered its Record of Decision on the 2000 Biological Opinions, committing BPA to operational scenarios and fish and wildlife funding actions that, ostensibly, fall within the scope of the [DEIS].	BPA disagrees because of the fundamental nature of this EIS and the existence of NEPA documentation and analysis addressing the actions that have been taken or will be taken prior to completion of this EIS. Please see 40 CFR 1506.1 and the Umbrella Response on Reasons for this EIS.
39/6	On the other hand, the DEIS is premature because the region's sovereign governments should first select a governance approach, then determine a fish and wildlife policy direction.	See response to comment 39/4 above.
39/7	It would be helpful to see the alternatives illustrated in terms of the stated "yardsticks."	See Section 3.3 in this EIS.
39/8	The text refers to BPA's "expectation" that strategies discussed in the "All-H Paper" will be implemented. Is this not now more than an "expectation"? Did not BPA commit in its ROD on the BiOps to meet its All-H Commitments as part of the RPA for listed species?	Indeed, BPA takes its Basinwide Strategy (formerly "All-H") commitments seriously and continues to uphold them. The expectation in large part refers to the other Federal Caucus members whose commitments and actions are necessary given the "one for all, all for one" situation in which the Region finds itself—no one agency can ensure the avoidance of jeopardy for all the others, but the failings of one can defeat the efforts of the others.
39/9	The document should note that some	Comment noted. This EIS discussion on upriver tribes

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	stakeholders, including the Spokane Tribe, believe that the Human Effects Analysis of the Council's Multiple-Species Framework Report was flawed and did not adequately assess impacts to Tribes in the Upper Columbia blocked area.	reflects information gathered from the Framework, as well as many other sources. See the References section of this EIS, and the more than 600 footnotes added to this EIS to provide more examples and clarifying information to the DEIS.
39/10	"... mitigation for <u>only</u> [strike 'over'] 38% of the wildlife habitat inundated by the dams and reservoirs."	Please note that BPA's newer preliminary estimate conservatively places inundation and construction mitigation for wildlife at 43% (USDOE/BPA 2002g).
39/11	The substantial discussion afforded to economic effects warrants further explanation of the context of fish and wildlife funding. [Commenter inquires about total costs for fish and wildlife; total costs of BPA irrigation and industry subsidies over the same time; whether F&W costs include "foregone revenue" from operating the hydrosystem for salmon.] ... At least a footnote should explain that there are many approaches to calculating the market value of foregone revenue, and some parties dispute the validity of BPA's calculations. Also, the revenue foregone to provide water for irrigation and navigation should be disclosed.	The Council's 2001 Report is cited to reveal that there has recently been such a study. If there had been a similar study on irrigation and industry subsidies, foregone revenue, or revenue foregone by irrigation and navigation, it would be cited here. Otherwise, this is not an appropriate spot for such a detailed discussion. While they are substantial, foregone revenues are not included in the cost estimates. Review Section 5.3 of this EIS, examples and clarifying information has been added to the analysis of the Policy Direction alternatives to better enlighten the reader on many of these issues.
39/12	The Table of Key Regional Issues should be expanded. The section labeled "Tribes" should include at least the following: Tribal Co-Management; Tribal Cultural Properties; Tribal Water Rights; and, Tribal Land Losses to Operations. These edits should be made whenever the same Table is reprinted elsewhere in the document.	The information has been considered, but BPA still believes that the Table of Key Regional Issues in Chapter 3 adequately captures those elements of tribal issues that are germane to the policy decision under consideration. Co-management is covered generally by Tribal Harvest, Issue 12-1, and to some extent by the discussion on Governance in Chapter 6. Cultural properties and lands lost to operations overlap and are covered in the table by Issue 12-2, Tradition, Culture, and Spirituality. We will address tribal water rights in several ways: first, by including the potential use of treaty water rights for habitat improvement; next, including protection of habitat that supports fish that are part of a treaty fishery; and finally, on a case-by-case basis as those rights are relevant to specific projects or programs.
39/13	A very well-defined boundary is needed around this EIS. ... Although NEPA grants broad discretion ... it does not provide for writing a "blank check" to "pay" for any possible future F&W funding strategy.	See Umbrella Responses regarding Tiered RODs and Scope. The EIS was designed to serve the Agency today and into the future; therefore, BPA used a broad scope to allow for future change and modifications. It is important to BPA, as well as the Region, that BPA be able to move relatively quickly on changing policy direction when the regional guidance necessitates it, and

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		successfully implementing the actions to further the policy direction toward mitigation and recovery of fish and wildlife. Due to the importance of timeliness in fish and wildlife mitigation and recovery when species are listed as endangered or threatened, the Tiered ROD concept provides BPA both the necessary public process and ability to quickly implement necessary actions.
39/14	"[A]ctions consistent with the Policy Direction" simply does not provide enough specificity to determine a reasonable range of actions that would be afforded NEPA coverage under this document. [ref: page S-xvi]	See Umbrella Response regarding Tiered RODs and the previous comment response. See also the Sample Implementation Actions in Volume 3.
39/15	Terminology in the "Commerce Focus" alternative should be defined. What is "economically efficient" restoration/harvesting/hatcheries?	Economic efficiency means that benefits exceed costs. This criterion is not the same as cost-efficiency, where the least-cost method of achieving some goal is selected, and the benefit of that goal is not considered. Please note also that mitigation and recovery measures implemented pursuant to the Council's program must meet a cost-efficiency standard as well, pursuant to 16 USC 839b(h)(6). Some changes have been made to better clarify the definition of Commerce Focus in Chapter 3.
39/16	The decision on the regional policy direction ... is an enormous burden and responsibility to place on one person. The policy direction should be chosen first, through the collective effort of the region's Federal, Tribal and State sovereigns, on behalf of their respective constituencies. Then, an environmental analysis can be conducted with greater specificity and usefulness.	As discussed in this EIS and DEIS, BPA is <i>not</i> making a decision for the <i>Region</i> regarding the policy direction to be followed for fish and wildlife recovery efforts. Rather, the decision that BPA makes with information from this EIS will be solely a decision for BPA based upon its needs and obligations. BPA currently is in the position of needing to identify a comprehensive policy to guide its implementation and funding of fish and wildlife mitigation and recovery efforts. Even though progress has been made toward a unified planning approach through many different regional processes, the Region has not yet reached agreement on a policy direction. Thus, BPA has determined that it needs to proceed with the preparation of this EIS to analyze the environmental impacts of all reasonable alternatives. Because of the broad policy nature of this EIS, other agencies may find it a useful tool for use in their own decisionmaking processes regarding the regional fish and wildlife recovery effort.
39/17	"Proceed[ing] now toward implementation of certain actions under the Biological Opinions" might not mean that BPA has made its final determination on an over-arching Policy Direction for fulfilling all its fish and wildlife obligations for the next 10 years. ... Where does BPA discern flexibility on	Implementation planning gets to the how, when, and where of an action that in many instances is not articulated in the BiOps. In addition, BPA is addressing mitigation and recovery issues arising beyond the BiOps' scope. Thus, there are numerous issues that the BiOps decisions do not resolve. Several of the Key Issues identified in this EIS are examples of the concerns that go beyond just the BiOps. See Appendix I

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	major fish and wildlife issues beyond the commitments in its ROD on the BiOps?	for an illustration and the Sample Implementation Actions in Volume 3 potential actions.
39/18	While BPA acknowledges the Current Policy Conflicts, BPA nonetheless maintains the position that previous NEPA processes (such as SOR and Business Plan) remain viable, and BPA proceeds toward implementation of BiOps for which RODs have been entered. Is there sincere intent to address/resolve the policy conflicts before issuing a FEIS?	Regarding the SOR EIS and the Business Plan EIS, see response to comment 39/20. Regarding BiOp implementation, see responses to comments 2/2, 39/17, and 39/33. BPA did not anticipate that regional resolution of all policy conflicts identified in this EIS would be reached before BPA issued the DEIS. By law, BPA must act; therefore, we do not have the luxury of waiting for resolution of all policy conflicts. However, it is hoped that this EIS and its associated public process are being and will be used by the Region to help address many of these conflicts, and possibly resolve some as well. In addition, BPA does intend to continue to work on addressing and resolving these conflicts both during and after the NEPA process for this EIS.
39/19	We encourage BPA to promote the use of the Basin Forum concept (Three Sovereigns, not NMFS Regional Forum) as the appropriate governance structure for the basin.	Governance is a very important regional issue, which is why we included it in this EIS. However, our analysis indicates that the environmental impacts will not be altered as a consequence of selecting a particular governance structure. See Chapter 6 of this EIS.
39/20	Although the Business Plan and SOR EISs contain useful information, they no longer provide adequate environmental review for today's market conditions and system operations strategies. Indeed, the SOR environmental analysis was flawed when the EIS was issued, particularly as to cultural resources. Further, the body of knowledge pertinent to these EISs has increased and changed over the past 6 years, and current information should be inserted into new comprehensive environmental analysis.	The SOR EIS and the Business Plan EIS remain very useful documents and have been incorporated by reference into this EIS. The SOR and Business Plan EISs (as well as the other environmental documents listed in Chapter 1 of this EIS) were used as information resources for the environmental analysis in this EIS, but were not the sole source for the analysis. This EIS also incorporates information that has been generated since publication of the SOR and the Business Plan. Thus, the environmental analysis contained in this EIS is based on additional information and can in effect be viewed as clarifying the SOR and BP EISs, to the extent they may need it, in the areas covered by this EIS. We still maintain that the basic impacts referenced in the SOR and BP EISs continue to have validity. The more current information, including that from the Tribes, has provided more examples of illustrating concepts in those documents but has not changed the fundamental actions to effects relationship.
39/21	If the BPA Administrator merely records a policy direction selected in a process that provides meaningful Tribal involvement, the Administrator will have fulfilled an administrative duty to proceed with NEPA documentation. On the other hand, if the BPA Administrator surmises the region's preferred or "likely" policy direction, the Administrator will have	This EIS has rephrased the "likely" aspect of the BPA decision to be made. It has been directed more at taking guidance from the Region's policy work. When BPA decides to adopt a Policy Direction that is based on the Region's policy direction guidance, this does not mean that BPA will assume responsibility for making a decision for the Region. BPA is interested in pursuing a unified approach for fish and wildlife mitigation and recovery efforts, as discussed in Chapter 1, BPA's

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	assumed responsibility for a decision that rightfully falls on the shoulders of all the region's sovereign governments.	<p>Purposes of the EIS. This goal necessarily means that BPA will look to the policy directions of other agencies and entities in the Region in making a decision regarding BPA's policy direction. However, even though BPA's decision based on this EIS may reflect the Region's policy direction, the decision that BPA makes from this EIS will be solely a decision for BPA; BPA will not be making a decision on policy for other agencies or entities.</p> <p>As the Region's largest funding source for fish and wildlife mitigation and recovery, as well as the agency commonly perceived as being responsible for achieving goals for ESA-listed anadromous fish, it could be viewed by some in the Region as irresponsible if BPA were not to have a publicly vetted policy for how to proceed.</p>
39/22	Tiered RODs hold great potential to thwart the intent of NEPA analysis. ... We consider it imperative that BPA narrow the range of potential activities that would be considerable "tierable" from this EIS.	See Umbrella Response regarding Tiered RODs. The actions that might be tiered to this EIS are described in Chapters 1 and 3, and its accompanying tables and the Sample Implementation Actions (Volume 3). If, in the future, BPA proposes an action not included in the types of actions in this EIS, we will complete a supplement analysis pursuant to DOE regulations and determine whether the action is within the scope of this EIS or whether it requires additional NEPA compliance work.
39/23	If BPA expects fish, wildlife and Tribal stakeholders to become educated about the complex factors limiting BPA's ability to meet its fish and wildlife and trust obligations, can it not also ask its customers to become educated about the complex factors comprising BPA's costs for fish and wildlife?	Regarding fish and wildlife obligations, BPA fulfills its obligations as delegated by Congress and as found in its enabling acts. We hope that this EIS will help educate customers to become knowledgeable about the "complex factors" comprising BPA's costs for fish and wildlife. However, just because BPA's customers become educated about factors comprising BPA's costs does not necessarily mean that they are any more receptive to cost increases or to uncertainty about future costs.
39/24	No mention is made of Tribal water rights, which are senior and prior, in most instances, to non-Tribal water rights.	See additions to Chapters 2, specifically Section 2.3.2.3, regarding Tribal water rights.
39/25	Although salmon have been taken away from the Tribal people in the blocked areas, this does not mean that Tribal interest in salmon has diminished.	We have noted the importance in anadromous fish, even in blocked areas, in Section 5.3 and Volume 3.
39/26	This DEIS is inadequate for umbrella environmental coverage, particularly over time and over changing policy direction. Adaptive management and programmatic, long-term NEPA coverage are uneasy partners. The scope and breadth of BPA's NEPA coverage needs to be refined.	See Umbrella Response regarding Tiered RODs and Scope.

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39/27	The Policy Direction must be chosen through deliberate policy-level collaboration among the region's Federal, State and Tribal governments.	We agree; however, as we explained in Chapter 1, the Region has been unable to reach this level of agreement over the past two decades. Even over the recent 3-year period, the Region continues to struggle over what the policy should be. These comments on the DEIS bear this out. See Chapter 3, Figure 3-1, Different Ways to Establish Policy Direction.
39/28	The last sentence in Sec. 3.1.1. reveals the source of some of our concern: "Such an approach [flexible, open-ended EIS] also anticipates changes over time and extends the usefulness of the EIS." We are concerned that the "usefulness of the EIS" will extend to cover a multitude of actions that may fall very vaguely within ambiguous "policy directions." Without further definition of restraining parameters, this NEPA approach could eliminate the need for future environmental analysis for almost any BPA-funded activity that bears any relationship whatsoever to fish and wildlife.	We do not see lack of analysis as required by NEPA, but better alignment of analysis through more useful connections of policy and site-specific levels of data, and the subsequent decisions from that data analysis. See Umbrella Responses regarding Tiered RODs and Qualitative versus Quantitative Effects. See also responses to comments 13, 16, 21, & 22 for this letter above.
39/29	The language in the paragraph immediately preceding Table 3.2-1 is useful exposition of the spiritual significance of fish and wildlife to Tribes, and of Tribal concerns about culture, history, health and sovereignty. Table 3.2-1 should be corrected to add Key Regional Issues for Tribes, as commented earlier	See response to comment 39/12 above.
39/30	"Ultimately, BPA will decide which alternative will guide the implementation and funding of its fish and wildlife mitigation and recovery efforts." This statement seems to contradict commitments elsewhere in the document allow the broader region to determine the fish and wildlife policy direction.	See responses to comments 18/7 and 39/21, above.
39/31	Before the BPA Administrator uses the comparative-analysis-table methodology to select a preferred alternative and evaluate future proposals, the facts, concepts and assumptions underlying the methodology must be corrected and verified.	BPA has based the analysis in this EIS on the most reliable information available. In response to this and other related comments, BPA has updated the facts, concepts, and assumptions underlying the comparative analysis tables in this EIS, where necessary to incorporate clarifications suggested by the commenters. Over 600 footnotes have been added to this Final EIS to provide more examples and clarifying information for the reader.

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39/32	"[T]here are still many biological and political unknowns." "Scales and intensity may vary, future environmental and economic conditions are unpredictable, and quantitative models have unknown errors and assumptions." These are reasons NEPA coverage is dubious at this grand scale. Somehow, the scope and breadth of NEPA coverage must be defined, refined, and confined.	See Umbrella Responses regarding Tiered RODs, Scope, and Qualitative versus Quantitative Effects.
39/33	At present, federal agencies are rushing through the 5-year and 1-year planning processes for BiOp Implementation. There will be no time for regional review of the environmental impacts of these BiOp Implementation Plans. Action Agency RODs are relied upon as NEPA coverage for the Implementation Plans, although no new environmental analysis was conducted beyond jeopardy analysis for ESA-listed species. How are Tribes to be comforted that the full range of environmental concerns will be meaningfully and accurately investigated and addressed?	<p>The Implementation Plan includes actions that have already received or will receive environmental analysis before they are implemented. The first 5-year plan, Endangered Species Act Implementation Plan (2002-2006) for the Federal Columbia River Power System (2002–2006 5-Year Plan), was published as a draft in July 2001 and circulated for review. The Action Agencies discussed the draft 2002–2006 5-Year Plan with states, tribes, and Columbia Basin stakeholders throughout the Region.</p> <p>Informal and formal comments were received through the NMFS Regional Forum, Regional Executive meetings, staff discussion, written letters, and other opportunities. Many of those comments were reflected in the actions included in the Implementation Plan.</p> <p>The Bureau of Reclamation, the Corps, and BPA summarized and responded to key comments received in the draft Endangered Species Act 2003/2003-2007 Implementation Plan for the FCRPS (July 2002).</p> <p>As future Implementation Plans are prepared and released, public involvement will continue to be made part of the process.</p>
39/34	"An alternative that is outside the legal jurisdiction of the lead agency must still be analyzed in the EIS if it is reasonable." Why, then, does this DEIS not analyze the potential for restoration of anadromous salmon above Grand Coulee Dam? The upper Columbia blocked area Tribes repeatedly have brought this request forward to the federal agencies, yet our proposal is not mentioned anywhere in this DEIS.	Restoration of anadromous fish above Grand Coulee Dam is not a policy alternative, but it is a potential mitigation and recovery action. It is one of many Sample Implementation Actions. See Volume 3 for the actions across the different Policy Directions.
39/35	"Destruction of cultural resources is primarily related to dam breaching in the Natural Focus and Weak Stock Policy Directions." This statement is inaccurate. Destruction of cultural resources occurs on a daily basis due to operation of the	This comment references the Chapter 3 discussion of potential irreversible and irretrievable effects of the Policy Directions in the EIS. This discussion is intended to summarize potential effects that would or could occur under the various Policy Directions if implemented, rather than existing impacts such as the

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	hydrosystem for multiple purposes. Regardless which policy direction is chose, cultural resources will continue to be destroyed.	ongoing destruction of cultural resources referenced by the comment. Furthermore, the discussion uses the term "cultural resources" to refer to archaeological resources and identified traditional cultural properties, rather than tribal cultural values. For these cultural resources, irreversible and irretrievable effects from fish and wildlife mitigation and recovery efforts would be primarily related to the potential for vandalism and erosion, for example, if these resources were exposed as a result of dam breaching. See Sections 5.1, 5.2, and 5.3 of this EIS for more analysis information.
39/36	Discretion to refer to this NEPA document to cover all future scenarios defeats NEPA's purpose of environmental analysis. Specifically regarding future changes in Policy Direction, current analysis would need to take into account the changed environmental conditions. ... Pursuing one policy direction leads inexorably to the need to review environmental impacts of a changed policy direction in the future. Implementing one strategy alters the conditions that must be assessed in selecting a different strategy in the future.	Irrespective of which Policy Direction is adopted, at some future point the analysis in this EIS may need supplementing. However, this EIS is designed to be useful beyond the immediate policy-level decision. Of course, the extent to which it remains a useful analysis will be determined by future events. BPA does not mean to assert that this EIS absolutely addresses all conceivable future scenarios. As detailed in Chapter 4, if in the future, the Policy Direction chosen by BPA were to change, BPA would assess the appropriate course of action to ensure compliance with NEPA.
39/37	Decision-makers cannot disregard the synergistic and cumulative effects of implementing policy directions. These effects lead to the need for updated environmental analysis, on broad and site-specific scales, over time.	<p>The point made in this comment by the commenter is a major reason underlying this EIS. There are many synergistic and cumulative effects concerns. This EIS serves exactly this purpose by attempting to capture the relationships between human actions and effects to the environment (both the physical and social/economic environments). In addition, by providing a more holistic analysis of actions that could occur under each of the potential policy directions, this EIS avoids "piecemealing" actions to a point where the environmental effects are non-significant in order to implement the actions. Because this EIS allows for mixing and matching components of the five different base Policy Direction alternatives, BPA is able to create and assess literally thousands of different alternatives. See Chapter 3 and Appendix I.</p> <p>BPA also acknowledges that, despite the Agency's best intentions to maximize the useful life of this EIS, the EIS may require supplementation at some future point. However, this does not affect the adequacy of this EIS for the current and future decisions that BPA will make regarding the policy directions identified and analyzed within the scope of this EIS.</p>

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39/38	Section 3.4.1 attempts to give decisionmakers the "necessary structure to understand the environmental consequences" of choosing alternative policy strategies. The tools provided in this DEIS are very useful. They summarize the issues and types of impacts to be considered in decision-making. Combined with other tools, ... decision-makers can get a general idea of trends to be expected when implementing certain broad regional directives. However, such information does not necessarily eliminate the need for more detailed environmental analysis.	See the previous comment response and the Umbrella Response regarding Tiered RODs.
39/39	In the event a definite policy direction is selected, we need the opportunity to comment on both the appropriate actions to implement that direction, and the environmental consequences of such actions.	See Umbrella Responses regarding Tiered RODs and Reason for the EIS.
39/40	Table of Current Implementation Actions – 1-6 Watersheds: Does not mention current subbasin planning effort through NW Power Planning Council's Fish and Wildlife Program.	This EIS has been modified to include the Council's 2000 Fish and Wildlife Program elements, including subbasin planning. See Volume 3, Sample Implementation Actions.
39/41	Table of Current Implementation Actions – 1-9 Reservoirs: Does not mention flood control.	Flood control is identified in Section 4 of the Sample Implementation Action tables in Volume 3 of this EIS. Specifically, see Sections 4.2, Hydro-Operations and 4.5, Reservoir Levels.
39/42	Table of Current Implementation Actions – 4-3 Spill: Need to mention/address Tribal Water Quality Standards.	A discussion of tribal water rights has been added to Chapter 2. BPA will examine meeting tribal water quality standards specifically where those standards are applicable to actions proposed for implementation.
39/43	Table of Current Implementation Actions – 11 Recreation: Mention recreational use of storage reservoirs.	Recreational use and reservoirs are mentioned in the Sample Implementation Action tables in this EIS. More examples and clarifying information has been added to Section 5.3 of this EIS on recreation and reservoirs.
39/44	Table of Current Implementation Actions – 12-1 Tribal Harvest: Need enough anadromous fish to resume harvest for Tribes in the blocked areas. Spokane Tribe/UCUT have been excluded from the discussions about harvest.	There are no current authorizations, appropriations, or engineering plans for restoring anadromous fish to blocked areas. The likelihood of such reintroductions occurring soon is low. Nevertheless, restoration above Grand Coulee is a potential action under the Sample Implementation Actions (Volume 3). See comment 39/34. Reintroduction to other blocked areas is not considered because those areas were not blocked by FCRPS projects for which BPA has a mitigation responsibility.

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39/45	Table of Current Implementation Actions – Where is the discussion of Cultural Properties (archaeological resources, Traditional Cultural Properties, and so forth)?	The tables of Sample Implementation Actions are intended to identify Key Issue areas for each Policy Direction, as well as examples of types of actions that could be followed for fish and wildlife mitigation and recovery if the respective Policy Direction were selected. The focus of these tables is on potential mitigation and recovery actions that could be implemented, not on the affected environment for resources such as cultural resources or the potential impacts of the actions on various resources such as cultural resources. See Section 5.1 of this EIS for discussion of the affected environment for cultural resources, Sections 5.2 and 5.3 for potential impacts. In addition, more in-depth analysis of impacts on tribal and cultural resources will be conducted for each site-specific action through additional NEPA documentation once these site-specific actions are proposed (see the Umbrella Response regarding Tiered RODs).
39/46	<p>We acknowledge federal authority to operate the FCRPS to meet multiple mandates. At the same time, we do not believe the agencies are relieved of their obligations to conduct meaningful analyses under NEPA and NHPA. ...</p> <p>The concepts of emergency operations being of relatively short duration, and of BPA needing to merely change its policy and issue a supplemental EIS and ROD, illustrate why the Tribes often feel that BPA only pays "lip service" to its NEPA obligations. As emergency operations during 2001 have illustrated, "emergency" operation of the FCRPS has enormous environmental and cultural resource impacts. These unintended, but very real, consequences of emergency operations should be assessed, planned for, and mitigated. To the Tribes, these are not mere procedural niceties; they are steps necessary for federal agencies to fulfill their trust obligations to the Tribes.</p>	The commenter has been a solid and patient partner in BPA's efforts to work with the other Federal agencies to try and respond better to cultural resource needs and in a manner more acceptable to the tribes. These ongoing efforts help ensure that the multiple mandates for the FCRPS are met. Information regarding the emergency operations has been added to Chapter 2 in Section 2.3.2.3 of this EIS. Also, review Chapter 4 again for when necessary changes in policy happen unexpectedly.
39/47	The Spokane Tribe agrees with BPA's conclusion: "The form that governance takes is less important to the outcome than the degree to which the governing parties are able to act in concert." Still, the form is important to Tribes because any regional governance structure must provide for meaningful participation by Tribal governments in regional decision-	Governance is a very important regional issue: this is why we included it in this EIS. However, our analysis indicates that the environmental impacts will not be altered as a result of selecting a particular governance structure. We agree that meaningful tribal participation should be key to any governance structure.

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	making.	
39/48	It is not too late to convene a regional governing body comprising Federal, State and Tribal policy-makers, for the purpose of selecting a regional Policy Direction and assessing the environmental consequences.	The exact nature of a future governing body has been a controversial regional issue. While BPA would like to see quick resolution of this issue, it is doubtful that such agreement would occur in the next several months, which is the anticipated schedule for BPA's policy-level decision. In any event, as noted above, there is no correlation between governance and environmental consequences.
39/49	After countless discussions and comments, have the federal agencies not yet recognized <u>Tribal</u> Historic Preservation Officers? [Section 7.4] mentions only <i>State</i> Historic Preservation Officers.	BPA consults with THPOs and appreciates the knowledge and expertise they bring to the cultural resources preservation and mitigation efforts. See response to comment 39/50, below.
39/50	"This section also relies upon the 1991 Programmatic Agreement to address NHPA, AIRFA, and NAGRPA coverage for the federal action agencies Changes to the FCRPS trigger new cultural resource compliance obligations. Not only should this section of text be edited for accuracy, but also the action agencies need to consult with the Spokane Tribal Council and THPO regarding cultural resource protection obligations in FCRPS planning."	<p>The 1991 Programmatic Agreement is only one component of efforts that have been and will be made by BPA to comply with the NHPA, AIRFA, and NAGRPA. As discussed on p. 283 of the DEIS, appropriate Section 106 consultation will be conducted by BPA before taking any site-specific actions under the Policy Direction that is adopted through this EIS process. The discussion referenced by the commenter has been revised to clarify the tribe's role in the consultation process.</p> <p>We have revised Section 7.4 of this EIS to specifically acknowledge THPOs.</p>
39/51	<p>Sec. 5.1.2 describes "Optimum Conditions for Each River Use," derived from SOR analysis. Because the "optimum conditions" are used as baseline assumptions for deriving the ensuing "Generic Environmental Consequences," it is important to acknowledge the flaws in the baseline. For example:</p> <ul style="list-style-type: none"> * "Cultural Resources" "stable reservoirs year-round" is much too simplistic a description of optimum conditions.... * "Resident Fish" – "stable reservoirs year-round, with natural river flows" is a self-contradictory "optimum." ... * "Water Quality" – "natural river flows with minimum spill" might address some temperature and dissolved gas problems, yet also might exacerbate problems with suspended contaminants * "Wildlife" – "drawdown reservoirs 	Table 5.2-1: Optimum Conditions for Each River Use, and the corresponding text was not intended to represent a baseline. It was meant to be an illustration of showing how attempting to optimize one condition in a particular situation (intended effects) may lead to unintended effects (associated side effects).

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	year-round to expose maximum acreage for long-term habitat recovery" sounds optimum, but does not necessarily optimize conditions in areas denuded of native vegetation and depopulated of native wildlife populations.	
39/52	The DEIS is intended to have a very broad [EXCEEDINGLY BROAD] coverage. [Comment in brackets quoted from DEIS.]	See Umbrella Response regarding Tiered RODs.
39/53	[Comment responds to DEIS statement that "This document does not try to define such specific quantities [as numbers of hatcheries] for each Policy Direction."] YET, specific quantities are essential to meaningful environmental analysis. Removal of one dam does not equal removal of "some" dams in environmental effect. For example, removal of Hells Canyon would have vastly different environmental effects than removal of John Day. The scope of NEPA coverage must be refined before blanket authorization is granted to cover vast potential future actions under this "umbrella" EIS.	We agree that all dams are different and impacts would vary, depending upon which dam was removed. The focus of this EIS, however, is at the policy level. See Umbrella Response regarding Tiered RODs. We also appreciate the commenter's sincere effort to articulate the appropriate level of detail and analysis for a policy-level EIS. The difficulty for agencies and document reviewers alike is that there is no clear delineation between too little and too much generalization. With a project-specific EIS—such as an EIS on a specific hatchery or drawdown of a dam—only alternatives to the proposed action are typically examined. In a program-specific EIS, such as BPA's Wildlife Mitigation EIS, the scope was alternative ways to address wildlife mitigation, but overall policy concerns remained unanswered. With a policy-level EIS, such as this EIS or the Business Plan EIS, site- and program-specific detail is reduced, but a full Basinwide Strategy ("All-H") perspective becomes possible. Only a policy-level EIS can guide an agency's overall direction. And only program- or site-specific analysis provides on-the-ground impact analysis. BPA believes that in this instance its policy-level EISs, along with a strategy of Tiered RODs and Supplement Analyses that provide program- and site-specific impact analysis, provides more accurate information, and more opportunities for public involvement, especially for "real-time" decisions, than any other means of NEPA compliance.
39/54	In the hard-copy document, Table 5.2-1 refers to State water doctrines and laws. It should read "State <i>and Tribal</i> water doctrines and laws.	The text has been changed to reflect Federal, state, and tribal water doctrines and laws where applicable. Table 5.2-1 in the DEIS has been changed to Table 5.2-2 of this EIS.
39/55	In the hard-copy document, Table 5.2-2 refers to Effect of reservoirs built and normal operating range as "Amount of riverine habitat lost." Effect also should include <i>ecosystems transformed to quasi-lacustrine</i> .	The table has been changed to reflect these comments.

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	Also in Table 5.2-2, Effect of Operations for hydropower [etc.] should include <i>altered reservoir conditions</i> .	
39/56	The hard-copy document Section 5.2.2.3 "Fish and Wildlife" initially describes issues spanning fish and wildlife, broadly. But in the "Possible Mitigation Measures," the text reverts to describing mitigation only for ESA listed anadromous fish.	The "Possible Mitigation Measures" have been expanded to include mitigation measures for wildlife as well as fish.
39/57	The life-cycle diagrams in Figures 5-2 through 5-7 are useful summaries of major environmental effects. The relevance of the figures, and the connectivity of life cycle among and between ecosystem components, need to be brought back into the text of the analysis of environmental consequences.	The life-cycle diagrams have been modified to better summarize the effects from Section 5.2 of this EIS.
39/58	The hard-copy Section 5.2.3.1 provides an encouraging acknowledgement of air quality concerns due to dust blowing from exposed reservoir sediments.	Comment noted.
39/59	The hard-copy text at p.Draft/192 describes potential consequences on "Funding." At p.Draft/193 (as in several other places in the document) reference is made to mitigating the adverse effects of funding by "maximizing the effectiveness of fish and wildlife expenditures." This terminology needs to be explained. "Maximizing effectiveness" sounds very subjective and could be interpreted differently by different parties.	Maximizing cost-effectiveness provides the most fish and wildlife benefit per dollar of expenditure. See Sections 5.1, 5.2, and 5.3 for additional information and examples on costs.
39/60	Both the DREW and Framework processes were flawed, from the Spokane Tribe's perspective. Concerns of Tribes in the upper Columbia blocked area were not adequately included nor addressed. To use these previous analyses as underpinnings for current analysis is to build a new foundation upon sand. [Re: Increasing number and complexity of decisionmaking process; in Table5.2-14.]	See responses to comments 39/9 and 39/34.
39/61	[Re: Table 5.2-14 in the Tribal Effects subsection in Section 5.2, General Environmental Consequences of the EIS.] Lack of connectivity for cultural resources; emphases on either F&W or archaeology. - C.R. management issues	As discussed at the beginning of this subsection, it is intended to identify the general adverse effects of fish and wildlife declines on tribal members and communities. Thus, as correctly noted by the comment, the emphasis of this subsection (and more specifically Table 5.2-14 of the DEIS) is on how tribal interests are

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	remain unaddressed.	<p>affected by fish and wildlife-related human activities. General effects on cultural resources are discussed in the Cultural Resources subsection in Section 5.2. A comparative analysis of the environmental consequences of the Policy Directions on cultural resources is provided in Section 5.3, Cultural/Historic Resources of this EIS.</p> <p>Additional examples and clarifying information has been added to these Sections to assist the reader.</p> <p>BPA has addressed cultural resource issues at the policy level for purposes of this programmatic document. Once a Policy Direction from this document is selected, the implementing actions for that Policy Direction can be implemented under this EIS coverage. Site-specific analyses, including the identification of appropriate mitigation measures concerning cultural resources management, will be conducted before implementing actions are taken. See the Umbrella Response regarding Tiered RODs.</p>
39/62	[Re: mitigation measures listed in Section 5.2.3.2] Yes! NEPA coverage is not adequately updated by this broad F&W Implementation DEIS. Also need updated NHPA coverage. Cultural resources have not been addressed adequately in any previous NEPA reviews, nor in this DEIS.	Comment noted. Updated NEPA coverage is being provided by this EIS, as well as by the Tiered RODs and other NEPA documents that will be prepared for site-specific implementation actions as these actions are proposed.
39/63	[Re: mitigation measures listed in Section 5.2.3.2] YES! This is positive and useful. These "mitigation measures" are needed regardless which policy direction alternative is adopted.	Comment noted and considered in the public record for this EIS process.
39/64	[Re: mitigation measures listed in Section 5.2.3.2] ?? Namely ... ? How would any other entity successfully raise rates without encountering the same market forces encountered by BPA? And what other purchasing entity might be more responsive to Native American rights and needs?	The "Namely" (yet unknown) entity might be a new one. Any other entity would face the same market forces as BPA, but there is still flexibility in setting terms and conditions for service. The partnership between the Confederated Tribes of the Warm Springs Reservation and Portland General Electric for operation of PGE's Deschutes River projects is but one example.
39/65	[Re: mitigation measures listed in Section 5.2.3.2] ?? This is vague. Can BPA provide examples of possible outcomes of "re-evaluating priorities"?	These are possible mitigation measures. "Re-evaluating priorities" simply means that what is a priority today could change in the future. One of the fundamentals for preparing this EIS is to allow for the flexibility of re-evaluating priorities in the Region as necessary and when needed. See Chapter 4 for a description of re-evaluating decisions as time passes.

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39/66	[Re: mitigation measures listed in Section 5.2.3.2] YES - This should be done regardless of policy direction alternative chosen and regardless of NEPA analysis.	Comment noted and considered in the public record for this EIS process.
39/67	[Re: mitigation measures listed in Section 5.2.3.2] ? - what does [clarify] mean in this context?	The reference has been removed to avoid confusion.
39/68	The hard copy section on "Adverse Economic Effects from Declining Fish and Wildlife Populations," pp. Draft/200-202, warrants comment. This is useful exposition of economic concepts such as existence values and bequest values.	The comment has been noted and made part of the public record for this EIS. Also, see response to comment 29/48.
39/69	On p. Draft/202, a paragraph begins with the sentence: "Even with the uncertainty of measurement, most studies agree that ... economic value of lost uses is less than the non-use values." ??What does this mean? Can it be restated to provide a clearer conclusion?	The reference has been deleted in this EIS to avoid confusion.
39/70	Same page, in the paragraph concluding the discussion of economic terms, the text reads: "Regional citizens include Tribal members. ... Primary values are cultural, religious and subsistence. Fish and wildlife losses might reduce levels of self-sufficiency, perceptions of control, and tribal health. Tribal members also have economic interests in common with the larger non-Indian society" This paragraph is <i>very weak</i> on the <i>DEEP</i> significance to Tribes of lost fish and wildlife and cultural resources.	This text on page 202 is meant to summarize economic losses only. Tribal effects are discussed in more detail on (DEIS) pages 196 to 200. Further, refer to the analysis of tribal effects in Sections 5.2 and 5.3 in this EIS for additional information and examples.
39/71	This section [5.2.3.2, Cultural Resources and Aesthetics], unfortunately, reverts to the "stones and bones" perspective on cultural resources. To the Tribes, Cultural Resources include a clean environment, thriving fish and wildlife populations, and traditional lifeways and religious practices associated with the natural environment. Although Tribal perspectives are given brief coverage elsewhere in the document, this section on cultural resources should emphasize the points that Tribes have made repeatedly during discussions with BPA and other federal agencies. To limit the definition of cultural resources, and do	<p>The view of the tribes concerning what constitutes cultural resources is noted. For the purposes of this EIS, the term "cultural resources" refers to archaeological resources and identified traditional cultural properties. Tribal cultural values are addressed in the Tribal Effects subsection of this EIS. Information gathered by BPA in discussions with the tribes has been summarized primarily in the Tribal Effects subsection, 5.3, with this information also discussed in other sections of the EIS where appropriate.</p> <p>This EIS has been revised to provide separate discussions of cultural resources and aesthetics in Section 5.2, as suggested by the commenter. This makes Section 5.2 more consistent with Section 5.3 in this EIS.</p>

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	lump the topic into a brief section also covering "aesthetics," is to miss the point of the many heartfelt descriptions by Tribal elders and Tribal cultural representatives.	
39/72	Resume here the candor displayed in earlier sections. "Exposure and loss of cultural resources" is euphemistic. Speak clearly of exposing burials, destroying traditional gathering areas, causing desecration of sacred sites, decimating salmon populations that are the heart and soul of Tribal culture. If this EIS is truly to assess impacts, it must describe those impacts truthfully.	Comment noted. Sections 5.1, 5.2, and 5.3 have been revised to incorporate the possible impacts identified by the commenter, except for the impact on salmon populations. This impact is discussed in Section 5.2.2.3, Fish and Wildlife, Section 5.3.2.4, Fish and Wildlife, and Section 5.3.3.3, Tribes, of this EIS.
39/73	NOT TRUE! Many historic and cultural resources have been "planned" and "acted" into oblivion. This same tactic was adopted in the SOR EIS and its offspring, the "Reservoir Cooperating Groups." To truly mitigate for adverse impacts on cultural resources, the full range of four "H's" must be adapted to minimize impacts and maximize protection. It is not an easy task, but a necessary one.	The views of the commenter concerning general mitigation for historic and cultural resources are noted, and that discussion in this EIS has been revised. Bonneville intends to minimize impacts on and maximize protection of these resources to the greatest extent possible. Site-specific mitigation measures for historic and cultural resources will be identified as part of the environmental review conducted for the implementation actions of a selected Policy Direction (see Umbrella Response regarding Tiered RODs).
39/74	The following paragraph is far too sanitized to portray reality: [refers to paragraph on direct and indirect effects within a reservoir pool on non-structural archaeological deposits]	The opinion of the commenter is noted.
39/75	The hard-copy Figure 5-8, Habitat-Oriented Actions, describes as an Associated Side Effect on Humans the possible adverse effects of impact to Tribes' culture, health and spirituality, then cites "Compensation" as a "Mitigation Measure." This is insulting in its bare interpretation. It should be removed or rewritten.	The identification of compensation as mitigation for effects to tribal culture, health, and spirituality was not intended to be insulting. This mitigation was identified in the EIS because it has frequently proven to be acceptable to some Tribes in addressing tribal concerns regarding these types of impacts. However, it is acknowledged that other types of mitigation, such as those described in the Tribal Effects subsection of Section 5.2 of the EIS, could be adopted to address these impacts. See revised Figure 5-16 (formerly Figure 5-8).
39/76	Hard-copy Figure 5-9, Harvest-Oriented Actions, describes possible adverse effects on Tribes and cites as Mitigation Measures: "-Provide for treating fishing" and "Transfer some hatchery operations to tribes." These proposed mitigation measures do not ensure necessary subsistence, ceremonial, and recreational harvest for non-treaty Tribes. The same	Section 5.2 has been revised. See additional examples and information provided for the reader in Sections 5.2 and 5.3 of this EIS.

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	Figure 5-9 describes mitigating for possible "Impacts to cultural traditions associated with hunting and fishing" by "Federal and state subsidies." Where in the text is this mitigation concept more fully described?	
39/77	Hard-copy Figure 5-10, Hatchery-Oriented Actions, demonstrates a conceptual disconnect. "Possible adverse effects: - Disenfranchisement of tribes as resource managers; - Economic impacts; - Amount and type of fish available for tribal harvest; [and,] -Tribal trust and treaty rights." These possible effects simply are not addressed by the described "Mitigation measures: - Provide for treaty fishing; [and,] - Transfer some hatchery operations to tribes."	See revisions to Sections 5.2 and the referenced Figures in this EIS.
39/78	Hard-copy Figure 5-11, Hydro-Oriented Actions, demonstrates both a grasp of the Tribal perspective, and a misunderstanding. "Mitigation measures" for "Associated Side Effects" on "Tribes" <i>should</i> include "Modify hydro operations." "Mitigation measures for "Cultural and Historical Resources" must include much more than "Documentation and protection."	See revisions to Sections 5.2 and the referenced Figures in this EIS. See also the Umbrella Response regarding Tiered RODs for a discussion of the approach to providing more detailed evaluations of the implementing actions once they are proposed.
39/79	Section 5.2.4 "Context and Intensity of Policy Directions" provides interesting analysis. To this reader, it is unclear how the analysis of effects incorporates possible mitigation measures. Can this be described in the text, in proximity to the analysis?	Figures 5-21 to 5-25 in Section 5.2.4 of the DEIS were not analyses of potential environmental effects, either before or after mitigation. These figures have been deleted in this EIS to avoid confusion.
39/80	[Regarding statement on environmental consequences tables: "Short-term effects will be examined in greater detail in future project-specific tiered RODs."] NEED MORE DETAILS!	This EIS provides a policy-level analysis of potential environmental impacts; for that reason the analysis in this EIS is inherently general. Once a Policy Direction from this document is selected and implementing actions for that Direction are proposed, more detailed analyses will be conducted before these implementing actions are carried out demonstrating the connection back to the policy-level analysis. See also the Umbrella Response regarding Tiered RODs.
39/81	Although the credentials and capabilities of these panel members are acknowledged, another panel should be convened, to include multiple disciplines from Tribes. Better yet, this analysis should be directed by Federal, State and	We appreciate the importance of this comment to adequate analysis. BPA's multi-disciplinary review group relied on resources from Federal, State, and Tribal policy-makers in the impact analysis. Also, see the additional examples and clarifying information in 5.1, 5.2, and 5.3 of this EIS.

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	Tribal policymakers through the Columbia Basin Forum.	
39/82	Need more information on individual components to make analysis of relationships meaningful.	Please see Umbrella Response regarding Tiered RODs, the response to comment 39/53, and the changes to Section 5.2 in this EIS.
39/83	This intent is achievable without minute level of detail, but cannot be accomplished credibly without more detail than has been incorporated to date. There is a minimum threshold of detail needed to make the environmental analysis meaningful. The Draft EIS is, at this point, too sketchy to provide true analysis of impacts.	Please see Umbrella Response regarding Tiered RODs, the response to comment 39/53, and the additions to Section 5.3 of this EIS.
39/84	For many actions, this step would be too little too late. More information is needed now, BEFORE selecting a policy direction.	See response to previous comment.
39/85	SOR was flawed as to cultural resources analysis, and not thorough as to fish, wildlife, water and the environment. SOR should not be relied upon. Conditions and management strategies have changed significantly since SOR RODs were entered.	The opinion of the commenter regarding the SOR EIS is noted. BPA has long been aware of the commenter's dissatisfaction with the SOR analysis. Although there have been changes in conditions and management approaches since the ROD was signed for the SOR EIS, the SOR EIS is still a very useful document that provides valuable data. Thus, the SOR EIS was used as an information resource for the environmental analysis in this EIS, along with the many other environmental documents incorporated by reference that are listed in Chapter 1 of this EIS (see response to comment 39/20).
39/86	Tribal participation in these NEPA processes was minimal. The Spokane Tribe's/UCUT's interests were not protected in these processes and the NEPA documents do not adequately represent the range of environmental and cultural resource impacts.	The commenter's opinions concerning the various environmental documents that were incorporated by reference into this EIS and tribal participation in the NEPA processes for those documents are noted. For this EIS, tribal participation has been actively pursued and encouraged, and BPA has attempted to continue the ongoing dialogue with the tribes to help identify possible effects on tribal and cultural resources from regional fish and wildlife mitigation and recovery efforts.
39/87	THIS IS CONFUSING. Do the federal agencies want to dispense with SOR as NEPA coverage? Or retain it? Or retain what's useful to agency decision-making, but discard the remainder? With adoption of new Biological Opinions, the hydrosystem operating regime is changed. SOR environmental analysis was inadequate even for the times and operations SOR encompassed. We	As discussed on pages 225-226 of the Draft EIS, this EIS will not replace or dispense with the SOR, which focused on hydrosystem operations. Instead, the ROD for this EIS provides a policy for actions beyond just hydrosystem operations (and thus actions outside of the scope of the SOR), including habitat, harvest, and hatchery actions. The relationship of this EIS to hydrosystem operations under the SOR, as modified by recent BiOps, will be determined by the Policy Direction(s) BPA and the others in the Region are

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	question the tiering of any current and future fish and wildlife decision-making based on SOR NEPA coverage.	<p>following at any given time.</p> <p>The commenter's opinion concerning the SOR EIS is noted. As discussed in responses to comments 39/20 and 39/85, the SOR EIS is a very useful document that provides valuable data and information that is relevant to the analysis of possible policy directions for regional fish and wildlife mitigation and recovery efforts contained in this EIS.</p> <p>BPA has not proposed tiering this EIS or any other decisionmaking process to the SOR EIS, as suggested by the commenter. Instead, the SOR EIS was used as an information resource for the environmental analysis in this EIS, and relevant information from the SOR EIS has been incorporated by reference into this EIS.</p>
39/88	This belief may be flawed. [Refers to belief that qualitative rankings will serve as a realistic reflection of results from other sources.]	See the Umbrella Response regarding Qualitative versus Quantitative Effects.
39/89	In hard-copy Table 5.3-5B, the claim in the first row labeled "Existing Conditions," should be clarified or expanded in a footnote. The complex formula used to derive annual losses from F&W actions should be summarized to raise readers' awareness.	Additional examples and clarifying information can be found in Section 5.3 of this EIS. Over 600 footnotes have been added to better inform the reader and direct them where to find more detailed information.
39/90	The brief text on pp. Draft/249-250 should be expanded to highlight that an assumption of no negative effects from environmental degradation (under Commerce Policy Direction) would be a ludicrous assumption.	See revisions to Section 5.3 of this EIS.
39/91	The following section is better than previous sections in getting to the heart of Tribal issues: [Refers to summary of effects section for 5.3.3.2 Tribes.]	The comment has been noted.
39/92	The hard copy document inserts Section 5.3.3.3 "Costs and Funding" here. Probably better to have Cultural/Historical Resources follow directly after TRIBES: Health, Spirituality and Tradition.	The order has been changed in Section 5.3 of this EIS.
39/93	Again, the "moving target" of this environmental analysis raises concerns about the scope and breadth of NEPA coverage. The validity of such a broad-sweep NEPA "analysis" is questionable.	The concern of the commenter has been noted as in several previous comments. See Umbrella Responses regarding Tiered RODs, Scope, and Reason for the EIS.
39/94	Due to the inadequate time frame in which to consider and respond to this	See response to comment 3/1 regarding the time allowed for public comment on the Draft EIS. See the Umbrella

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	Appendix, no comments can be submitted at this time. There has been no opportunity to fully brief the Tribal Council, with appropriate levels of input from technical staff. Also, overly simplistic assumptions underlying the development of alternatives can lead to seriously flawed analysis.	Response regarding Tiered RODs for information concerning the adequacy of the analysis.
40/1	Idaho water users support salmon recovery but believe, as set out in the enclosed document, the use of water from the Upper Snake River for flow augmentation is not a viable alternative to aid the listed species. ... We believe science does not support continuing, or increasing, the demand for augmentation water from the Upper Snake River Basin in the name of recovery of listed species or mitigation for impacts of the FCRPS on the listed species.	<p>BPA has noted the comment and reviewed the submitted analysis:</p> <p>A REVIEW OF "FALLACY OF FLOW AUGMENTATION... There is no need to drain Idaho for salmon."</p> <p>The following notes are a review of salient components used in the above paper to support the conclusions</p> <ol style="list-style-type: none"> IWU reviews the hydrology of the basins and assert that flows in the Snake and Columbia River have not changed over the past 100 years. This is generally true: the average annual discharge has not changed dramatically at the estuary. However, there have certainly been dramatic changes in the use and control of water flows over the same time period. IWU reviews evidence whether flow augmentation provides enhanced survival of juvenile migrating salmon. The evidence for spring chinook suggests that in-river migrants survive passage through lower Snake River dams about 10% better in years of higher flow than lower flow. Examination of acute survival rates within a season provide no evidence that week-to-week survivals can be enhanced using flow augmentation. This is the strongest evidence against the idea that flow augmentation provides benefit. There are many other "environmental correlates" that are used to "explain" survival including temperature, turbidity, predator activity, spill, gas (TDG), velocity, timing, and so on; however, none can simply account for a cause and effect explanation. It appears that the crux of the matter is what happens at the concrete dams and spillways. The hydraulic behavior of the river and the fish at the dams is highly dependent on discharge and on subsequent operation of spill, turbines and fish passage facilities that are all woven together. Thus, flow is inextricably woven into the equation. It appears that when large volumes of water move through the dams, downstream migration and passage is enhanced. However, it also is difficult to hydraulically create these conditions using storage in a low flow year: there is simply not enough water to do it (Olsen et al., 1998). Further, it appears that the ultimate consequence of adult returns is most

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		<p>heavily (although not exclusively) contingent upon ocean conditions, which have little to do with freshwater conditions.</p> <p>3. Fall chinook may have different but related problems to spring chinook in the Snake. Migrating even later than spring chinook, these fish are subject to even lower flows and poorer water quality in the heart of the irrigation season, particularly in a low flow year. Combined with the same difficult hydraulics at the Lower Snake River dams as spring chinook find, finding the exit may be an even bigger problem, as flows in the summer can be so low that it is like finding a needle in a haystack when only one generator is operating. The fish must then contend with poor water quality and predators in the reservoir. Flow indeed may be more of a solution for fall chinook, not to flush them, but to potentially enhance collection into barges for transport.</p> <p>4. Transportation is indeed building a record of better adult returns in the Snake River compared to in-river. IWU rightly point out this may be the most cost-effective solution to the entire problem, especially in a low flow year.</p> <p>5. IWU points out that harvest and hatcheries and habitat are significant parts of the recovery equation and data exist to support their contention. IWU strongly supports improvements in the four H's including transportation, dam operations, and the other three H's.</p> <p>6. The economic impact on Idaho from depriving agriculture of water currently allocated for that purpose and using it for fish recovery runs into hundreds of millions of dollars. They contend the Bureau has underestimated the impacts, but the impacts of both estimates are in the same order of magnitudes. Their basic argument is to use more cost-effective tools for recovery.</p>
40/2	We ask that you consider the analysis provided in the enclosed document as you prepare your final EIS and take the opportunity to reject continued demands for Upper Snake flow augmentation because of its ineffectiveness as a means to aid listed species and its high societal cost and divisiveness.	Please see response to previous comment above. Also, note the varying opinions regarding these issues throughout the comments in this Appendix.
41/1	The [Kootenai] Tribal Council requests and invites BPA to schedule a government-to-government meeting pursuant to its trust responsibility and duty to consult on matters affecting the	Contact with the many tribes within the BPA service territory has been maintained through BPA's Tribal Liaisons. Contacts and meetings are done on an ongoing basis. The EIS team members have worked with the Tribal Liaisons as needed. On August 30,

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	Tribe. Specifically, the Tribal Council requests the BPA to explain the Plan and how it will affect the Tribe and its members.	2002, a meeting to specifically discuss the Implementation Plan associated with the 2000 BiOps was held with the Salish-Kootenai Tribes, as well as a meeting on September 9, 2002, with the Upper Columbia United Tribes.
42/1	The draft EIS, however, states that BPA will not select one of the policy directions presented in the EIS for fish and wildlife mitigation and recovery because this decision is largely outside of its jurisdiction. EPA believes that the information in this document should not be presented in an EIS because BPA does not intend to select a policy direction presented as an alternative.	The DEIS noted that BPA is not " <i>unilaterally selecting a Policy Direction for the region.</i> " BPA has always intended to select an alternative to support BPA's fish and wildlife mitigation and recovery actions (see discussion in Chapter 1, page 6.) BPA has developed a Preferred Alternative (PA 2002) from among the range of Policy Directions in the DEIS. The preferred alternative is identified and analyzed in this FEIS (see Chapter 3). The initial ROD that BPA will prepare will specify BPA's selected alternative. However, as discussed in this EIS, the decision about the preferred alternative will be for BPA alone, and not for other regional entities. This EIS is thus an appropriate document for analyzing the range of reasonable alternatives and for providing a basis for BPA to select a Policy Direction now and for changing that Policy Direction in the future as events dictate the need for change. BPA is working hard, through its implementation of the NMFS and USFWS BiOps, and the Council's Fish and Wildlife Program, to facilitate a unified fish and wildlife mitigation and recovery policy. The timing and ultimate success of that effort is uncertain. In any event, BPA is obligated to fund and implement fish and wildlife mitigation and recovery actions before, during, and after these policy-level deliberations. BPA also has a statutory obligation to understand the environmental consequences of its actions and provide an opportunity for the public to participate in agency decisionmaking. Therefore, if the Region fails to agree upon a Policy Direction, BPA must still implement and fund a fish and wildlife mitigation and recovery effort strategy. This EIS is designed to meet the immediate and future needs of agency decisionmakers and the public for information regarding the impacts of mitigation and recovery actions proposed for implementation by BPA.
42/2	The non-decisional nature of the document forces us to conclude that ... agencies with jurisdiction in the Columbia River Basin should not tier subbasin fish and wildlife recovery plans to this EIS in order to comply with the 2000 Biological Opinion for the Federal Columbia River Power System.	As explained above, BPA believes that this document will serve as an important resource upon which to tier future site-specific decisions. We note, however, that the subbasin and recovery plans will not be tiered to this EIS, but the NEPA compliance documents prepared to implement them may be tiered to this EIS. Although we believe that the EIS could have useful applications for other agencies, we encourage them to reach their own conclusions.

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42/3	Some broad policy directions presented as alternatives in the EIS might be inconsistent with ... environmental laws and policies. The EIS ... should state <i>how</i> ... alternatives considered will or will not achieve the requirements of environmental laws and policies. Moreover, EPA will raise environmental objections to any final EIS that identifies a preferred alternative that is inconsistent with environmental laws.	See Umbrella Response regarding Scope. One purpose, which will become a decision factor in the ROD, is to fulfill obligations under other applicable laws including ESA and CWA (see Chapter 1 for Purposes). The DEIS noted on page 102 that "There are certain laws that an alternative must meet to be viable.... But this is a forward looking policy-level DEIS. As such, BPA has not limited the analysis to existing conditions or legal authorities." Also, in further discussions with the EPA since the DEIS, BPA's EIS team members have provided additional opportunities to better understand the nature of this unique policy-level EIS methodology.
42/4	The EIS should ... clearly state why the proposed BPA Plan is necessary when the Northwest Power Planning Council's Fish and Wildlife Plan is already up and running.	It is well established in the Regional Act, its legislative history, and related judicial decisions, that the Council cannot bind or control BPA. The Council is a valued guide in the business of fish and wildlife mitigation, but the ultimate decisions of what policies to adopt and actions to take are within the Administrator's discretion. Moreover, while the Regional Act addresses one very important class of BPA obligations, BPA also has others, under the ESA for example, that the Program has not always anticipated. Also see the PA 2002 description and use of regional guidance in its analysis in Chapter 3. Ultimately this EIS provides the programmatic NEPA compliance for implementation of the Council's program.
42/5	The EIS should also discuss BPA's Clean Water Act (CWA) responsibilities which indirectly support fish by protecting beneficial uses such as cold water biota. The EIS should list BPA's responsibilities under CWA.	See the Umbrella Response regarding the Clean Water Act for a discussion of BPA's responsibilities under the CWA. The DEIS noted BPA's obligations and responsibilities under the CWA. In fact, fulfilling those responsibilities is one of the purposes. Also, see CWA discussion in Chapter 2 of this EIS.
42/6	The title of the EIS is vague.... The EIS should be renamed "Fish and Wildlife Mitigation Recovery Plan" to more accurately reflect the plan's purpose and need.	The opinion of the commenter is noted. However, the name of the EIS has not been changed, in part, to avoid potential confusion from changing this EIS's name from draft to final. Also, the focus of the EIS is BPA's <i>implementation</i> of fish and wildlife mitigation and recovery efforts.
42/7	The draft EIS states that hydrosystem operation requirements for salmon recovery efforts have reduced power generation in the region by about 1,000 megawatts. Is this statement true today?	Yes. And the cost to BPA from that fish mitigation is typically in the hundreds of millions of dollars.
42/8	The EIS should explain why it is analyzing and planning mitigation and recovery options in the absence of recovery plans.	We understand the comment to refer to recovery plans developed by NOAA Fisheries (NMFS) and the U.S. Fish and Wildlife Service for species listed as threatened or endangered under the Endangered Species Act (ESA). The ESA calls for Federal agencies to utilize their authorities by carrying out programs for the conservation of listed species, and the NMFS FCRPS

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		<p>BiOp encourages the recovery of listed anadromous fish. Consequently, BPA intends to contribute to efforts enabling recovery of listed fish even in the absence of recovery plans. BPA can revise particular measures as appropriate to be consistent with these plans. However, based on our observations and experience, we do not expect recovery plans to call for kinds of actions that are new, unique, or substantially different from what has already been proposed through the Framework and section 7 ESA processes.</p> <p>More generally, see Umbrella Response regarding Tiered RODs; also refer to the Implementation Plan discussion in Chapter 2 of this EIS. This policy-level analysis allows BPA to proactively examine alternatives and their respective impacts before making decisions. The alternatives cover a number of key issues that need addressing to provide mitigation and aid recovery of fish and wildlife</p>
42/9	The draft EIS describes the functions of the EIS We recommend that the EIS use the more conventional framework described in NEPA regulations at 40 CFR 1502.10.	The recommendation of the commenter is noted. NEPA allows flexibility in the format of an EIS, so long as the EIS contains the required elements identified in 40 CFR 1502.10. This EIS contains all of these required elements, and thus complies with NEPA. In addition, BPA believes that the format used in this EIS makes it more readable. The EIS contains additional information beyond that required by 40 CFR 1502.10 in order to help readers better understand the situation faced by the Region concerning regional fish and wildlife mitigation and recovery and to be more comprehensive on the important related issues.
42/10	We believe limiting exports of power to regions outside the northwest would help ... avoid or minimize impacts to fish and wildlife species from dam operations and the construction and operation of more extensive electrical grid systems while keeping affordable power available for customers inside the Pacific Northwest.	As discussed in the EIS, BPA sells only <i>surplus</i> power to other regions—i.e., power at certain times of the year that is not necessary to serve Pacific Northwest customers, but is needed (often desperately) elsewhere. These sales of surplus power are conducted in accordance with BPA's enabling legislation, including the Federal Columbia River Transmission System Act (16 U.S.C. § 838 et. Seq.) and the Pacific Northwest Consumer Power Preference Act (16 U.S.C. § 837 et. Seq.). Furthermore, regardless of sales of surplus power, BPA has met and will continue to meet its obligations to fish. Power exports raise funds that are often used to help with fish and wildlife mitigation and recovery efforts, and power exchanges allow for water management to benefit fish.
42/11	The Council's Multi-Species Framework Project is [a] more balanced and comprehensive approach than what?	As noted in the text, the Framework was tasked with addressing fish and wildlife recovery and mitigation for multiple species (not just ESA-listed species), exploring alternative long-term visions for the river, and preparing

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		a report on the process. This "big-picture" approach was a change from earlier approaches and the information from that process was used in the Council's revision of the Fish and Wildlife Program.
42/12	The draft EIS should quantify the increase in in-river juvenile salmonid survival and increases in resident fish populations commensurate with the stated and quantified monetary amounts spent on fish and wildlife conservation and the percentage breakdown of money spent on anadromous fish.	Such information is very difficult to compile because important data resides in many different entities and the cause and effect relationships are not agreed upon. To the extent such information is available, we have referenced it in the EIS. For instance, in Chapter 2 we cite the Council's Second Annual Report to the Northwest Governors on Expenditures of the BPA. This report identifies how BPA has spent its mitigation funds over the last 20 years. Moreover, BPA has found NEPA does not require of the level of cost-effectiveness analysis recommended in this comment, nor do we see any means to determine such a ratio in this instance, as BPA would be unable to assess the degree to which current expenditures have slowed species declines or increased their recovery rates. Please review Chapter 2 for the myriad of policy choices, actions, and events that affect mitigation and recovery. Some of the sources of mortality, such as ocean and climatic conditions, may single-handedly overwhelm any human efforts to ensure full mitigation and recovery of all species of concern. Moreover, the use of Tiered RODs will bring clarifying detail to this policy-level analysis when it is more appropriate and necessary such as during the time specific projects are selected for fish and wildlife mitigation and recovery.
42/13	The draft EIS states that BPA will not identify a preferred alternative until it prepares the final EIS. This ... seems in conflict with a stated function of the EIS on page S-v which is to identify a specific path that will most likely be taken.	The comment has been noted. CEQ regulations do not require a DEIS to identify a preferred alternative; identification of this alternative is not required until the FEIS. BPA has identified its preferred alternative (the PA 2002) in the FEIS. BPA stands by the soundness of its reasoning not to have included one in the DEIS. Regarding the functions of this EIS, the commenter is referencing a discussion drawn from Chapter 1, "Purpose and Need for Action" of this EIS. This discussion was intended to identify the functions of the EIS as a whole, rather than just the DEIS. This discussion and the summary have been revised to clarify this intent.
42/14	We recommend that the EIS list dam removal as a mitigation measure for hydro generation in the status quo alternative since it might be necessary to meet water quality standards for total dissolved gas and temperature.	Dam removal would not be consistent with the Status Quo alternative. However, some of the Policy Directions include dam removal is The environmental impacts of dam removal, including water quality impacts, have been analyzed.
42/15	Mitigation for terrestrial habitat may now also include finding lands to replace	This EIS focuses on BPA's responsibilities to protect, mitigate, and enhance fish and wildlife adversely

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	habitat lost to recent transmission line and thermal power plant construction.	affected by the construction and operation of the FCRPS. Many of the types of habitat actions analyzed in the EIS could be taken as mitigation for impacts from transmission line construction or thermal power plant generation. Information from Sections 5.2 and 5.3 on the environmental impacts of those habitat actions could be incorporated into the site specific analyses prepared for those construction documents. We note, however, that mitigation for transmission lines and thermal plants is not part of the Council's Program, the Implementation Plan, or the BiOps addressed here; therefore, this comment is beyond the scope of intended use of this EIS.
42/16	The EIS should identify the criteria and information that the data and Tables S-2 and S-3 are based upon.	The tables identified are summary tables. The supporting information requested was in the body of the DEIS. As stated, the requested information is provided in Chapter 3 and Chapter 5, especially Section 5.3, of this EIS.
42/17	The EIS should incorporate the energy conservation component [of the NPPA] into this EIS	The energy conservation component is included in the Sample Implementation Actions (now Volume 3 of this EIS). BPA considered energy conservation (along with generating resources) in its Resource Programs and Business Plan EISs. That information has been incorporated by reference in this EIS.
42/18	We are concerned about a purpose of the draft EIS state on page 8 of adopting a flexible fish and wildlife strategy. ... EPA believes that the power production should accommodate fish and wildlife protection because power can be imported from other sources more easily than transplanting fish, wildlife, and their habitats.	The comment is noted. The EIS is a public policy document. A flexible fish and wildlife policy was suggested by former Vice-President Gore (see Appendix A). The Fish and Wildlife Funding Principles were reviewed by CEQ and the Office of Management and Budget and determined to be consistent with the then Administration's principles and priorities. A flexible strategy is just one of 7 principles that BPA must consider in its fish and wildlife funding process. When you review Chapter 2, you will see the variety of elements that affect fish and wildlife populations and the huge fluctuations in weather, market conditions, and national policies that shape the arena in which BPA operates. Without the flexibility to tailor our fish and wildlife efforts to these circumstances, we jeopardize our ability to have a stable, predictable, and effective mitigation and recovery effort. BPA has flexible strategies for its other major program areas: power and transmission. Having a flexible strategy for fish and wildlife mitigation and recovery is consistent with our overall business plan. Following the recommendation in this comment could violate BPA's other statutory mandates regarding the marketing of power.
42/19	We recommend that the EIS date documents incorporated by reference to indicate how current is the information	Please see Section 1.3.3 and the References section of this EIS.

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	found within them.	
43/1	There is no mention of the Owyhee Dam which completely blocked anadromous runs up the Owyhee River system. ... The most important comment the Shoshone-Paiute Tribes can make is this document seems to end at the Hells Canyon Complex and does not include the Owyhee Dam.	Owyhee Dam is a Bureau of Reclamation project; the project is not within the FCRPS. The Owyhee Dam project purposes were irrigation and power for irrigators. The Hells Canyon complex, constructed in 1967, blocks anadromous fish from reaching the Owyhee River. BPA believes mitigation for Owyhee and the Hells Canyon Complex is not a ratepayer responsibility.
43/2	There needs to be discussion of private and federal agencies that are doing irreparable damage to the system ... These agencies need to be held accountable for their actions that have detrimental impacts on the system.	The cited damages are outside the scope of this EIS. Nevertheless, they are discussed in Chapter 2, where relevant.
43/3	To our knowledge the Shoshone-Paiute Tribes do not have fishing and hunting rights, nor have we been compensated for those lost rights.	The comment has been noted. We have edited this EIS accordingly.
43/4	The statement ... "Some upriver Tribes have less of an interest in salmon than they once did....". ... is false. The Shoshone-Paiute Tribes have a great interest in salmon and steelhead. Anadromous fish are an important part of our culture, which has been taken away from us.	The comment has been noted. See response to comment 39/25 above. The text has been modified to reflect the concept that the interest in salmon has not diminished.
43/5	Cultural resources are more than specific places. Cultural resources to the Shoshone-Paiute Tribes includes land, water, air, birds, fish, everything that mother earth has produced and provided for our Tribes are Culturally important to the Shoshone-Paiute Tribes. Also, many sacred sites of ancestor's burial locations, ceremony locations, and hunting and fishing areas are also very important to our Tribes.	The reminder in this comment has been noted. Text will be added. Also see response to comment 39/2.
43/6	[Regarding Draft Appendix F]: What is the intention of this article in the Draft EIS? The article discusses how there needs to be a natural cycle for salmon and steelhead, however, there is no such thing as "Natural" anymore.	For a complete look at the fish mitigation and recovery issues, we thought it was important to include the possible influences of the ocean. The information included in Appendix F was to help the reader understand the possible influence of global warming and ocean conditions on salmon. We have provided a better overall article in this EIS.
43/7	The Shoshone-Paiute Tribes would like to see a list of the species produced along with list of hatcheries.	A full list of all species is beyond the scope of this section. The list of hatcheries was intended to demonstrate that there are a large number of hatcheries; it was not intended to be all-inclusive. The hatcheries

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		are continually changing over time in number and sometimes in what types of fish they are producing. We have noted, as in the Draft EIS, whether the hatcheries are for producing anadromous, resident, or mixed fish.
43/8	The hatchery list is incomplete, because it does not include private and non-Federal hatcheries. It lists hatcheries that are no longer operating and fails to mention hatcheries in the planning and construction phases.	See the response to comment 43/7 above. We have reviewed the list again for accuracy. The list of hatcheries is likely to change continually over time. Our objective was to show the vast number hatcheries carried on our database with the help of many other sources as noted in the Appendix.
43/9	[Re: Appendix G]: What is meant by BPA Funds major or minor? How much is major funds from BPA?	The objective of noting "major" and "minor" was to illustrate whether BPA was a substantial contributor to the project or just one of several involved in a particular project. As can be seen by the long list of hatcheries, BPA has been substantially involved in the Region's fish and wildlife recovery efforts through hatchery projects. There was no specific line drawn to establish a major and minor difference other than to demonstrate that many others have taken a role to help in the hatchery operations.
43/10	This document, like many others completely excludes much of the historic spawning areas for native anadromous fish.	A map has been added to show the historic information about anadromous fish. See Figure 2-17.
43/11	The document talks about wanting water from the Upper Snake River Basin however there is no talk of compensation, restoration of historic fish runs, dam modifications, consultation, or collaboration with the entities in the Upper Snake to help the dwindling fish runs downstream.	See response to comment 43/1 above.
43/12	The Federal Government has a trust responsibility to our [Shoshone-Paiute] Tribes to consult with our elected officials concerning any actions that may take place under these two documents.	BPA will continue to follow its Tribal Policy and consult with the tribes when we propose to take actions that will affect tribal lands. BPA also values its good relationship with the Shoshone-Paiute Tribes.
43/13	The Tribes would also like to see highest priority given to areas above "blockages" as was the original intent in the 1994 Power Act amendment. These are the areas that have suffered the greatest losses.	The comment has been noted. BPA will continue its Regional Act mitigation in a manner consistent with the goals and biological objectives of the Council's Program.
44/1	The Four Governor's Agreement is hereby incorporated into the State's comment by reference.	The Four Governor's Agreement is incorporated by reference into this EIS. See Preferred Alternative (PA 2002) in Chapter 3, Appendix I, and the Sample Implementation Actions in Volume 3 in this EIS.
44/2	At the outset, Idaho takes issue with the use of the term "status quo" as it connotes	Comment noted. The commenter is referencing the EIS's use of the term "Status Quo" to describe an

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	that nothing has been done to promote recovery in the FCRPS or the other H's.	alternative made up of components of the five basic Policy Directions identified in the EIS. As discussed on pages 108-111 of the Draft EIS, the Status Quo Policy Direction would involve a continuation of the policy direction that the Region appeared to be following at the time this EIS was drafted. Section 2.3, Policy Evolution, summarizes many of the recovery policies that the Region has recently been following. Rather than suggesting that nothing has been done to promote fish and wildlife recovery, the Status Quo Policy Direction indicates that there are existing policies in place to promote recovery, and that the Region would continue recovery efforts based on these policies without a coordinated Federal, state, and tribal process.
44/3	There is tremendous diversity among fish and wildlife populations in the Columbia River Basin Therefore, a one-size-fits all approach may be ill-advised. Idaho supports the subbasin planning approach to identify priorities on a smaller and more informed scale.	BPA acknowledges Idaho's preference for a subbasin planning approach. See Umbrella Responses regarding Preferences and Tiered RODs.
44/4	The Fish and Wildlife Implementation Plan should account for existing State fish and wildlife agency laws and policies.	We agree. See also Umbrella Responses regarding Tiered RODs and Scope.
44/5	The IDFG policy direction for anadromous fish and resident fish and wildlife affected by the FCRPS is spelled out in the IDFG Report to the Director, <i>Idaho's Anadromous Fish Stocks: Their Status and Recovery Options (IDFG 1998)</i> ; in fisheries management plans (IDFG 1992, 2001a); and in subbasin summaries. IDFG's overall fisheries goal is to restore and maintain wild native populations and habitats of resident and anadromous fish to preserve genetic integrity, ensure species and population viability, and provide sport fishing and aesthetic benefits (draft Salmon Subbasin Summary, 2001). The anadromous fish goal is to recover wild Snake River salmon and steelhead populations and restore productive salmon and steelhead fisheries (IDFG 1998).	This document was reviewed and actions were added to the Sample Implementation Actions (Volume 3).
44/6	Given the current status of the law, choosing amongst and implementing the varying policy themes as they are described in the DEIS is prohibited. BPA cannot adopt any one of the five policy directions in its pure form. As a result,	BPA also does not anticipate a major policy shift. However, a "Policy Direction represents a shift toward one of the themes with more actions and more intensive actions taken consistent with that theme..." DEIS p. 101. Consistent with its obligations under NEPA, BPA has evaluated a range of reasonable policy

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	BPA is necessarily forced to mix and match elements of each of the different policy directions, which is precisely what has been done in the past under the "status quo" alternative Hence, the State does not anticipate a major policy shift resulting from finalization of the DEIS.	alternatives in this EIS to ensure informed decisionmaking regarding a policy direction. Further, BPA hopes that its adoption of a Policy Direction will help further regional coordination in fish and wildlife mitigation and recovery efforts, which have been lacking. Also, BPA recognizes that it likely would need to mix and match certain elements of the Policy Directions analyzed in the EIS according to unique circumstances within each basin or subbasin and other factors. This recognition is reflected in the identification in this Final EIS of the Preferred Alternative, PA 2002, which is essentially a blend of the Weak Stock Focus and Sustainable Use Focus Policy Directions. See Umbrella Responses regarding Scope and Hybrid Alternatives. Also, see the Reader's Guide at the beginning of this EIS.
44/7	A major criticism of the DEIS is that alternative Policy Directions were artificially constructed by grouping actions according to "themes" to define directions ..., rather than by first defining goals/objectives and then selecting actions to achieve them. The comparisons of relative effectiveness of Policy Directions are also questionable or premature, because the actions and intensity of the actions are generally not established at this time (ES-xvi).	The commenter is correct in that BPA artificially constructed policy direction "themes." It was our intent in this EIS to capture the several different underlying themes being put forth throughout the Region in numerous processes and forums. As we have admitted to in this EIS, there are many different ways to define the five basic Policy Directions. BPA has defined the five Policy Directions described in Chapter 3 to ensure the Region was well aware of how BPA has defined them. We do not believe that BPA has the authority to define the goals, objectives, or values for the whole Region. BPA will set forth in its decision(s) based on this EIS how such goals and objectives are considered. As for the question over the intensity of actions, see the Umbrella Response regarding Tiered RODs for insight into this issue.
44/8	Until the actions and their intensity are better defined, it is unlikely that decision makers can "readily compare effects and likely outcomes/ consequences" of the alternative Policy Directions (ES-xxii).	See Umbrella Response regarding Tiered RODs. BPA expects the connection of the policy-level decisions to the site-specific decisions to enhance the public's, as well as BPA's, understanding of how the different pieces of the fish and wildlife mitigation and recovery effort fit together.
44/9	The DEIS is only partially successful in grouping actions according to themes as Policy Directions, and we note important inconsistencies and shortcomings in the comparisons.... Actions in the hydrosystem, harvest, habitat and hatchery areas are not necessarily consistent with a theme's title, or the general effects projected.	There are many ways to define Policy Directions as we noted in comment 44/7 above. The way the commenter chooses to define weak stocks is also a possibility. Between the Draft and Final EIS, the entire analysis has been re-examined for consistency, and appropriate changes have been made. The reader is encouraged to refer to the definitions of the Policy Directions in Chapter 3 and the Sample Implementation Actions in Volume 3.
44/10	Some purported "trade-offs" among alternatives are counter-intuitive because the tables fail to show projected response	See changes to summary Table 3.3-1 in Chapter 3 and Section 5.3 in Chapter 5.

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	of natural and hatchery anadromous stocks or resident native and non-native fish separately.... It would be appropriate to include more detail about fish and wildlife trade-offs among the alternatives given this is a Fish and Wildlife Implementation Plan.	
44/11	Figures 2.6, 2.10, 2.13 and 2.14 do not show the correct information in relation to Idaho.	The figures noted, as well as the other map figures, have been updated and references added to provide the reader the applicable data.
44/12	These inaccuracies may be indicative of other oversights in the document. We suggest a thorough review of Idaho-related information in the DEIS to ensure it is accurate and representative.	All Idaho-related information has been re-examined for accuracy.
44/13	Idaho believes that the Plan for Analyzing and Testing Hypotheses (PATH) is one example of a useful process for testing hypotheses.	Comment noted. See comments 18/13 and 31/3 for a contrary point of view.
44/14	Concern remains about spill as a long-term primary recovery action. ... The use of spill should be improved, experiments testing spill benefits should be expanded and the effects to juvenile fish survival should be monitored and evaluated. Spill should also be considered within the context of proposed hydro-dam facilities....	These actions appear in the Sample Implementation Actions (now Volume 3 of this EIS).
44/15	BPA's analysis of resident fish problems is inadequate. The problem of introduction of non-native predators and competitors with salmon has not been adequately described. Programs need to be developed to institute measures to reduce or eliminate non-native fish that compete or prey upon salmon.	Chapter 2 identifies the some of the problems that have been created with the introduction of exotic non-native fish and wildlife that compete with or prey upon indigenous species. The Sample Implementation Actions (Volume 3) have been modified to include actions such as removing unwanted non-native aquatic species to make it easier to mitigate and recover native species. BPA also notes that reservoir fisheries management does have a continuing need to address conflicts between native and non-native fish, and between resident and anadromous fish. BPA's Northern Pikeminnow bounty program is an example of a response to resident fish that pose significant risk to salmonids. The unknown impacts of walleye and bass in the reservoirs, or the effect of the biomass of nearly 2 million returning adult shad annually, are also potentially serious problems needing to be addressed.
44/16	New surface bypass technology, behavioral guidance structures or raised spillway weirs ... should be included in	It is one of many Sample Implementation Actions (Volume 3) for the different Policy Directions.

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	any analysis.	
44/17	There appears to be a conflict between Libby Dam operations for the Kootenai River Population of endangered white sturgeon and Libby operations for salmon flow augmentation. IDFG research indicates that flow augmentation for salmon may be producing conditions counterproductive to early (year 1 and 2) rearing for white sturgeon. The negligible benefits of flow augmentation from Libby for anadromous fish are not justified given the negative effect on juvenile white sturgeon.	Comment noted. This potential conflict is discussed under "The NMFS 2000 FCRPS Biological Opinion" heading in Section 2.3.2.4 of the EIS.
44/18	There is controversy regarding flow augmentation as a strategy to moderate the effect of the FCRPS on fish survival. Idaho reiterates the six elements identified in the Four Governors' Agreement as needed to reduce the controversy in the future.	The Four Governors' Agreement, including the six elements, has been incorporated into this EIS and is being considered prior to making a decision. Similarly, BPA has incorporated into this EIS and considered Dr. Al Georgi's recent report, prepared for the Council, on spill effectiveness.
44/19	Idaho has consistently pointed out that flow augmentation cannot recreate more normative river conditions and that incremental flow augmentation is insufficient for recovery.... The State would like to take this opportunity to advocate that further evaluation and study be done to document what the benefits of incremental flow augmentation may be before adoption.	Your opinion has been noted. Future flow augmentation studies could fit under several of the Policy Directions. See Sample Implementation Actions in Volume 3.
44/20	The DEIS summary (ES-i) notes that "[t]he region has sought to stem ..." [quotes second paragraph on page ES-i).... The above summary conclusion also imposes an unfair burden on science to provide an "answer" to the policy direction questions posed later in the DEIS. A more accurate statement than Reason (2) ["There is no clear scientific answer to the problem"] is found on page 107 of the DEIS, "In fish and wildlife mitigation and recovery efforts, where there are still many biological and political unknowns, it is better to be generally correct than precisely wrong." There is scientific agreement through a decision analysis approach that some options are more robust and likely to lead to recovery with lower risk than other	See the Umbrella Response regarding Tiered RODs. It should also be noted that the portion of the DEIS Summary quoted by the commenter merely summarizes information from the Section 1.1, Introduction of the Draft EIS. Section 1.1 in this Final EIS, as well as in the DEIS, provides a more detailed discussion of some of the reasons for the lack of needed progress in past fish and wildlife recovery efforts. This discussion is not intended to place any sort of burden on science to provide an answer concerning recovery efforts; rather, this merely identifies the current lack of a clear and agreed-upon answer as a contributing factor to the lack of needed progress in past recovery efforts. The comments on the DEIS in this Appendix are just another demonstration of the continued disagreement over how and what should be done to mitigate and recovery fish and wildlife in the Region.

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	options	
44/21	Actions necessary for fish and wildlife protection in the basin are related less to lack of scientific conclusion (or robustness) and more to conflicting risk policies.... The policy questions are thus related to how much potential risk decision makers are willing to take, recognizing that a decision to delay implementing lower risk actions is actually a decision to continue the current risk to the fish and wildlife resources.	We agree with the commenter's statement that much of the policy question for fish and wildlife mitigation and recovery in the Region is based on the amount of potential risk decisionmakers are willing to take when making a decision. Section 1.1, of this EIS, is intended to briefly describe some of the most important policy issues facing the Region; Section 2.3.2.3 of this EIS identifies several existing policy conflicts. In addition, the ROD or RODs related to this proposed action will identify relevant factors (including policy considerations) that were balanced by the BPA Administrator in reaching his decision concerning the proposed action and alternatives.
44/22	The DEIS does not address risk policy to meet BPA's obligations to fish and wildlife affected by the FCRPS.... The issue is not whether decision-makers should specifically choose a risk prone approach; the issue is that they should be objectively aware of the associated potential risk of any of the Policy Directions and use a scientific approach to determine the effects of an informed decision. This requires BPA use an adaptive management approach in funding its fish and wildlife program. We urge BPA to include this premise as an alternative within the DEIS and within the governance sections.	One way of viewing or using the comparison tables showing the relative strengths and weaknesses of the Policy Directions is to see these valuations as reflections of risk. Other kinds of risk analysis, such as legal risk, are provided directly to the Administrator by General Counsel. Because neither risk analysis nor adaptive management is a coherent theme, we did not include either as an alternative in this EIS. Instead, risk analysis and adaptive management are, to us, tools that can be applied to any alternative.
44/23	The example of breaching a dam (p. 152) is intended to show that a given implementation action may have an effect of limiting the potential for other actions, but is misleading if applied to removal of mainstem lower Snake dams If BPA is not referring to mainstem dams (which will be the common perception), it should clearly state this in the final document or replace this example with one reflecting a more realistic trade-off.	This generalized example was meant to cover the most aggressive reasonable dam removal alternative in this EIS, the Natural Focus Policy Direction, which includes the removal of the four Lower Snake River dams as well as John Day and McNary dams. Please also note that hydrosystem operations, as the example mentioned, include fish operations as well as power production, flood control, navigation, irrigation, and recreation. See Sections 5.2 and 5.3 in this EIS for more examples and clarifying information on dam breaching.
44/24	The DEIS discusses costs related to the fish and wildlife program.... We recommend this section be revised with the appropriate information related to BPA revenues, income, and budget coinciding with Fish and Wildlife expenses and costs.	Text has been added and updated showing different aspects about costs and revenues. As can expected, the costs and revenues information changes regularly depending on water conditions, markets, and energy related issues. See Section 2.3.2.3 of this EIS for a discussion of managing the money resources.
44/25	The DEIS specifies that the Idaho Office of Species Conservation (OSC) was	See changes to Section 2.3.2.4.

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	created to work on subbasin planning and coordinate efforts on natural resource issues. The legislation establishing the Office of Species Conservation states the office shall oversee implementation of federal recovery plans, coordinate state departments and divisions related to endangered, threatened, and petitioned species, provide input and comment related to endangered species and provide an ombudsman for the citizens of Idaho harmed or hindered by regulations related to ESA. These responsibilities should be reflected in the DEIS.	
44/26	Documents outlining wildlife impacts and the goals and objectives of the Idaho mitigation program include: The Idaho Department of Fish and Game Policy Plan and Strategic Plan. Please make changes to reflect this and the importance of the federal hydro wildlife mitigation program.	See changes to Section 2.3.2.4.
45/1	It is clear that the status quo policy direction is in violation of numerous state and federal laws and does not comply with the wishes of many segments of the public.	While BPA does not agree with the comment, it is noted. Where appropriate in this EIS, such as in Section 1.1 and Table 3.3-2, many of the issues involved in continuing with the Status Quo have been identified. See also the Umbrella Response regarding Reasons for the EIS.
45/2	Protection of pristine ecosystems is the most effective way to protect fisheries and wildlife. It is cheaper and more effective to maintain existing functioning ecosystems than to restore degraded ecosystems.	The commenter's suggestion is noted. See Sample Implementation Actions in Volume 3 for several other related suggestions.
45/3	The Mountaineers supports many aspects of this [Natural Focus] policy direction. However, there are other programs from other policy directions which we also support. The Weak Stock policy direction would decrease commercial activity ... and use selected techniques for harvesting by tribes to assist weak stocks. It would also decrease commercial fisheries harvest.	The commenter's support for aspects of the various policy directions is noted. See Umbrella Response regarding the Hybrid Alternative.
45/4	We disagree with many implementation aspects of this [Strong Stock policy direction] program, such as decreasing restrictions on hydro operations, increasing commercial activity, and	The commenter's disagreement has been noted. See response to previous comment.

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	increasing harvesting while maintaining strong stocks.	
45/5	We believe that the policy is correct in emphasizing protection first of the ecosystems and fisheries stocks which are in the best condition and can be preserved and protected with the least amount of effort and funds. In other words, assign limited resources first to those runs that have the best chance of maintenance and recovery and the ecosystems which are best able to sustain those runs. ... This means, for example, that in the state of Washington priority would be given to protecting the Skagit, Stillaguamish, and the Skykomish rivers, their watersheds, and the healthy fisheries runs in those rivers, together with certain rivers in the Olympic Peninsula which flow from Olympic National Park and likewise have healthy fish runs. Spending large amounts of resources to protect rivers in urban areas such as the City of Seattle is much less cost effective in protecting habitat and fisheries and wildlife resources.	This type of mixing and matching is exactly what BPA has done in designing a Preferred Alternative (PA 2002, Chapter 3). We appreciate commenters explaining their concurrence with certain aspects of Policy Directions. Please note that, as the river systems in the commenter's examples are more detailed than the policy-level decision being initially made by this EIS, future Tiered RODs may include actions as detailed as the commenter's examples. See the Sample Implementation Actions (Volume 3) for many other potential site-specific examples.
45/6	Table ES2 points out that Natural Focus is by far the best alternative in terms of protecting and improving the natural environment. However, it would have adverse impacts on commerce and federal and state costs and funding. For these reasons it is likely that the policy cannot be fully implemented. However, we believe that this is the overall direction to go in terms of BPA policy.	The commenter's preference has been noted. See the Umbrella Response regarding Preferences.
45/7	The DEIS points out at page 55 the many problems associated with existing water policy. Most waters in the Pacific Northwest are over appropriated. Most waters fail to meet total maximum daily load levels for water quality established by the EPA. Most rivers and streams have inadequate instream flows to protect fisheries runs. ... The doctrine of prior appropriation of water rights, which has been in force for more than 100 years, creates massive misallocation of water resources and leaves those with the earliest recognized water rights largely in	The commenter's opinions are noted. See also the Umbrella Response to the Clean Water Act.

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	control of how that water will be used. ... As a result, there is massive waste and inefficient use of water resources by some users, and inadequate resources for lower level water users and for in-stream flows.	
45/8	[Mountaineers] support these goals [conserve species; conserve ecosystems; balance the needs of other species; protect tribal rights; minimize adverse effects on humans] but recognize that there are conflicts among these various goals.	Comment noted.
45/9	To reach this objective [the Federal caucus objective of halting decline of population trends within 10 years] will require substantial change from existing policies and changes in commercial fishing, hatcheries production, protection of natural ecosystems, improvement of in-stream flows, and improvement of water quality, especially protection from non point pollution.	BPA appreciates the commenter's ability to see the interrelationships of actions. BPA, too, recognizes that existing policy will likely change in the Region over time. See Chapter 4 on modifying policy directions.
45/10	The Mountaineers supports all of those recommendations [the preferred recovery strategy of the Governors of the 4 Northwest states].	Comment and preference noted.
45/11	Vigorous proactive measures are needed to restore water quality throughout the state of Washington.	There are many potential water quality actions listed in the Sample Implementation Actions (Volume 3) that were proposed by interested parties throughout the Region. Such actions have been reviewed and will continue to be available for further consideration over time through NEPA and other related processes in the Region.
45/12	The widespread removal of large woody debris, and increased sedimentation from logging, agriculture, and other uses has reduced the structural diversity of in stream habitats necessary for fisheries.	Section 5.2 and 5.3 of this EIS have addressed the issue of sedimentation and its effects with regard to the different Policy Directions that could be followed.
45/13	Estuary conditions have also been substantially affected, and many wetlands along the shores and inner tidal marshes and swamps have been converted to other uses since 1948.	This comment is covered in Chapter 2 of this EIS and it helps to frame and demonstrate for the reader the policy issues that have and continue to face the Region as it moves forward on its fish and wildlife recovery efforts.
45/14	We also agree with the Natural Focus implementation action to decrease harvest. ... Restoration of habitat is not enough when the current ESU's are further endangered by continued harvesting.	The commenter's preference for the implementation action to decrease harvest has been noted. Please see Umbrella Response regarding Preference.

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45/15	Actions by federal agencies to curtail harvesting of commercial fisheries on the East Coast have shown that fisheries can come back if harvesting is curtailed for a period of years.	This assumption is in part what underlies the harvest reduction measures that have been made part of a Weak Stock Focus or Natural Focus alternatives.
45/16	We also concur with the [Natural Focus] recommendation that hatcheries be curtailed and in some instances discontinued.	The commenter's preference has been noted.
45/17	The Mountaineers has previously supported removal of the four lower dams on the Snake River. Breaching of the dams is the best way to insure restoration of the Columbia River ecosystem and the return of healthy fish runs. ... These dams provide less than 5% of the energy for the region, and customers most affected would see the power bills increase by only \$1-3 per month. The amount of power that would be lost as a result of breaching those dams is not significant when considered in the context of the greatly increased amount of power demand, which will come from growth in the next 20 or 30 years. ... Only 13 farms would be affected by the removal of the four dams, and they could continue to get irrigation water by extending the pipes to river levels and adding a booster pump.	See Umbrella Response regarding Preferences and response to comment 16/2. "Only 5 percent" of the total regional energy system is a large amount of power. By comparison, 5 percent of the Region's population is over 500,000 people. Five percent of the Region's power supply is important, and increased demand for power over the coming decades is also important. It may be true that there are only 13 affected farms on 37,000 acres, but many other agricultural producers could be affected by higher power and transportation costs, measures to improve habitat and water quality, and other changes.
45/18	The Mountaineers supports implementation of the various tribes' treaty rights. However, those rights can and should be implemented in a way that do not jeopardize continued health of endangered fisheries runs. ... The tribes can harvest endangered runs by spearing, hook and line, hand nets, and other traditional techniques which do not endanger entire runs.	Comment noted, although it would appear to be contrary to U.S. Supreme Court holdings in the <i>U.S. v. Washington</i> line of cases that prohibit discrimination against tribal treaty fishers based on their means of harvest.
45/19	Although the Mountaineers disagrees with many of the implementation actions of the Strong Stock policy, we do concur that there is merit in focusing on viable stock and ecosystems to avoid a broader collapse of fish and wildlife populations. (114) We also concur that protecting endangered species can be accomplished in part by using economic incentives to promote conservation. (115) ... Providing incentives to private property	Comment noted. See response to comment 45/5 above.

Fish and Wildlife Implementation Plan EIS
Appendix K: Comments and Responses

Comments from Letters		
Letter/ Cmt #	Comment	Response
	owners, such as by providing grants to fence off streams, is an excellent idea. Requiring private property owners to incur enormous expense to protect fisheries resource, which are public resources and of no direct economic benefit to the private property owner, naturally results in antagonism.	
45/20	The Mountaineers agrees that the Northwest cannot be returned to the condition that it was in 1850. However, we do feel that attempting to protect existing natural ecosystems has great merit and should be a strong leg of any policy that is eventually adopted.	The comment preference has been noted.
45/21	However, the BPA and other power agencies are going to have to look at alternative energy sources for the future in any event, because the future increased demand will outstrip the ability of the dams on the Columbia system to produce the required power. Therefore, development of alternative sources of energy and a strong conservation program are essential in any event for the economic health of the region.	Comment noted. This EIS has been prepared to examine the environmental consequences of alternative Policy Directions for fish and wildlife mitigation and recovery efforts. Consideration of alternative energy sources (including conservation) is not the focus of this EIS. However, the potential impacts to fish and wildlife and their habitats from these energy resources and the potential impacts of fish and wildlife mitigation and recovery actions on energy generation and conservation (power) have been discussed in Sections 5.2 and 5.3 of this EIS. In addition, BPA has prepared a programmatic analysis of alternative energy sources and conservation efforts in its Resource Programs EIS (DOE/EIS-0162, 1993), which has been incorporated by reference. As a result of that analysis, BPA adopted the Emphasize Conservation Alternative. This alternative contemplates development of new renewable resources, as well as implementation of conservation and efficiency improvements. BPA's Business Plan EIS (DOE/EIS-0183, June 1995) and ROD affirmed BPA's commitment to conservation and renewable energy. In recent years, BPA has actively pursued power purchases from wind and other renewable energy resources, as well as conservation.

K.3 MEETING SUMMARIES

Meeting Log: By Meeting and by Comment Number		
	Comment	Response
PORTLAND OREGON (JULY 9, 2001)		
M-1/1	A commenter inquired about the role of BPA with respect to other agencies	BPA is working hard, through its implementation of the NMFS and USFWS BiOps, and the Council's Columbia

Meeting Log: By Meeting and by Comment Number		
	Comment	Response
	it.	
M-10/5	An attendee asked what could happen if someone objected to the Policy chosen in the Final EIS/Policy ROD?	Persons objecting to the Policy Direction adopted by the BPA Administrator in the ROD could petition the Administrator to change his decision.
M-10/6	An attendee asked whether this EIS would trigger review on projects covered under existing EISs (e.g., the Spokane Tribal Hatchery EIS, completed years ago, but with the project itself ongoing). If there were significant changes to the existing hatchery project, how would that be handled?	Existing projects are covered under existing documents and processes, so changes to the project likely would be reviewed in a Supplemental Analysis linked to the original Spokane Hatchery EIS. The FWIP EIS could be used as additional information for making such a decision if it was found appropriate. However, if changes to the project represented a major departure from the project's original parameters, <i>and</i> the project was not consistent with the Policy Direction BPA chose, then another approach might be needed.

K.4 CROSSOVER COMMENTS: THE IMPLEMENTATION PLAN AND THE FWIP EIS

The National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) issued Biological Opinions (BiOps) in December 2000 for the operation and maintenance of the Federal Columbia River Power System (FCRPS). The BiOps provide a flexible framework of performance standards for the FCRPS and other conservation measures over the 10-year period from 2000 to 2010. A series of rolling 5-year implementation plans, and a corresponding annual series of 1-year implementation plans were made part of the process. Five-year implementation plans provide the conceptual foundation and the management framework for coordinating actions to further recovery over the ensuing five years. One-year implementation plans summarize specific measures and provide detail on what is planned for the next fiscal year. These plans are intended to inform, and be informed by, other on-going state, tribal and regional planning efforts, such as the Northwest Power Planning Council's (Council's) Fish and Wildlife Program.

The first of these Plans was released for 2002 implementation by the Action Agencies and were discussed with states, tribes, and Columbia Basin stakeholders throughout the Region. Informal and formal comments were received through the NMFS Regional Forum, Regional Executive meetings, staff discussion, written letters, and other opportunities. Many of those comments were reflected in the actions included in the final Implementation Plan. The Bureau of Reclamation, the Corps, and BPA summarized and responded to key comments received in the draft Endangered Species Act 2003/2003-2007 Implementation Plan for the FCRPS (July 2002).

There were comments on the Implementation Plan directed at matters related to this EIS. Four letters submitted in response to the Implementation Plan were identical to the letters submitted as comments to the FWIP DEIS. These letters represented the comments of: 1) State of Idaho – Office of Species Conservation; 2) Committee of Nine & Idaho Water

Fish and Wildlife Implementation Plan EIS
Appendix K: Comments and Responses

Users; 3) Save Our Wild Salmon; and 4) Kootenai Tribe of Idaho. BPA has also incorporated many of the ideas from the comments on the Implementation Plan and included them in the Sample Implementation Action tables in Volume 3. The other related comments have been addressed in the following table.

Crossover Comments: Implementation Plan and the FWIP EIS		
Source	Comment	Response
Montana Fish, Wildlife and Parks	[Recognize] the many 'tradeoffs' affecting resident fish resulting from actions taken for anadromous fish recovery.	We agree that there are tradeoffs that decisionmakers must consider, involving many of the issues affecting fish and wildlife mitigation and recovery, including resident and anadromous fish. This particular tradeoff is depicted by the impacts of the different alternatives on anadromous and resident fish in Sections: 5.2, 5.3, , and the Sample Implementation Actions in Volume 3 of this EIS.
Spokane Tribe of Indians	[Include] performance standards ... for categories of resources other than listed fish species ... to measure the incremental externalization effects of fish-recovery actions on non-target resources (for example, impacts on cultural resources caused by operating reservoirs for flow augmentation and flood control).	The impacts on cultural resources as a result of fish and wildlife mitigation and recovery actions are a very important consideration for decisionmakers. Accordingly, we have described this relationship in Sections 5.2 and 5.3 of this EIS.
Spokane Tribe of Indians	[Request] variances from Tribal, as well as State, water quality standards [in the event of an] inability to meet TDG water quality standard[s].	Please see the Umbrella Response to the Clean Water Act.
Spokane Tribe of Indians	[Do not rely on] the SOR ROD (1997) to cover operation of the FCRPS [as] the SOR NEPA process was seriously flawed, and invalid as to its assessment of impacts on cultural resources.	As noted in Section 1.3.3 of this EIS, the SOR EIS, along with many other NEPA processes, have been incorporated by reference. You will also note that the SOR EIS is referenced many times throughout the course of the analysis within this EIS. We recognize that cultural resources are an important consideration for decisionmakers regarding fish and wildlife mitigation and recovery issues. We also believe that, with the benefit of this EIS and subsequently tiered processes, decisionmakers will be adequately informed of the environmental consequences of their actions, including with respect to cultural resources. See the Umbrella Response regarding Tiered RODs.
The Shoshone-Bannock Tribes	[Analyze] the recovery benefits to returning river conditions to those that existed prior to construction of the dams ... for the entire FCRPS – not just the lower Snake dams.	This scenario would be best captured by the discussion and analysis on the Natural Focus Alternative within this EIS.
The Shoshone-Bannock Tribes	[Manage] human needs and FCRPS project purposes ... in accordance to the needs of the listed fish and aquatic resources.	To the extent that human needs are factored into the needs of fish and wildlife resources, the alternatives other than Natural Focus (i.e., Weak Stock and then Sustainable Use) begin to capture that balance incrementally. See Section 5.3 of this EIS for

Crossover Comments: Implementation Plan and the FWIP EIS		
Source	Comment	Response
		further analysis information.
Colville Confederated Tribes	[Extend] subbasin restoration ... beyond fish and wildlife science and [include] cultural, socioeconomic and tribal trust considerations.	We agree that any consideration of fish and wildlife mitigation and recovery actions must include an understanding of cultural, socioeconomic, and tribal issues. One of the main purposes of this EIS was to identify these relationships and evaluate the collective impacts. See Sections 5.1, 5.2, and 5.3 of this EIS.
Colville Confederated Tribes	[Enact] a more equitable division of recovery resources ... to allow restoration efforts in the Upper Columbia to balance with those of the rest of the basin.	Restoration of anadromous fish above Grand Coulee Dam is not a policy alternative in itself, but it is a potential mitigation and recovery action. It is one of many Sample Implementation Actions (Volume 3) for the different Policy Directions.
Save Our Wild Salmon (SOS) et al., Nicole Cordan	[Do not] refer to legal obligations as 'goals' that the agencies 'want to accomplish' The ESA, Clean Water Act, and the 1855 Treaty with the Columbia River Tribes each set forth specific legal obligations that must be met.	We agree and did not mean to imply that compliance with Federal law was optional. This EIS does, however, examine some alternatives that would require changes in existing law in order to be implemented, as described. As a policy-level document, the analysis is designed to serve the needs of the Region into the future; laws could change over time. Therefore, examining alternatives that are not in compliance with existing laws was deemed necessary under the circumstances. See Umbrella Response regarding Scope.
Public Power Council (Council), Robert Walton	Consider the potential impact of recent developments [such as] Judge Hogan's decision in <i>Alsea v. Evans</i> .	See Chapter 2, Section 2.3.2.3 of this EIS.
Public Power Council (Council), Robert Walton	Consider the potential implications ... if the [Pacific Decadal Oscillation] has now produced markedly increased ocean productivity.	<p>We agree that the ocean may likely play a dominant role in how many migrating juvenile salmon and steelhead return as adults, and that some stocks have experienced a dramatic increase in the past few years. The issue the Region faces is that the fish that are listed as endangered and threatened under the ESA are wild salmon and steelhead populations. Hatchery fish comprise about 80% of the returning adults.</p> <p>The effects of the FCRPS on the listed fish include changes in volume and timing of flow, and a small amount of mainstem habitat loss for fall chinook salmon. Our efforts in freshwater will be successful only if the favorable ocean conditions continue, but the factors that cause El Niños to return are not well understood and the timing is not predictable. The magnitude of the swift positive change in ocean conditions between 1998 and 1999 was not anticipated; we can only speculate when conditions will return to those of the early 1990's.</p> <p>An emerging understanding of an influence that may</p>

Crossover Comments: Implementation Plan and the FWIP EIS		
Source	Comment	Response
		further aggravate our work is global warming. The 1990's saw record high temperatures with one El Niño after another, instead of a decade of separation. If that scenario returns, we may be greatly frustrated in the attempt to maintain our present gains. Part of the answer is to continue the work in freshwater, but possibly more important is to gain an understanding of why some stocks survive better in the ocean than others. By gaining this insight, we might be able to improve ocean survival in good and bad years through improvements in areas such as freshwater habitat and timing of flow. See Appendix F for an overview of the ocean conditions issue.
Maia Genaus	[Include] all affected human parties in this process [in] a forum in which each affected human party can see all the other affected human parties, as well as the larger environmental picture.	Clearly a fundamental purpose for this EIS is to provide an opportunity for public involvement of interested parties. Review this Appendix for the many concerns and issues expressed by interested parties.
Bernie A. Swift	[Do not implement] the planned action ... strictly in conjunction with the ESA at the expense of farmers and the general public's need for water and electricity.	The commenter's preference for a regional policy direction is noted. The identified alternatives within this EIS represent points along the spectrum of potential policy directions. Each Policy Direction involves unique tradeoffs. This document identifies and discusses many of the important tradeoffs associated with each Policy Direction in order to more fully inform the public and decisionmaker as to the consequences of his/her actions.

K.5 THE SCOPING PROCESS

Preliminary scoping for this EIS began in 1998 with the Council's Multi-Species Framework Project. This project, which was managed by a Federal, state, and tribal committee, addressed mitigation and recovery for listed and non-listed fish and wildlife. When the Federal Caucus formed in 1999, scoping expanded to accommodate the "All-H" aspect of anadromous fish recovery. The formal scoping process for this EIS was initiated with a Notice of Intent on October 8, 1999 (64FR 56488-56489). The NOI was followed by a Notice of Scoping Meeting, December 22, 1999 (65FR 765-766). Scoping for this EIS was incorporated into the public meeting sessions for the All-H Paper (The Federal Caucus' Conservation of Columbia Basin Fish: Building a Conceptual Recovery Plan), as well as the Lower Snake River Juvenile Salmon Mitigation Feasibility Study and EIS and a report on John Day Dam Drawdown, both authored by the U.S. Army Corps of Engineers.⁹ An

⁹ See Chapter 1, Volume 1, of this EIS for a brief description of the documents and processes. The All-H Paper, the Lower Snake River Juvenile Salmon Mitigation Feasibility Study and FEIS, and the John Day Dam Drawdown Report were key documents and processes used in the preparation, including information and analysis, of this EIS and the Policy Directions alternatives.

amended Notice of Scoping was issued on February 18, 2000, announcing an additional scoping meeting on March 14, 2000, and extending the close of comment from February 29, 2000 to March 31, 2000. During scoping, interested parties were given the opportunity to comment on the range of actions, alternatives, and impacts to be included in the Fish and Wildlife Implementation Plan EIS.

The following is a list of the formal Scoping/Public Meetings that occurred:

February 3, 2000	Portland, Oregon
February 8, 2000	Spokane, Washington
February 10, 2000	Lewiston, Idaho
February 15, 2000	Astoria, Oregon
February 17, 2000	Tri-Cities (Pasco), Washington
February 23, 2000	Boise, Idaho
February 29, 2000	Seattle, Washington
March 1, 2000	Kalispell Montana
March 2, 2000	Missoula, Montana
March 6, 2000	Ketchikan, Alaska
March 7, 2000	Idaho Falls, Idaho
March 7, 2000	Sitka, Alaska
March 8, 2000	Twin Falls, Idaho
March 8, 2000	Juneau, Alaska
March 9, 2000	Petersburg, Alaska
March 14, 2000	Portland, Oregon

The joint public involvement process:

- yielded 60,000 Comments
- attracted 9,000 Attendees
- included 15 Meetings
- involved 9 Participating Agencies
- spanned 6 Weeks
- covered 5 States

K.6 COMMENTERS' LETTERS

For a listing of comment letters, see Table A on page 10.

RECEIVED
PUBLIC INV.
LOG#: F&IP-001
RECEIPT D:
JUN 28 2001
June 21, 2001

To whom it may concern -

I have received your letter dated June 13, 2001 concerning the draft environmental impact statement, fish and wildlife implementation plan and am reviewing the EIS. I must say that it is very apparent that we collectively must implement to recover an anadromous fish population while maintaining solid economic factors.

Meetings, hearings, biological opinions, BPA opinions and so forth are all that has been done. The information is in gentleness... and we must act on it. The Columbia River watershed once produced more anadromous fish than any other and it is time we take some action. These anadromous fish need a moving, free-flowing river to thrive and survive.

Please remove the earthen portion of the four lower Snake River Dams to allow more natural passage for these fish. Just alone with a solid return of salmon and steelhead annually we will create more jobs and boost economies of once slow areas. It will work and can work so lets stop all the meetings, opinions, EIS etc and place into action what will really work. We are smart enough, wealthy enough and have the foresight to

do the right decision. Lets not let greed and/or politics sway our decisions to do what is right for future generations.

Thank you for reading the letter and please send me a paper copy of the Draft EIS for my further review to the following address. Thanks.

John + Megan Kendall
1407 East 20th
Spokane, WA. 99203





United States
Department of
Agriculture

Natural
Resources
Conservation
Service

101 SW Main Street, Suite 1300
Portland, Oregon 97204-3221
(503) 414-3200
Fax: (503) 414-3103

RECEIVED BY BPA	June 29, 2001
PUBLIC INVOLVEMENT	
LOG#: FWTP-002	
RECEIPT DATE:	
JUL 10 2001	

Charles C. Alton, Environmental Project Manager
Bonneville Power Administration, Room 122
Eastside Federal Complex
P.O. Box 3621
Portland, Oregon 97208

Dear Mr. Alton,

SUBJECT: NRCS Comments on the May 2001 Draft Fish and Wildlife Implementation Plan EIS

NRCS appreciates the opportunity to review this draft document. NRCS and our conservation partners are interested since we will undoubtedly be involved with implementation actions dealing with habitat restoration efforts on private lands.

It is obvious that the intent of the EIS is to encourage positive support for habitat restoration from private landowners. Unfortunately, the following inconsistencies and lack of complete explanation will negatively affect private landowners and their willingness to participate. 1

The document does not adequately describe what actions are contained in the implementation plan, itself. The concept of an implementation plan implies decisions have been reached by BPA as to what actions to pursue to restore fish and wildlife. The only section of the draft EIS with any detail on implementation refers to "sample implementation actions" (see Chapter 3, section 3A). The use of the word "sample" does not connote actions or decisions on what's to occur. In addition most of the actions listed read as goals and objectives not actions that describe what, when, where, who and how different tasks will be undertaken. Without this level of information it is difficult if not impossible to describe the cumulative environmental, economic and social effects required by NEPA. Effects do not site study or research references. They do not appear to be based on science nor on a process to synthesize societal values about the proposed alternatives. The concept of "Build Your Alternative" (see Volume 2, Appendix I) is interesting but perhaps should have been used through a public process to scope the alternatives prior to developing an implementation plan and this draft EIS. 2 3 4

The Commerce Focus Alternative has, what NRCS perceives as, major inconsistencies.

The draft EIS defines the Commerce Focus as: "a libertarian approach to conservation, in that it decreases government regulation and instead emphasizes voluntary actions, financial incentives and market mechanisms to bring about desired results. Private companies and citizens are given the flexibility to determine how they can best meet the goals of conservation, while still fulfilling their economic need." On pages xxiv-xxv of the draft EIS summary the effects of the Commerce Focus are displayed as less effective than the No Action alternative.

NRCS and our conservation partners view this as the only viable approach. A locally led, voluntary approach is the only way to get the needed private landowner trust and stewardship needed to restore fish and wildlife to sustainable levels. The effects of this alternative however, are displayed in the draft EIS as less effective than the "Status Quo (No Action) alternative."

Empowering local citizens to find solutions will provide effective, long lasting solutions that are impossible to achieve through a top down command and control approach. Building local support and ownership for conservation changes attitudes and stewardship that will last for generations. Regulations and enforcement at best control behaviors but only as long as the regulators are visible.

Long-term approaches that emphasize maximizing economic, social and cultural values and internalizing both private and public costs will result in similar outcomes as the draft EIS alternative described as "Sustainable Use." The use of financial incentives and processes that empower local decisionmaking can effectively be used to accelerate efforts to meet both economic and environmental objectives.

At least for Habitat Actions, NRCS disagrees that the implementation actions listed for the Commerce Focus Alternative (end of Chapter 3) would result in the effects displayed in chapter 5 (pages 226-266).

Thanks again for providing NRCS the opportunity to comment.

C. R. Vigil Jr. for
BOB GRAHAM
State Conservationist

cc:
Lorri Bodi, Bonneville Power Administration, P.O. Box 3621, Portland, Oregon 97208-3621

RECEIVED BY BPA PUBLIC INVOLVEMENT
LOG#: FWIP-003
RECEIPT DATE: JUL 11 2001

-----Original Message-----
From: Shelley Hartmann [mailto:county_planner@yahoo.com]
Sent: Monday, July 09, 2001 1:33 PM
To: ccalton@bpa.gov
Subject: EIS No. 010222, Fish and Wildlife Mitigation and Recovery

EIS No. 010222, Fish and Wildlife Mitigation and Recovery

Dear Mr. Alton

I am requesting that I be provided a copy of the EIS No. 010222, Draft EIS, DOE, Fish and Wildlife Implementation Plan, To Implement and Fund a Policy Directions for Fish and Wildlife Mitigation and Recovery, Pacific Northwest, AZ, CA, ID, MT, NV, NM, OR, UT, WY and British Columbia.

Also, I request on the behalf of the Lincoln County Commission, the Lincoln County Planning Commission and the Lincoln County Public Land Planning Commission, a 60-90 day extension to the comment period. The August 6, 2001 suspense does not give sufficient time to receive the document, review it, and provide comments. It also violates our land use plans for adequate notice, and consultation, cooperation an coordination.] 1] 2

Sincerely

Shelley Hartmann, Coordinator
Lincoln County Planning Office
P O Box 307
Pioche, NV 89043

Shelley Wadsworth Hartmann
Planning Coordinator
Lincoln County Planning & Building Department
P.O. Box 307
Pioche, Nevada 89043
ph: 1-775-962-5165 fax: 1-775-962-5164

5
6
7

RECEIVED BY BPA PUBLIC INVOLVEMENT LOG#: FWIP-004 RECEIPT DATE: JUL 11 2001
--

-----Original Message-----

From: brucehenion [mailto:brucehenion@proaxis.com]
Sent: Monday, July 09, 2001 2:36 PM
To: ccalton@bpa.gov
Subject: EIS No. 010222, Fish and Wildlife Mitigation and Recovery

US DOE Charles Alton ccalton@bpa.gov

EIS No. 010222, Fish and Wildlife Mitigation and Recovery
Dear Mr. Alton

Request I be provided a copy of the EIS No. 010222, Draft EIS, DOE, Fish and Wildlife Implementation Plan, To Implement and Fund a Policy Directions for Fish and Wildlife Mitigation and Recovery, Pacific Northwest, AZ, CA, ID, MT, NV, NM, OR, UT, WY and British Columbia.

Also, request a 60-90 day extension to the comment period. The August 6, 2001 suspense does not give sufficient time to receive the document, review it, and provide comments.] 1

Bruce Wayne Henion
3339 Jefferson Scio Drive S. E., Jefferson, Oregon 97352
<http://www.energyquestsearch.com>

RECEIVED BY BPA
PUBLIC INVOLVEMENT
PROJECT#: FWIP-005
RECEIPT DATE: JUL 11 2001

-----Original Message-----

From: Katherine Van Tuyl [mailto:katiclu@surftee.com]
Sent: Sunday, July 08, 2001 10:32 AM
To: ccalton@bpa.gov
Subject: EIS No. 010222, Fish and Wildlife Mitigation and Recovery

US DOE Charles Alton ccalton@bpa.gov

EIS No. 010222, Fish and Wildlife Mitigation and Recovery

Dear Mr. Alton

Request I be provided a copy of the EIS No. 010222, Draft EIS, DOE, Fish and Wildlife Implementation Plan, To Implement and Fund a Policy Directions for Fish and Wildlife Mitigation and Recovery, Pacific Northwest, AZ, CA, ID, MT, NV, NM, OR, UT, WY and British Columbia. Why is the state of Washington not included?

Also, request a 60-90 day extension to the comment period. The August 6, 2001 suspense does not give sufficient time to receive the document, review it, and provide comments.] 1

Sincerely

Katherine Van Tuyl
4764 Andrews Road
Medford, OR 97501

RECEIVED BY BPA
PUBLIC INVOLVEMENT
LOG#: FWIP-006
RECEIPT DATE:
JUL 11 2001

RECEIVED BY BPA
PUBLIC INVOLVEMENT
LOG#: FWIP-007
RECEIPT DATE:
JUL 11 2001

-----Original Message-----

From: watermanranch@webtv.net [mailto:watermanranch@webtv.net]
Sent: Sunday, July 08, 2001 11:19 AM
To: ccalton@bpa.gov
Subject: EIS No 010222 Draft

Mr. Alton:

Please send me a copy of the EIS No.010222 Draft EIS, DOE, Fish and Wildlife Implementation Plan to Implement and fund a policy direction for fish and wildlife mitigation and recovery, Pacific Northwest, Az, CA, Id, Or.....etc.

Please extend the comment period another 60-90 days to allow those of us in these states to review the draft.] 1

Thank you very much.

incerealy,

Sharon Waterman
87518 Davis Creek Lane
Bandon, Oregon 97411

-----Original Message-----

From: Rachel Thomas [mailto:badger@theriver.com]
Sent: Friday, July 06, 2001 3:05 PM
To: US DOE Charles Alton
Subject: EIS No. 010222, Fish and Wildlife Mitigation and Recovery

Dear Mr. Alton

Request I be provided a copy of the EIS No. 010222, Draft EIS, DOE, Fish and Wildlife Implementation Plan, To Implement and Fund a Policy Directions for Fish and Wildlife Mitigation and Recovery, Pacific Northwest, AZ, CA, ID, MT, NV, NM, OR, UT, WY and British Columbia.

Also, request a 60-90 day extension to the comment period. The August 6, 2001 suspense does not give sufficient time to receive the document, review it, and provide comments.] 1

Sincerely

Rachel Thomas
Box 4637
Huachuca City, AZ 85616

RECEIVED BY BPA
PUBLIC INVOLVEMENT
#: FWTP-008
RECEIPT DATE:
JUL 11 2001

-----Original Message-----

From: Casey Jones [mailto:luego@c212.com]
Sent: Sunday, July 08, 2001 4:51 PM
To: ccaltan@bpa.gov
Subject: EIS No. 010222, Fish and Wildlife Mitigation and Recovery

Mr. Alton

Please provide me a copy of the EIS No. 010222, Draft EIS, DOE, Fish and Wildlife Implementation Plan, To Implement and Fund a Policy Direction for Fish and Wildlife Mitigation and Recovery, Pacific Northwest, AZ, CA, ID, MT, NV, NM, OR, UT, WY and British Columbia.

Please extend the comment period for an additional 60 to 90 days.. The current August 6, 2001 suspense doesn't allow sufficient time to receive, review, and provide comments on a document of this import.

] 1

Sincerely

Casey Jones
1920 Lexington Drive
Sierra Vista, AZ 85635

RECEIVED BY BPA
PUBLIC INVOLVEMENT
LOG#: FWT-009
RECEIPT DATE:
JUL 11 2001

-----Original Message-----
From: Della [mailto:dbcaz@theriver.com]
Sent: Saturday, July 07, 2001 7:27 PM
To: ccalton@bpa.gov
Subject: Fish and Wildlife Mitigation and Recovery

US DOE Charles Alton

EIS No. 010222, Fish and Wildlife Mitigation and Recovery.

Mr. Alton,

I request to be provided a copy of the EIS No. 010222, Draft EIS, DOE, Fish and Wildlife Implementation Plan, to Implement and fund a policy directions for fish and ?wildlife mitigation and recovery, Pacific northwest, AZ, CA, ID, MT, NV, UT, WY and British Columbia???

Also, I request at least a 90 day extension to the comment period. Less than a month is hardly sufficient time to receive the document, review it and provide comments.] 1

Sincerely

D E Callison
HC1 Box 430
Elgin, AZ 85611

RECEIVED BY BPA
PUBLIC INVOLVEMENT
LOG#: FWIP-010
RECEIPT DATE:
JUL 1 8 2001

RECEIVED BY BPA
PUBLIC INVOLVEMENT
LOG#: FWIP-011
RECEIPT DATE:
JUL 1 8 2001

-----Original Message-----

From: Susan Krentz [mailto:crazycow66@hotmail.com]
Sent: Saturday, July 07, 2001 10:32 PM
To: ccalton@bpa.gov
Subject: REQUEST INFORMATION AND DELAY.

US DOE Charles Alton ccalton@bpa.gov

EIS No. 010222, Fish and Wildlife Mitigation and Recovery

Dear Mr. Alton

Request I be provided a copy of the EIS No. 010222, Draft EIS, DOE, Fish and Wildlife Implementation Plan, To Implement and Fund a Policy Directions for Fish and Wildlife Mitigation and Recovery, Pacific Northwest, AZ, CA, ID, MT, NV, NM, OR, UT, WY and British Columbia.

Also, request a 60-90 day extension to the comment period. The August 6, 2001 suspense does not give sufficient time to receive the document, review it, and provide comments.] 1

Sincerely,

Susna Krentz

Box 3592

Douglas, Az. 85608-3592

Get your FREE download of MSN Explorer at <http://explorer.msn.com>

7/18/01

Look at dams, not pinnipeds

The June 27 article, "Competing with pinnipeds," speculates on the effect seals and sea lions are having on wild salmon populations. It misguides your readers as to the primary factors that have led to the endangerment of wild Pacific salmon.

We need not look further than the breaching of the four lower Snake River dams.

The economic benefits from recreational and sports fishing would replace the hundreds of millions of dollars spent on taxpayer subsidies for dam-dependent industries. Federal programs such as the barging of smolt have proved ineffective, as only 0.25 percent return to the Snake River. The adult to smolt return range of 2 percent to 6 percent is needed for salmon recovery.

The more education the public receives on the economic, environmental and cultural gains from breaching these dams, the more obvious the need for their removal.

PAUL ST. GERMAINE
Northeast Portland
pst_g@yahoo.com

Greed, destruction continue

Bonneville Power Administration gets a 46 percent rate increase and our tragically depleted salmon runs get no relief (June 30 article). Is our greed for power so great that we continue the exploitation of our earth? Where is conservation and stewardship?

What is the future for our grandchildren? My 12-year-old and I just visited the hatchery at Bonneville Dam and re-read the horrible history of our destruction of the Columbia River. And so we continue. How sad.

RON ENNIS
Northeast Portland

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WILL STRICKLAND
Southeast Portland

BPA ignores worth of salmon

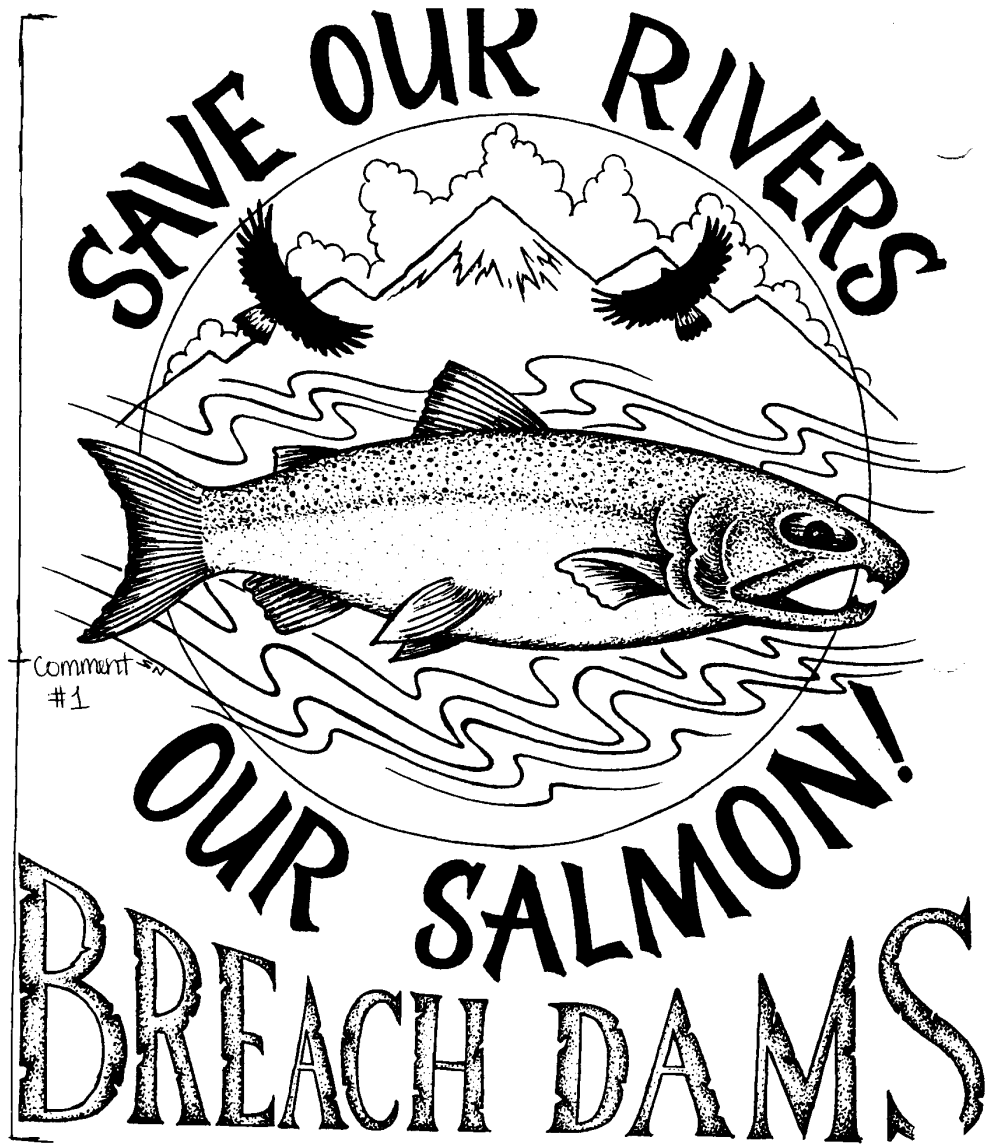
The Bonneville Power Administration seems to believe that communities, cultures and individuals that care about and depend on salmon can be ignored, and salmon restoration plans can be put on hold.

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Worst of all, the agency is not spilling a drop of water for salmon.

Where is the balanced approach? It's about the salmon, stupid. I can adapt by lessening my demand on electricity. I'm not stupid.

K. MICHAEL CLARK
Corvallis



Comment →
#1



United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
500 NE Multnomah Street, Suite 356
Portland, Oregon 97232-2036

RECEIVED BY BPA PUBLIC INVOLVEMENT Interior FWTP-012
RECEIPT DATE: AUG 02 2001

IN REPLY REFER TO:

July 31, 2001

ER 01/586

Charles Alton, Project Manager - KEC-4
Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208

Dear Mr. Alton:

The Department of the Interior (Department) has reviewed the Draft Environmental Impact Statement (DEIS) for the Bonneville Power Administration Fish and Wildlife Implementation Plan in the Pacific Northwest and offers the following specific comments for use in the Final Environmental Impact Statement (FEIS).

GENERAL COMMENTS

The Department through the National Park Service (NPS) manages a portion of Lake Roosevelt formed by the Grand Coulee Dam and the associated lands at Lake Roosevelt National Recreation Area (LRNRA), a unit of the National Park System. The LRNRA is included in the project area of the draft EIS. The portion of Lake Roosevelt managed by the NPS includes about 312 miles of shoreline, 47,438 acres of water surface (at full pool) and 12,936 acres of land. The other portions of Lake Roosevelt are managed by the Colville Confederated Tribes and the Spokane Tribe.

Recreation Use and Facilities

We are concerned that the following information in the Recreation Use and Facilities was not considered in the draft EIS. The FEIS should include the following information on impacts to recreation use and facilities for the lands managed through the NPS and should be considered in the final analyses for mitigation to these resources:

Visitation at the LRNRA has been between 1.3 and 1.5 million recreation visits for the last several years. The lake is a popular recreation destination in the summer months because of its size, the quality of its water, the beauty of the surrounding scenery, and the fact that it is one of the few large lakes in the region that has an extensive amount of shoreline and adjacent lands that are publicly owned and available for public use.

1

The developed facilities that the NPS manages for the public include: 22 boat launch ramps with adjacent trailer and vehicle parking lots, 28 campgrounds (18 drive-in and 10 boat-in) containing 640 individual sites as well as several group campsites, 10 developed swim areas, and three concessionaire-operated marinas. In addition, swimming and beach camping is allowed on the shoreline throughout the entire recreation area.

The Department is concerned that changes in reservoir operations that directly affect the management of the National Recreation Area, in terms of public access and resource management and protection, have not been adequately addressed in the DEIS. According to the December 2000 Biological Opinion on the Federal Columbia River Power System, Lake Roosevelt will be drafted as low as elevation 1,280 feet by August 31, during average and above-average water conditions and to elevation 1278 feet in years of lower flows (less than 92 Maf). It is our understanding that based on historical flows, the occurrence of flows less than 92 Maf could be more than 50 percent of the time. The following information should be included in the FEIS for analysis:

The July-August period is the busiest period on the lake for recreation. This period receives 45 percent of the total recreation use. In 2000, visitation for July was 317,529 visits and for August was 408,433 visits.

Five boat ramps are affected by lake elevations between 1282 feet and 1278 feet (minimum boat launch elevation is listed):

- Jones Bay - 1282 feet
- Marcus Island - 1281 feet
- Evans - 1280 feet
- Napoleon Bridge - 1280 feet
- North Gorge - 1280 feet

Four of these are located north of Kettle Falls including Evans which is a major access point for the north end of the lake. Below elevation 1,280 feet, access to the lake above Kettle Falls is significantly limited.

All courtesy docks that are attached to the shoreline would be high and dry below elevation 1,280 feet.

Most floats around designated swimming areas go dry by elevation 1,280 feet. This would be a major impact on day-use.

The water well serving the Marcus Island campground would go dry at elevation 1,280 feet.

Visitor safety and accessibility would be affected due to steeper slopes to access facilities during period of the heaviest visitation. Boaters would also face unfamiliar navigation hazards at lower than normal summer time lake levels.

#1

#2

We also request that your agency provide information in the FEIS on how you will mitigate for these impacts to recreation use and facilities. For your information, we have included our estimate on costs to mitigate the above impacts as follows:

#3

Retrofit docks	\$360,000
Retrofit launch ramps (extend, widen)	73,000
Retrofit swim areas	70,000
Deepen Marcus Island well	18,000
Cultural compliance	<u>30,000</u>
Total:	\$551,000

There would also be an estimated increase of \$36,000 in annual operating costs (moving docks, cleaning sand off ramps, patrolling exposed cultural sites, etc.) associated with the summer drawdown.

Concessionaire Operated Marinas

The Department is also concerned that the three concessionaire operated marinas within the LRNRA that would be affected by changes in the summer operations of Lake Roosevelt were not addressed in the DEIS. Please include this information and the analyses for affects on these concessionaires in the FEIS:

Roosevelt Recreational Enterprises, a Colville Tribal enterprise, operates marinas under concession contract with the NPS at Keller Ferry and Seven Bays. The marina at Kettle Falls is operated under a concession contract by Lake Roosevelt Vacations, Inc.

#4

Primary impacts of additional summer drawdown would include the loss of docks used for seasonal and short-term moorage. Elevation 1,278 feet puts the Kettle Falls marina on the "bubble" in terms of having to relocate 60 rental slips, a houseboat operation and fuel dock to the main channel of the lake causing congestion at the public launch ramp. Changes in the summer operations of Lake Roosevelt could significantly impact all three marinas during their primary revenue-generating season.

Cultural Resources

We are very concerned that the impacts to cultural resources in the LRNRA, given the drafting of Lake Roosevelt below elevation 1,280 feet, was not adequately addressed in the DEIS. Drafting of Lake Roosevelt below elevation 1,280 feet would expose cultural resource sites which normally have been protected by inundation from the adverse effects of the peak visitation period. The following information should be included in the FEIS and used for the impacts analyses of this project on cultural resources:

#5

Within the LRNRA, there are 22 cultural resource sites and portions of an additional 18 sites that would be subjected to increased artifact collection and looting. The exposed

sites would also suffer disturbances from the many visitors engaged in such seemingly innocent beach activities as digging sandcastles, building temporary structures, or even skipping stones. During the peak visitation period, these activities have traditionally been confined from the 1,280 to 1,290-foot zone where the surface sediments have been disturbed by wave and wind action. By lowering the pool below 1,280 feet during the summer, the surf zone will be lowered creating a new zone of disturbance in these sites.

#5

Resident Fish Habitat and Recreational Fisheries

Considerable investment has been made over the years by Bonneville Power Administration and other agencies to develop a resident fishery in Lake Roosevelt to compensate, in part, for the loss of the native fishery above Grand Coulee Dam. This has resulted in a significant year-round recreational fishery. We are concerned that the impacts to this resource of fluctuations below elevation 1,280 feet (July to August) were not addressed in the DEIS. The following impacts would be two-fold, and should be included and analyzed in the FEIS:

First, is the impact to productivity of Lake Roosevelt. Tribal fishery biologists in this area have found that 60 percent of the shallow embayments, the primary zooplankton production areas, occur between elevations 1,290 feet and 1,270 feet. These protected shallow areas are critical to the production of zooplankton that are utilized by fish in the Lake Roosevelt fishery. It is estimated that it takes over 100 days for zooplankton growth to reach a size that can be utilized by fish. With Lake Roosevelt's retention time being below 80 days in the open water pelagic zone, zooplankton does not have enough time to mature before it is entrained out of the reservoir. These embayments have a much longer retention time than the open-water habitat, which allows the zooplankton growth to reach a level that is suitable for fish consumption.

#6

A second major impact of lowering the reservoir in the late summer would be the loss of macrophyte (aquatic plant) populations and near shore fine sediment layers that have developed. The fine sediment layers that are laid down near shore in a stable lake environment become a place for macrophyte growth. This macrophyte growth is critical as cover habitat for fish fry. Also, the fine sediment layer creates turbid conditions that the fry can use to hide from predators. A drop in lake elevation in late summer does two things that reduce this cover layer. It de-waters much of the macrophyte growth and causes it to desiccate. Also the fine sediment zone that developed near the shore is now temporarily gone. The results of this action make the fry fish vulnerable to predation due to the loss of cover habitat.

Public's Exposure to Toxic Materials

The DEIS did not address the exposure to the public during the peak public utilization period, of additional portions of the lake bed, which may have deposition areas containing toxic materials. These toxic materials have been the result of past and present activities of a lead/zinc smelter and pulp mill upstream, and from other mining, logging, agricultural, industrial and municipal

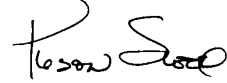
#7

activities. The affect to the public and possible mitigation given the drawdown of the lake should be included in the FEIS.

#7

Thank you for the opportunity to comment. If you have any questions regarding these comments, please contact Vaughn Baker, Superintendent, Lake Roosevelt National Recreation Area at (509) 633-9441.

Sincerely,



Preston A. Sleeper
Regional Environmental Officer

Kuehn, Ginny -KC-7

From: Richard.A.Carosone@am.pnu.com
Sent: Friday, August 03, 2001 5:08 AM
To: comment@bpa.gov
Subject: Fish and Wildlife Implementation Plan

RECEIVED BY BPA
PUBLIC INVOLVEMENT
LOG#: FWIP-013
RECEIPT DATE: AUG 03 2001

Dear BPA,

I tried to record my comments at the phone number you listed in your letter, 800-622-4519. I was told by the person that answered that they did not have the capability to record my comments. So I will be more brief because my typing skills leave a lot to be desired.

The only two options that can be considered for KEC-4, is the Natural Focus alternative or the Weak Stock Alternative. I think that there should be some modifications to both of these options also. I am not an engineer or a wildlife biologist but I do know that the only thing that will restore our fish runs is the breaching of the lower four Snake River dams. Granted this may still not restore them to historical levels but it is our best chance. Right now we are wasting millions of dollars on fish restoration that is providing minimal help. I realize the consequences of breaching are the loss of bargaining jobs and power generation. The addition of longer fishing seasons will more than offset this loss. This was evidenced by the mass migration of people to fish for Chinook salmon this year in Idaho.

#1

#2

You have put off fish recovery long enough it is time to make the long term commitment to fish recovery and breach the four lower Snake River dams. The fish have been and are now being "slowed played" into extinction. Future generations deserve to have the opportunity to see these great fish and it will only happen through dam breaching.

Rick Carosone

*We are Citizens,
-x payers,
Voters!*



S. Nighthawk
1801 SW Goodwin Av
Pendleton, OR
97801

Outraged by salmon sacrifice

I am outraged that the Bonneville Power Administration claims it has no option but to eliminate salmon protections in this year of record low rainfall ("Water shortage may force BPA to end fish aid," March 8). Are we really to believe that we must sacrifice one of the Northwest's natural treasures so that the region can continue to have cheap power?

Administrator Steve Wright has put forth an unacceptable plan that ignores recently adopted federal salmon re-plan and devotes all available in the dam to power production.

Wright's plan would allow no water to be saved for the spring salmon run and would eliminate spillovers that divert water from turbines. Why do we place an already endangered species in such peril?

Wright claims that the other option, buying out-of-state power, is too costly, and would put BPA in the red. We must resist this attempt to shift the burden of California's energy crisis to our natural heritage. The long-term health of our salmon is more important than the short-term fiscal problems of a bloated and struggling energy industry.

WILLIE SMITH-CARLILE
Southeast Portland

*C.C. Tribal,
State, Federal
Zenaps*

RECEIVED BY BPA
PUBLIC INVOLVEMENT
LOG#: FWIP-014
RECEIPT DATE:
AUG 06 2001

Look at dams, not pinnipeds

The June 27 article, "Competing with pinnipeds," speculates on the effect seals and sea lions are having on wild salmon populations. It misguides your readers as to the primary factors that have led to the endangerment of wild Pacific salmon.

We need not look further than the breaching of the four lower Snake River dams.

The economic benefits from recreational and sports fishing would replace the hundreds of millions of dollars spent on taxpayer subsidies for dam-dependent industries. Federal programs such as the barging of smolt have proved ineffective, as only 0.25 percent return to the Snake River. The adult to smolt return range of 2 percent to 6 percent is needed for salmon recovery.

The more education the public receives on the economic, environmental and cultural gains from breaching these dams, the more obvious the need for their removal.

PAUL ST. GERMAINE
Northeast Portland
pst_g@yahoo.com

Navigation top calling for dams

Your editorial "A year of sorries" (July 8) presented a sham argument against removal of the four lower Snake River dams.

In a story by Gail Kinsey Hill published the same day, The Oregonian reported that 3,700 megawatts of new generation will be on line by January 2003. This will more than offset any deficit created by removing the dams.

Arguing that these dams are a crucial component of power generation in the region is just plain disingenuous. The purpose of these dams is to create slack water for navigation; power generation is secondary. They contribute less than 5 percent to the region's electricity production.

Even with this meager contribution included in the equation, removal of the dams and restoration of salmon runs would result in a net economic benefit for the region. We can prosper without these dams, but we cannot afford extinction of wild salmon runs.

JAY D. FORMICK
Cainby

Greed, destruction continue

Bonneville Power Administration gets a 46 percent rate increase and our tragically depleted salmon runs get no relief (June 30 article). Is our greed for power so great that we continue the exploitation of our earth? Where is conservation and stewardship?

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Northeast Portland

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Southeast Portland

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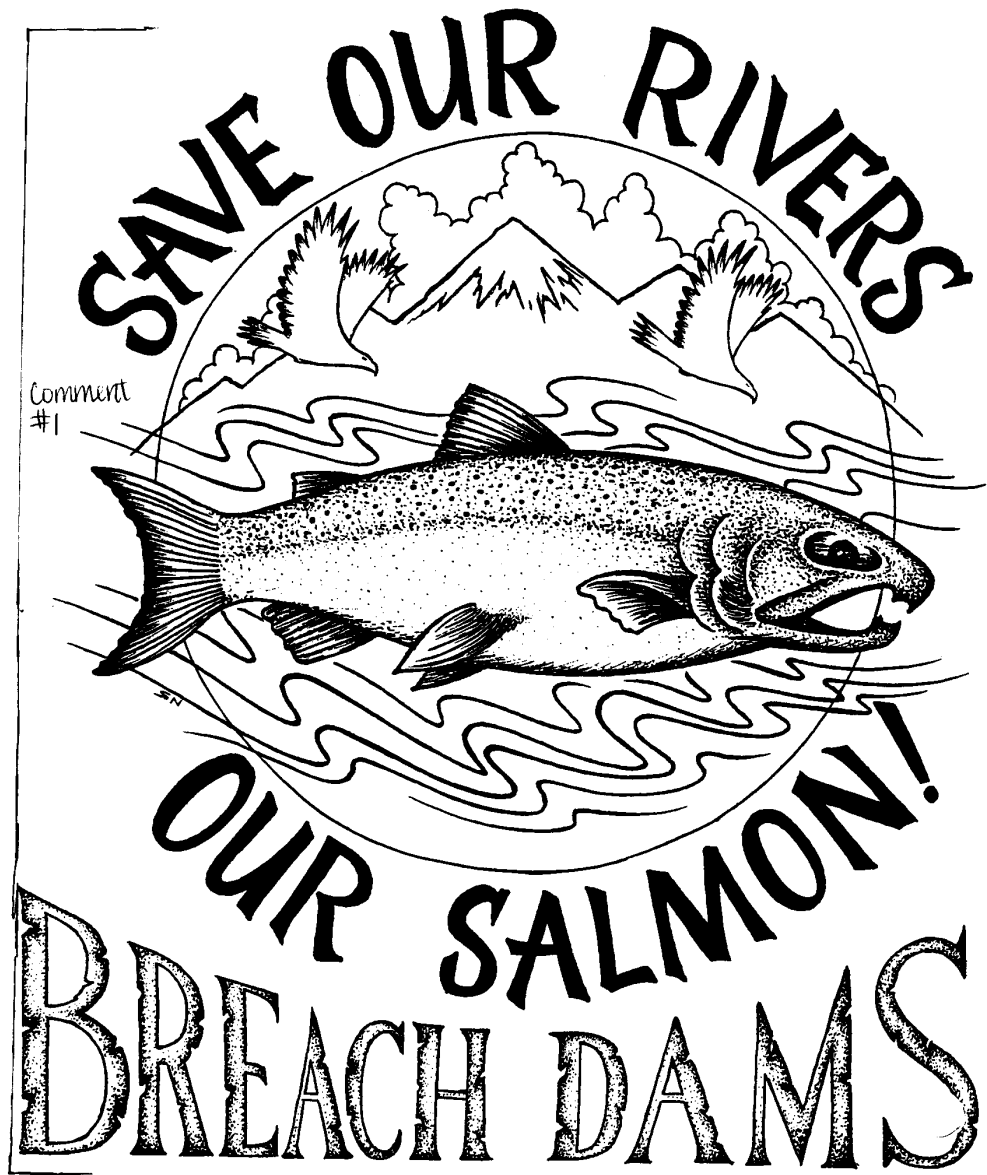
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K. MICHAEL CLARK
Corvallis



Fish and Wildlife Implementation Plan

RECEIVED BY BPA PUBLIC INVOLVEMENT LOG#: FWIP-015
RECEIPT DATE: AUG 06 2001

Telephone comment by Ginny Kuehn
8/6/2001

Joe Thompson
229 Kootenai Creek Road
Stevensville, MT 59870
(406) 543-3785

1. My concern is first of all that the draft EIS is willing to spend grandiose while nothing is being done to save salmon when in essence we are maintaining the status quo.
2. Study and research are used extensively in the paper, yet we know what it takes to restore the runs.
3. Nothing in the paper convinces me that we can save the salmon without breaching dams (Snake River Dams).
4. Time is of the essence. We don't have time for study and research. These species face extinction.

#1

RECEIVED BY BPA
PUBLIC INVOLVEMENT
PROJECT#: FWIP-016
RECEIPT DATE:
AUG 09 2001

Paula A. Jones
223 S. Lincoln Ave.
Pocatello, ID 83204


RECEIVED BY BPA
PUBLIC INVOLVEMENT
PROJECT#: FWIP-017
RECEIPT DATE:
AUG 09 2001

Marshall Magee
246 Skyline Drive
Pocatello, ID 83204

Bonneville Power Administration,

Quoting from The Fish and Wildlife Implementation Plan Draft EIS (DEIS) "Despite the efforts of the BPA and other regional entities in the Pacific Northwest, some species of fish and wildlife continue to decline." With over 3 billion dollars spent on failed recovery measures I think it is time for BPA to set some new, more effective policies. I want to see the new direction of policy for the BPA to be based on the Weak Stock Focus. I want to see the weakest fish populations saved first. Emphasis should be placed upon breaching the four Lower Snake dams allowing a natural current to carry salmon smolts to the Pacific Ocean. The 4 or 5% of generation capacity these dams provide could easily be made up with conservation measures or through alternative energy sources. As recent as 7-29-01 Idaho Power placed an ad in the Idaho State Journal stating that there had been a 9% drop in power consumption after adjusting for weather and also including 8,171 new residential accounts. The Stateline 300 megawatt Wind Power project is a good start. It not only is supplying environmentally benign power it is also generating jobs and good source of commerce. Instead of wasting another 3 billion dollars, invest it on something that will truly help our region. The four lower Snake dams are in violation of the Clean Water Act. Extinction is not an option, apply and follow the Weak Stock Policy.

Sincerely yours,



Paula A. Jones

Bonneville Power Administration,

Quoting from The Fish and Wildlife Implementation Plan Draft EIS (DEIS) "Despite the efforts of the BPA and other regional entities in the Pacific Northwest, some species of fish and wildlife continue to decline." I want to see the new direction of policy for the BPA to be based on the Weak Stock Focus. I want to see the weakest fish populations saved first. Emphasis should be placed upon breaching the four Lower Snake dams allowing a natural current to carry salmon smolts to the Pacific Ocean. The 4 or 5% of generation capacity these dams provide could easily be made up with conservation measures. As recent as 7-29-01 Idaho Power placed an ad in the Idaho State Journal stating that there had been a 9% drop in power consumption after adjusting for weather and also including 8,171 new residential accounts. The four lower Snake dams are in violation of the Clean Water Act. Over 3 billion dollars has been spent on failed recovery measures. Extinction is not an option, apply and follow the Weak Stock Policy.

Sincerely yours,



Marshall Magee



August 22, 2001

Communications
Bonneville Power Administration
KC-7, P.O. Box 12999
Portland, OR 97212

RECEIVED BY BPA	
PUBLIC INVOLVEMENT	
LOG#:	FUIP-018
RECEIVED:	E:
AUG 23 2001	

Re: Comments on Fish and Wildlife Implementation Plan Draft Environmental Impact Statement (DOE/EIS-0312)

These comments on the Fish and Wildlife Implementation Plan Draft Environmental Impact Statement ("Draft EIS") are offered on behalf of PNGC Power, an energy services cooperative owned by 15 rural electric cooperatives in the Pacific Northwest. In addition to being customers of the Bonneville Power Administration (BPA), these distribution cooperatives are located primarily in rural areas of the Northwest, and have a significant interest in promoting effective fish and wildlife conservation efforts.

We understand that BPA is interested in receiving comments regarding whether the correct range of options and impacts are discussed in the Draft EIS, and whether there is a policy direction or hybrid we would propose from the list provided within that document.

General Comments on the Draft EIS

BPA has taken an ambitious step in trying to accomplish the impossible. This Draft EIS attempts to do what the region has been unsuccessful in trying to do for years: make sense of the layers of regional processes ongoing in the name of Columbia river basin fish and wildlife mitigation. While the document inevitably falls short of that lofty goal, it provides a useful summary of the current status of these issues.

The section of the document on the history of these issues provides interesting context. However, we do not see this section as entirely necessary. There is a danger in attempting to quickly summarize the history of an entire region. History is written, consciously or not, through the filter of those doing the writing. The history of natural resources in our region suffers from incomplete data and inconsistent measurement over time. We find that this summary suffers from those same ailments in addition to suffering from an overemphasis of certain themes. It is not necessary in an EIS.

} #1

A more useful endeavor would be for BPA to take this opportunity to outline the reasons for the lack of policy coordination from which the region suffers. A good effort has been made in this Draft EIS to collect the various laws, agencies, and processes impacting these issues. Why not take the next step to recognize and propose action on the management conflicts occurring between these laws, and between BPA and other federal, state, and tribal entities involved in fish and wildlife management?

} #2

Pacific Northwest Generating Cooperative
711 NE Halsey, Suite 200 • Portland, OR 97232-1268
(503) 288-1234 • Fax (288) 2334 • www.pngc.com

In general, the Draft EIS makes a worthy attempt at achieving part of what it sets out to describe a broad range of fish and wildlife alternatives under consideration in the region for purposes of complying with the National Environmental Policy Act. **However, there is a serious question about the usefulness of the sections of the document that attempt to select a preferred course of action.** This is the danger in trying to create a "forward looking policy-level EIS" in a policy vacuum. This danger is discussed further in the following sections.

#2

BPA Overreaches on the Scope of the Draft EIS

It appears that this EIS has gotten ahead of itself. Unlike preparing an EIS within a more limited geographic boundary and more limited set of issues, preparing an accurate policy EIS where there is no real coordinated policy is an unreachable goal. BPA is trying to fit a round peg into a square hole. The entire array of Columbia Basin fish and wildlife activity is not within the province of BPA's actions, therefore does not lend itself to creation of an EIS for NEPA purposes by BPA. Attempting to create such a policy may only further the attitude that BPA should try to be all things to all people.

#3

This document includes thousands of possible actions, and it groups them into several sets of themes. But, there is no way of knowing which of these actions will actually be proposed, or which combination of these actions will be proposed over the long time frame the EIS anticipates. So, the answer to the first question posed by BPA: "Do we have all of the basic environmental effects for fish and wildlife?" No, you do not.

No one in the region has been able to determine all of the possible environmental effects possible for fish and wildlife. **But, this document does not even try to do so because it relies on previously existing lists of options that have their own limitations and biases.** For example, at one extreme, it lists breaching dams and the potential impacts. But, on the harvest side it only lists eliminating "most" harvest, not "all" harvest with potential impacts on weak stocks. There are many other inconsistencies; the faulty scientific assumptions underlying this list of impacts is discussed further below.

#4

Similarly, it is disturbing that BPA decides to pursue NEPA coverage for actions that are not legal under current law, such as dam breaching. We raised this issue when we first discussed this EIS over a year ago. The explanation from BPA is that this document is supposedly going to serve the region for the next 20 years, so predicting what will be legal at that point is difficult. We do not find this argument persuasive. In judging the speed of the processes to date, BPA will have ample time to pursue NEPA coverage for any proposals (in the event they ever see the light of day in Congress, and assuming that BPA really is an agency in need of NEPA coverage with respect to such proposals that involve actions of the Army Corps of Engineers). **We do not believe that NEPA compels an EIS on actions that are neither legal nor realistic at this point.**

#5

BPA's Policy Scheme is Misguided and Unworkable

BPA proposes six policy directions including Status Quo, Natural Focus, Weak Stock Focus, Sustainable Use Focus, Strong Stock Focus, and Commerce Focus. Then it poses the question:

"Do you have a Policy Direction or hybrid alternative you propose and what are its effects?" In answering this question, the reader is expected to plug preferences into a simplified decision-making model and determine the outcome.

Having advocated, at times side by side with BPA, for inserting some logic and accountability into the fish and wildlife efforts within the region, it pains us to have to ask the obvious question, aside from creating another layer of process in the region, what is BPA trying to accomplish in this Draft EIS? These policy directions have real impacts on real people; they should not be treated as if they were a computer game in which we can simply mix and match options. #10

Is the agency actually expecting to come up with a coordinated and unified policy direction to impose upon the region through this process? Or, if the policy is only for BPA's purposes, then how does BPA expect that the policy direction will be coordinated with the other myriad agencies within the Northwest? BPA seems to be of two minds on these questions. **On the one hand, BPA indicates that it does not intend to unilaterally select a policy direction (Draft Summary p. v, and Draft p. 15). On the other hand, BPA states its intention to identify a preferred alternative in the final EIS (Summary p. xv and Draft p. 16).** #7

If not for this last point, we would be inclined to dismiss the entire section on "Comparison of Alternatives" as a theoretical and academic exercise for testing regional popularity of policy choices. We appreciate BPA's desire to show leadership on these issues. But, the region has already been going through several processes testing the popularity of these choices and is plenty awash in process. The Draft EIS highlights the amount of process and overlapping agency involvement in several beautifully complex charts that speak volumes about the folly of pursuing any unilateral policy direction on this issue (Figures 1-1, 1-2, 1-3, 1-4, 3-2, 3-3, 4-2).

Moreover, it is not at all clear why BPA believes that it needs to cover the entire waterfront of salmon and steelhead recovery tools within this EIS when it is only one of many agencies involved with these issues. One wonders whether having most of the salmon recovery funding for the region imposed upon them (and upon the consumers) has created an unreasonable assumption that BPA must impose an ultimate policy direction regardless of the activity within the rest of the region. #8

Regardless, the real policy options coming out of other processes, especially the 2000 Biological Opinion for the Federal Columbia River Power System and the so-called "All-H Paper", do not and should not fit neatly into the categories offered in this Draft EIS. Of course, assuming that valid categories could be created, and that a valid policy direction could be created, the only reasonable approach would be to pursue a hybrid that recognizes the complexity of the issues at hand. But, those are large assumptions. #9

The problem is that this Draft EIS does not propose valid policy categories because it oversimplifies and mischaracterizes the categories throughout the document. Part of the problem seems to be a fundamental misunderstanding of the issue. For example, it describes a "Commerce Focus" as representing a "libertarian" approach to conservation. In support of this it cites a paper by Pacific Northwest Waterways Association entitled "Saving Salmon in the Pacific Northwest". As one of the entities that co-wrote and signed that paper, we are appalled by this #10

characterization. That paper argued for an "All-H" approach that recognizes the policy and legal conflicts the region faces and asks for some accountability for actual results. As those who have been paying \$435 million per year in electricity rates (over \$3 billion total) to support these fish and wildlife programs, we do not realistically aspire to elimination of that funding for the government effort. However, we would aspire to having some enhanced accountability relating to recovery effects from that investment. As the fiduciary of ratepayers dollars, we would hope that BPA shares our interest in efficient recovery efforts, rather than lumping that concept under a false label of radical free market philosophy. #10

In addition, we are disturbed by the characterization of the "Status Quo" alternative as a no action alternative. While recovery efforts have had mixed results across the basin, the status quo involves an enormous effort mostly paid for with ratepayer dollars. Further, this effort has seen large improvements in mainstem passage. The lack of recognition of those improvements in the Draft EIS is inappropriate in light of the need to engage in an "All-H" effort while being mindful of the legal restriction that BPA be responsible only for effects of the hydro system. #11

There are other labeling issues that concern us throughout this document. For example, the reference to "industry" is misguided. This is used to describe the entire range of economic interests in the region as if they all had a profit motive inconsistent with the health of fish and wildlife (Draft EIS 2.4.2.2). Even more disturbing is that power ratepayers are lumped into this category as if they had no different standing as citizens and as customers of BPA. The fact that most utilities receiving power from BPA are not-for-profit entities serving everyday citizens of the region seems completely overlooked. There is a list of "Major Participants" in fish and wildlife efforts in the region at Draft EIS 1.3.1 on which "Other regional interests" are listed at the bottom almost as an afterthought. Since utilities are nowhere mentioned, we must assume that utilities (including those with major hydroelectric and fish mitigation operations in the region) must fall into this afterthought group. Again, coming from BPA, this view of the customers paying for this EIS is unhelpful in a process that claims to seek regional consensus. #12

There is another misguided aspect to the Draft EIS that we observed. The document seems to propose making a policy decision based on an oversimplified model that melds several separate and outdated sets of scientific results. This includes an unwarranted reliance on the unworkable "Multi-species Framework Process" and reliance on documents that are supported by old and discredited science such as the PATH process. In the past, BPA has argued for better use of better science during the creation and now implementation of the 2000 Biological Opinion. Thus, this Draft EIS so reliant on the stumbling Framework Process is strangely discordant. (Draft EIS 5.3.1) #13

Since the original science has been found wanting, how does BPA presume to achieve accurate results in determining policy choices with a monstrous amalgamation of that science conducted at different times, by different people, for different purposes.

The worst result of this misapplication of the science is that throughout the Draft EIS the action items are presumed to have biological results that are either not proven or are still in the midst of heated debate among the region's scientists. Of course, BPA recognizes the limitations of the science as "not yet sufficiently refined to resolve the many technical difference of opinion..."

(Draft EIS p. 15). But, this deficiency does not deter BPA from the unfortunate repetition of many unproven theories regarding salmon recovery for purposes of this Draft EIS.

We appreciate BPA's perceived need to begin to address NEPA issues. We understand the difficulty of collecting and organizing the large amount of information involved. And, we applaud the goal of moving towards more coordination in the region. However, we believe the agency would be better served if it focused more on how to bridge the gap with other regional entities rather than creating its own new fish and wildlife policy making apparatus that seems destined to conflict with its primary duty to assure the Pacific Northwest an adequate, efficient, economical and reliable power supply. #14

Thank you for this opportunity to comment on the Fish and Wildlife Implementation Plan Draft EIS. We acknowledge the hard work that has gone into this document, and we appreciate your willingness to consider our views.

Sincerely,



Scott Corwin
Manager, Government Affairs
Pacific Northwest Generating Cooperative
503-288-1234

Kuehn, Ginny -KC-7

From: Barbara Birnbaum [barbarabirnbaum@hotmail.com]
Sent: Monday, August 27, 2001 1:20 PM
To: comment@bpa.gov
Subject: Comments on Fish & Wildlife Implementation Plan DEIS

RECEIVED BY BPA
PUBLIC INVOLVEMENT
LOG#: FWIP-019
RECEIVED
AUG 27 2001

TWIMC;

After careful consideration, I am submitting the following suggestions which primarily developed from the "Natural Focus" with some extra emphasis on the "weak stocks."

1. Restore habitat employing both passive and active techniques, particularly in restoring heavily damaged ecosystems.
2. Decrease harvest for all but the very strongest species with close attention to the numbers returning.
3. Discontinue hatcheries.
4. Remove four to six dams, with the ones considered most harmful to weak stocks being given priority in removal.
5. Decrease commercial activity except for the very strongest species.
6. Allow limited tribal harvest of healthy fish and wildlife populations.

#1

I believe the above will benefit both salmon and all the other wildlife species which utilize the same ecosystem.

I further believe that if we are somewhat patient and allow a reasonable timeline for Nature to take advantage of our positive steps, we will ultimately (and not that far off) be able to benefit ourselves with greater harvests of fish and wildlife.

#2

Thank you for this opportunity to express my opinion.

Barbara Birnbaum
2021 4th Ave N Apt A
Seattle WA 98109-2165

Get your FREE download of MSN Explorer at
<http://explorer.msn.com/intl.asp>

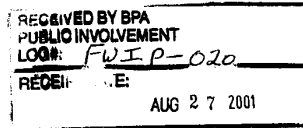
Fish and Wildlife Implementation Plan

Telephone comment by Ginny Kuehn
8/27/01

Joseph Demir
19446 South Myers Road
Oregon City, OR 97045
503-656-1382

Breach the dams and save the fish!

I have been fishing the Columbia River for years and have seen the fish runs go up and down. If we don't breach the dams we will have no spawning grounds for the wild fish.] #1



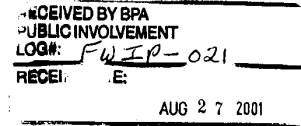
Fish and Wildlife Implementation Plan

Telephone comment by Ginny Kuehn
8/27/01

Karen Carlson
503-590-4557

I have read your EIS report. I like to see some breaching of the dams in five years or less, because the salmon will be extinct in 16 years and we don't have to let them wait to be extinct and having to pay all of the tribes billions of dollars over something we could have prevented.] #2

Thank you.



Fish and Wildlife Implementation Plan

Telephone comments by Ginny Kuehn
8/27/01

RECEIVED BY BPA PUBLIC INVOLVEMENT LOG#: FWIP-022 RECEIVED: E: AUG 27 2001
--

Lester Carlson
503-590-4557

Was reading the draft EIS paper, I guess you folks sent it to me. It concerns me about the spring and summer salmon runs in the Snake River and the steelhead too. For what I can read in this thing, they won't even consider breaching the Snake River Dams for ten years. I would like to see them breached a lot sooner than that. I think those fish might be in trouble and need help sooner than that. So put my word in that I would like to see the dams breached. #1

Thank you.

RECEIVED BY BPA PUBLIC INVOLVEMENT LOG#: FWIP-023
RECEIPT DATE: AUG 30 2001

Curtis Magee
38034 Stenhammer Dr.
Fremont, CA 94536

Bonneville Power Administration,

Quoting from The Fish and Wildlife Implementation Plan Draft EIS (DEIS) "Despite the efforts of the BPA and other regional entities in the Pacific Northwest, some species of fish and wildlife continue to decline." I want to see the new direction of policy for the BPA to be based on the Weak Stock Focus. I want to see the weakest fish populations saved first. Emphasis should be placed upon breaching the four Lower Snake dams allowing a natural current to carry salmon smolts to the Pacific Ocean. The 4 or 5% of generation capacity these dams provide the BPA could easily be made up with conservation measures. The four lower Snake dams are in violation of the Clean Water Act. Over 3 billion dollars has been spent on failed recovery measures. Extinction is not an option, apply and follow the Weak Stock Policy.

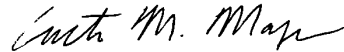
#1

#2

#3

#4

Sincerely yours,



Curtis Magee

BOARD OF COUNTY COMMISSIONERS

LINCOLN COUNTY

STATE OF MONTANA

JOHN C. KONZEN, Commissioner
DISTRICT NO. 2, TROY

CORAL M. CUMMINGS
CLERK OF THE BOARD AND COUNTY RECORDER

RITA R. WINDOM, Commissioner
DISTRICT NO. 1, LIBBY

RECEIVED BY BPA
PUBLIC INVOLVEMENT
LOG# FWIP-024
RECEIVED
AUG 30 2001
MARIANNE B. ROOSE, Commissioner
DISTRICT NO. 3, EUREKA

August 23, 2001

Communications
Bonneville Power Administration-KC-7
P O Box 12999
Portland, OR 97212

RE: BPA Fish & Wildlife Implementation Plan Draft EIS

Thank you for providing me with a copy of the Plan. I have spent some time in the document. I also attended the recent meeting of the Northwest Power Planning Council in Polson specifically to hear the presentation by BPA on the Draft EIS.

To my dismay and disgust, I believe I have squandered a great deal of my time and the taxpayer's money on both endeavors. The plan as presented is a waste of ratepayer's money. What I see here is a dusting off of an old plan and presenting it with a new look. The premise hasn't changed however. **It is the same old stuff!** I could take the time to comment on many areas but, once again, I have done that before many times. #1

Rather than comment on what is in this plan, I am going to comment on what isn't here. Since the focus or emphasis is on *anadromous fish, especially ESA-listed species*, what isn't here is a thorough discussion of the issues regarding resident fish, particularly in the headwaters. Where is the discussion on bull trout, sturgeon, cutthroat, ling, etc? Where is the discussion on prioritizing current needs of fish and making provision for changing priorities to accommodate resident fish? Where is the measurement for success for resident fish? #2

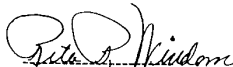
Where is the discussion on flow augmentation effects on the Kootenai River and the residents along the river? Where is the review of the reservoir elevations complete with statistics on harm to aquatic life, resident fisheries, economic concerns, and health issues resultant to dust? Where is the discussion on VAR-Q for Libby and Hungry Horse? The VAR-Q concept is called for under both of the BIOPs yet this EIS fail to examine it. #3 #4 #5

512 CALIFORNIA AVENUE
LIBBY, MONTANA 59923
(406) 293-7781 • (406) 293-8577 Fax
E-mail: lccomms@libby.org

Tribal rights are discussed regarding anadromous fish, but where is the discussion of tribal fishing rights and non-tribal fishing opportunities for resident fish? The Flathead and the Kootenai fishing opportunities are part of our custom, culture, and economic base. #6

In essence, this document treats each of the Libby and Hungry Horse dams as a storage tank with a nice big faucet to be turned on for downstream interests. **Nothing new.**

Sincerely,



Rita R. Windom, Chairman

Cc: Stan Grace, NWPPC



RECEIVED BY BPA PUBLIC INVOLVEMENT LOG#: FWIP-025 RECEIPT DATE: AUG 31 2001
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August 31, 2001

Charles Alton, Project Manager KEC-4
Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208

Subject: Fish and Wildlife Implementation Plan Draft EIS
Bonneville Power Administration

Dear Mr. Alton:

Thank you for the opportunity to review and comment on your Fish and Wildlife Implementation Plan Draft EIS, dated May 2001. The purpose of this document is to provide a comprehensive and consistent approach to fish and wildlife mitigation and recovery efforts associated with Bonneville Power Administration (BPA) management activities in ten Western States and British Columbia.

Non-federal, forested lands within Washington State are covered by the Department of Natural Resources Forest Practices Act (RCW 76.09), which affords protection to forest soils, fisheries, wildlife, water quality and quantity, air quality, recreation, and scenic beauty while maintaining a viable forest products industry (76.09.010 RCW). The first Washington State Forest Practices rules were adopted in 1976 and have been revised many times over the years. In May 2001, the Washington State Forest Practices Board adopted permanent rules implementing the "Forests and Fish Report" passed by the Legislature two years ago. The rules are designed to provide protection for aquatic resources and to ensure compliance with the Endangered Species Act and the Clean Water Act.

The proposed Fish and Wildlife Implementation Plan Final EIS and any associated Biological Opinions should address how Washington State Forest Practices rules will be incorporated into future plans conducted in Washington State. While it is clear that the alternatives described in the EIS are designed to provide general guidance for future BPA operations, it should also be made clear that future site-specific plans on all non-federal forested lands in Washington State will be consistent with Washington State Forest Practices rules, specifically those sites where easements on private and state forested lands in Washington are obtained. We strongly encourage you to require the equivalent or higher protection for salmonids from BPA as provided by the Forests and Fish report

#1

#2

Mr. Alton
Page 2
August 31, 2001

in order to promote consistent and effective salmon recovery efforts by the federal services in the Northwest.] #2

The Forests and Fish report dated April 29, 1999 is available on the Washington State Department of Natural Resources web site at: <http://www.wa.gov/dnr/>, and the revised Forest Practices Rules are currently available on-line at: <http://wsl.leg.wa.gov/pub/wac>; printed copies should be available in mid-September from Patricia Anderson at (360) 902-1413. If you have any questions concerning the Washington Department of Natural Resources comments, please feel free to contact me at (360) 902-1849.

Sincerely,

 Prue Hathaway
Project Administrator

kas

cc. Ashley DeMoss, Assistant Manager
Gretchen Robinson, Project Coordinator

Attachment

Kuehn, Ginny -KC-7

From: Edward B. Sinclair [edsiii@easystreet.com]
Sent: Friday, August 31, 2001 9:43 AM
Subject: Removal of the Snake River Dams

RECEIVED BY BPA
PUBLIC INVOLVEMENT
LOG#: FWIP-026
RECEIVED: AUG 31 2001

I support the removal of the Snake River Dams to save the wild runs of Salmon and Steelhead that are going to be extinct if your timetable for dam removal is adopted.

They need to be taken out immediately.

Edward B. Sinclair
365 SW Breeze Court
Portland, OR 97225
503-203-8255
edsiii@easystreet.com

#1

Columbia Snake River Irrigators Association Policy Memorandum

RECEIVED BY BPA
PUBLIC INVOLVEMENT
LOG#: FWIP-027
RECEIVED: AUG 31 2001

COMMENT NOTICE

DATE: August 30, 2001
TO: Attention: Charles Alton, Environmental Project Manager, BPA
FROM: Tom Mackay, President, CSRIA
Darryll Olsen, Ph.D., PNP, CSRIA Board Representative
SUBJECT: Comments on DRAFT EIS, BPA Fish and Wildlife Implementation Plan

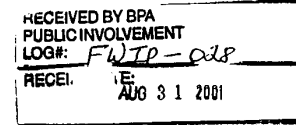
As comment to the BPA Draft EIS for its Fish and Wildlife Implementation Plan, the CSRIA submits to you a copy of the CSRIA proposed amendment to the Northwest Power Planning Council, for the mainstem hydro operations. The BPA is requested to review this amendment and reconsider major operations on the mainstem hydro system relative to the provisions outlined within the proposed amendment.

Specifically, the CSRIA is proposing that the NPPC and region adopt a New Water Management Alternative for the Columbia River Basin. This proposal would: 1) substantially change the current NMFS BIOP flow targets/augmentation program and hydropower operations; 2) provide for an improved funding mechanism to support new water projects—for fish and economic needs—within the tributaries and watersheds; and 3) involve the tribes as equity partners in the development of new water projects.

The CSRIA recommends that BPA managers review the New Water Management Alternative (proposed amendment now being considered by the NPPC) before making final decisions on the agency's implementation plan. There is an opportunity for BPA, working with others, to make significant changes to the existing operating regime to improve hydropower generation and fish and wildlife benefits within the region.

The BPA management should be willing to consider major changes to the status quo, now largely being imposed by NMFS. The BPA must be willing to help lead this effort.

Columbia Snake River Irrigators Association
3030 W. Clearwater, Suite 205-A, Kennewick, Washington, 98336
509-783-1623, FAX 509-735-3140



Charles J. Ferranti
2173 NW Everett St., Apt. #3
Portland, OR 97210
(503) 243-2892

August 31, 2001

BPA
Fish & Wildlife Implementation Plan DEIS
Charles Alton Project Manager – KEC-4
Bonneville Power Administration
P.O. Box 3621
Portland, OR 97208

The Fish & Wildlife DEIS is a large and complex document that tries to bring to light the varied pieces of the Columbia Basin fish and wildlife puzzle. My comments will be restricted to only a minor piece of that puzzle, “other federal agencies,” and will consequently I will not be recommending one alternative rather than another. My comments will focus on the role of forestry, specifically the role of public forestland. Forestlands can play a pivotal role in creating the habitat necessary for a vibrant and diverse native wildlife population. Protection of public forestland is legally feasible, supported by both rural/urban and bi-partisan constituencies and has a low economic impact. No matter what alternative is chosen by the Agency, incorporating increased public forest protection will be the most cost effective method for protecting fish and wildlife. #1

There is a history of observable effects from logging on fish and wildlife populations such as noted on page 22 of the DEIS “1880s-1890s: Effects of mining, logging, farming, and fishing become apparent in declining salmon runs.”

Public Forest Land and Fish&Wildlife

Public forestland provides an important piece of the fish and wildlife protection puzzle. Public forestlands provide both quantity and quality riparian habitat as well as holding potential for increasing the amount of water in the Columbia Basin system.

Forestlands play a vital role in creating sustainable native wild populations of both anadromous and resident fish.

- Figures 5.2 – 5.7 show that forestlands play a vital role in creating and sustaining native wild populations of both fish (anadromous and resident) and wildlife (grouse, bald eagle, migratory nesting waterfowl, deer and elk).
- Healthy forestlands provide high quality riparian habitat and instream habitat; increase the quantity of high quality riparian habitat; and contribute to greater overall watershed hydrologic balance (role of road building and logging in destabilizing landforms is well known and recognized).

The cumulative affect of these factors is to increase the availability of food, shelter and breeding habitat.

Healthy riparian forestlands will increase the inflows of water to the Columbia Basin as a whole.

- Healthy forests reduce the amount of moisture lost to evaporation increasing the inflow of water to the Basin.
- Healthy forests retain more moisture and slowly release that moisture throughout the hot dry summer leading to increased inflow of water into the Basin.
- Healthy forests reduce the amount of water lost during catastrophic rain-on-snow run-off events by distributing the snow on forest canopy and forest floor, distributing the impact of the rain on both forest canopy and forest floor, and finally by providing both mechanical blockage and absorbcency of the peak water flows. This accumulated water will be slowly distributed during the spring, raising the amount of water continuously flowing into the Basin's streams while moderating "peak" flows.
- Healthy forests will transpire water through leaf and needle pores during the summer months; this increased humidity will translate into increased water for the Basin from more frequent summer rain events.

Healthy forestland reduces sedimentation.

- Reducing the rain-on-snow event impact reduces sedimentation within Basin streams.
- Reducing the number of roads within a watershed will reduce the sedimentation within Basin streams.
- Reducing the amount of "managed" forestland will reduce the amount of sedimentation with the Basin streams.
- Healthy forestland reduces the impact of rain events by moderating peak flows, reducing channel-widening events.

Healthy forestland minimized instream temperature swings.

- Healthy forest and riparian areas act to keep instream temperatures cool in the summer months.
- Healthy forest and riparian areas, with their channels kept deep (not widened by peak flows) keep water temperatures cooler in the summer months.
- Healthy forest and riparian areas act to reduce the chilling impact of rain-on-snow events by moderating those events.
- Healthy forest and riparian areas act to moderate the chilling impact of melting snows by lengthening the time between snow melts and melt-water entering Basin streams.

Legal, Political and Monetary Effects

The court system supports greater protection of public forestland. The general public supports greater protection of forestland. Greater protection of public forestland will save money.

Increased protection of public forestland has already been mandated by the Federal court system.

- A quick survey of the last decade's major federal forestland lawsuits (original ESA Spotted Owl lawsuit, Survey and Manage lawsuit against the U.S. Forest Service, PCFFA salmon lawsuit against the National Marine Fisheries, the current spotted owl lawsuit against the U.S. Fish and Wildlife Service) definitively demonstrates that the court system backing increasingly stringent forest protection measures.

- There is no reason to believe the same legal factors (ESA, Clean Water Act etc.) won't soon force state forest land into the same level of compliance demanded of federal forest lands. The current lawsuit against the State of Oregon's forestry practices involves both the ESA and the warning supplied by NMFS (who lost the very similar PCFFA lawsuit).

Increased protection of public forestland enjoys broad public support.

- The USFS Roadless Initiative generated the largest body of public comment with over one million comments.
- Public opinion polling (for both the Roadless Initiative and for old growth protection) has shown large public support for increased protection across the urban/rural and Democrat/Republican divides.

Increased protection of public forestland will save the taxpayers money.

- The USFS admits to losing \$4 million in the Mt. Hood National Forest.
- Taxpayers for Common Sense's audit of the 1998 USFS budget reveal \$100 million lost in Oregon's National Forests, \$43 million lost in Washington's, \$32 million in Idaho's and \$22 million in Montana's due to commercial logging activity.
- The USFS has failed both recent USFS and USDA audits.
- The USFS admits to an \$8 billion dollar road maintenance backlog.
- The General Account Office found the USFS lost \$2.5 billion from 1992-1997.
- There is no reason to believe that the federal dollar losses due to subsidized logging aren't being mimic on the state level.

According to the USDA, the entire National Forest system in 1998 only provided 4% of the nation's wood products. While the Columbia Basin may contribute a large share of that 4%, it can only be a fraction of that 4%.

While a decrease in subsidized logging revenue does impact certain rural counties, the 2000 Wyden-Craig rural school funding bill was passed last year in order to mitigate impacts of reduced logging in federal forest land. The bi-partisan nature of this bill demonstrated that the political climate does currently exist for continued mitigation of public forest protection impacts on rural counties.

Mitigation on protected public forestland can be initially passive while active forest restoration/riparian habitat restoration remains an alternative dependant only on funding and public/legal demand.

Protection of public forestland provides the most cost effective method for fish and wildlife protection that the Agency can support.

Sincerely,



Charles J. Ferranti



SCHWABE, WILLIAMSON & WYATT, P.C.
ATTORNEYS AT LAW

PACWEST CENTER, SUITES 1600-1900 • 1211 SOUTHWEST FIFTH AVENUE • PORTLAND, OREGON 97204-3795
TELEPHONE: 503.222.9981 • FAX: 503.796.2900 • www.schwabe.com

WALTER H. EVANS, III
Admitted in Oregon and
Washington, D.C.
Direct Line: (503) 796-3731
E-Mail: w.evans@schwabe.com

August 31, 2001

RECEIVED BY BPA PUBLIC INVOLVEMENT LOG#: FWIP-039 RECEIPT DATE: SEP 04 2001
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Mr. Charles C. Alton
Environmental Project Manager
Bonneville Power Administration
Communications—KC-7
P.O. Box 12999
905 NE 11th Avenue
Portland, Oregon 97212

Dear Mr. Alton:

The Inland Ports and Navigation Group (IPNG) thanks the Bonneville Power Administration (BPA) for the opportunity to comment on *BPA's Draft Environmental Impact Statement: Fish and Wildlife Implementation Plan* (the Draft EIS). BPA plays a critical and constructive role in the region's efforts to provide energy to a growing population while providing a fish and wildlife program fostering recovery and strengthening of both ESA-listed species and unlisted species in the region.

This draft document is important in the region's ESA fish species recovery debate in the way it presents various options and alternatives, and discusses primary and some other potential and probable resulting impacts from choices made by the region. BPA deserves the strong acknowledgment within the region for this Herculean effort.

Commenters on this document undoubtedly will disagree strongly about parts of the Draft EIS, yet we hope groups across the spectrum salute the effort made by BPA to develop this useful analytical tool. US Government civil servants who worked on this BPA Draft EIS deserve the thanks of the region for their work.

IPNG believes that this draft EIS represents the sort of thinking and analysis that has been lacking in the region over the past decade. Please consider how much farther along the region would be on fashioning and implementing winning strategies if this Draft EIS—even if presented in another format than an EIS—had been developed a decade ago.

In applauding the fine work by BPA and other Federal officials who labored to produce this important report, IPNG, nevertheless and not surprisingly, finds fault with certain ideas as they impact navigation. Our criticism, owever, does not detract from the fundamental benefit from this Draft EIS: it represents a new approach—new thinking “outside the box.” In candor, such thinking and the resulting analysis from the Federal

August 31, 2001
Page 2

Caucus has been too infrequent, if at all, in so many of the tired and predictable linear models examined by the region and its leaders in past years.

IPNG is a group of public ports stretching up the Columbia and Snake Rivers from the Port of Morrow, Oregon, including ports in the Tri-Cities and Walla Walla Washington, and continuing up the Snake River, including those ports to the Port of Lewiston, Idaho. Towing interests, as well, are a part of IPNG.

IPNG has reviewed the entire 537-page document, plus the accompanying reports, summaries and workplans. Most of our specific comments address the special role of navigation on the Columbia Snake system.

Some proposals within the Draft EIS would put navigation in jeopardy; other ideas would curtail it specifically. In sum, IPNG strongly urges BPA to reject any and all analyses or options, recommendations or initiatives that could limit river navigation from the mouth of the Columbia to Lewiston, Idaho. #1

We believe strongly that fish species recovery can take place without breaching the Snake River Dams, and while continuing to operate the navigation channel at minimum operating pool (MOP). IPNG has submitted detailed comments summarizing our ideas and recommendations to BPA and the other Federal for a where public input was requested.

As BPA may recall from IPNG's previous administrative submission, we have endorsed a variety of fish species recovery measures, submitting a number of specific recovery measures and implementation programs that we believe will contribute to recovery of listed fish species. IPNG has supported recovery measures that address both short and medium term requirements. #2

In responding to BPA's request for comments about your Draft EIS, we are not repeating each specific idea, comment or recommendation that we presented earlier. As a result, IPNG may emphasize in this submission what we oppose, rather than our more balanced comments in past submissions to different Federal agencies. Although IPNG discusses worthwhile recommendations at several points in the comments that follow, we do not wish to leave the impression that we are against more than we are for in species recovery.

If BPA officials and staffers are interested in reviewing the full comments submitted by IPNG to different administrative fora, including a lengthy review of measures IPNG supports, please let us know. We would be pleased to meet with you to discuss our ideas in detail.

IPNG member ports are public entities, created by each Northwest State. The Port of Lewiston, Idaho, is a port district created pursuant to the statutes of the State of Idaho. The Ports of Whitman County, Washington, and other Washington public ports located on the Columbia and Snake Rivers, are municipal corporations of the State of

Washington pursuant to Wash. Rev. Code Title 53. The Port of Morrow, Oregon, is a municipal corporation of the State of Oregon pursuant to Or. Rev. Stat. §777.

IPNG ports are specifically authorized by their respective states to promote navigation and economic development. These powers are granted to the Washington ports pursuant to Wash. Rev. Code § 85.100. The Oregon ports are governed by Or. Rev. Stat. § 777.003, *et seq.*, and specifically Or. Rev. Stat. § 777.120. This statute confers upon the Port of Morrow, Oregon, a municipal corporation of the State of Oregon, the power to regulate navigation “in the best interests of the maritime shipping and commercial interests of the port” #3

The Port of Lewiston has been granted broad powers by the State of Idaho including the power to acquire property and to develop facilities and other improvements “relating to industry and manufacturing and to commercial transportation.” Idaho Code, §70-1501. As public bodies of their respective states, each of these ports has expended public funds to develop its port facilities.

Each of these public ports is legislatively authorized, and has developed and constructed commercial port facilities designed to load, store, or discharge waterborne commerce on the inland river system on the Columbia and Snake Rivers. These public entities have used public funds to develop these port facilities. Each of these inland ports is a direct and intended beneficiary of the inland waterway system created by Congress. Each port provides cargo handling facilities or services to the tug and barges that carry cargo on the Columbia/Snake River system. Cargo from these ports enters interstate and foreign commerce, and is exported to numerous different foreign countries.

IPNG includes a private towboat and barge company as a member and in these comments. IPNG member Shaver Transportation Company owns and operates tugs and barges on the inland waterway system and conducts operations within and between the port districts of the Columbia/Snake River system. Shaver Transportation Company is also an intended and direct beneficiary of the inland waterway system. Shaver family members currently operating the company are the fifth generation of their family to provide water-related towing services on the Columbia River system.

The Inland Ports and Navigation Group IPNG was formed for two purposes. The first was to intervene in the “Clean Water Act Lawsuit” a case¹ in US District Court in Portland. This case involves environment advocates led by the National Wildlife Federation who sued the Corps of Engineers alleging a violation of the State of Washington’s Clean Water Act regulations regarding water temperature and dissolved gas standards at the four lower Snake River dams. In granting IPNG’s motion to intervene, the Federal Judge in Portland agreed that IPNG members were “direct and intended beneficiaries” of the Federal dams on the Lower Snake River

¹ National Wildlife Federation et al vs. US Army Corps of Engineers. US District Court of Oregon, No. 99-442-FR

The second IPNG task was to review the various draft documents prepared by Federal agencies and NWPPC and distributed for public comment regarding various fish recovery options. Thereafter, IPNG prepared and submitted comments, both in written comments before various government processes and reviews in the region, and in oral summary form at the regional public hearings.

GENERAL IPNG COMMENTS ABOUT THE FORM AND STRUCTURE OF DRAFT EIS

IPNG finds considerable value in BPA's approach in developing this Draft EIS. IPNG recommends the introductory and summary materials presented in its lengthy analysis as a tightly written summary of where the region finds itself. IPNG applauds the statement in the Draft EIS Forward:

"BPA believes that the present course (Status Quo) could be improved by following a comprehensive, coordinated, consistent regional policy that would enhance the efficiencies for fish and wildlife mitigation and recovery."²

More importantly, although other Federal entities have paid lip service to such a goal for its specific process/product, this BPA Draft EIS does its best to meet this goal. The Draft EIS develops its options in a way that offers people of the Northwest the opportunity to integrate various specific options into a broader recovery "plan" and to evaluate their impact within the context of other specific options.

IPNG is disappointed by the failure of BPA to address the role of the ocean in shaping for better or worse the survival of listed species. IPNG notes that "ocean" is not even a category listed in the index of the Draft EIS. IPNG notes the chart³ that describes in bullet form the impacts on the juvenile transformation to adult in the ocean. IPNG suggests that the list of adverse impacts is more extensive than shown on this chart. In addition, much less is known about the impact and timeline of such ocean impacts. The decadal shifts in ocean temperature, for example, has been cited in past weeks in explaining why the 2001 returning level is the largest ever recorded for certain species since Bonneville Dam was built.

BPA spent most of its species recovery money and focus strictly within its service territory and with a narrow view of its workscope. IPNG is pleased that this viewpoint has been replaced by a more holistic "All-H" view. IPNG urges that another H: High Seas, be added to the workscope and funding programs of BPA.

² Bonneville Power Administration Fish and Wildlife Implementation Plan Draft EIS, page Draft ii. Italics in original (Document hereafter referred to as Draft EIS.)

³ Figure 5-2, Examples of Major Environmental Effects Anadromous Fish Life Cycle, Ibid., un-numbered page following page Draft 168.

BPA may spend countless millions on future projects, yet see good news (as in returning adults in August 2001, for example) overwhelm its specific projects, with the good news tied mainly to ocean changes. Conversely, a clearer discussion led by BPA in the region about how adverse ocean conditions can erode recovery successes and erase short-term recovery gains would provide a more sober outlook as to assess future successes and initiatives.

#4

In order to generate and maintain local support for its recommendations, BPA also needs to incorporate worthwhile steps and planning by local fish recovery groups. IPNG recognizes that this draft EIS is a Federal document, not a local guidebook. And yet, a chapter that addresses how local recovery efforts are important in reaching any and all of these goals would have been welcome.

#5

IPNG members have heard, from time to time, anecdotal Federal and/or state criticism of some local fish recovery efforts, both from a technical standpoint regarding work quality, and from what has been termed their less sophisticated approach. IPNG disagrees with such characterization.

Broad local support is required for a successful regional species recovery. Inadequate resources hinder many local fish recovery planning initiatives, yet committed local groups continue to work hard at real world on-the-ground solutions. BPA should encourage such regional and local efforts by folding them into BPA recommendations.

IPNG NAVIGATION COMMENTS PER DRAFT EIS CHAPTER

IPNG will address its specific comments within the context of recovering listed species while protecting navigation to Lewiston, Idaho. We provide our specific comments using the format of the Draft EIS, from Chapter 1 to Chapter 7.

CHAPTER 1: PURPOSE AND NEED FOR ACTION

IPNG agrees with BPA's evaluation of current situation. We agree with the lack of management coordination. We think that the comment that less progress to date stems, in part from, "**Conflicting directives and jurisdictions of regional authorities have meant that funds dedicated to the fish and wildlife mitigation and recovery efforts have often been used less efficiently and effectively than they other wise could have been.**"⁴

IPNG suggests that putting the lack of progress into the context of money spent since passage of the Regional Act would be a useful addition to this paper at this point. The size of ratepayer contributions to regional recovery actions is staggering, compared

#6

⁴ Draft EIS, page Draft 3. (Bold in original)

with the results. Not only have the efforts been overly hydro-centric, BPA-funded projects (via the NWPPC) sometimes responded to outside circumstances rather than the chance to advance species recovery in the most cost-effective way. IPNG recommends including in the Final EIS a discussion of the lack of accountability and measurement standards that, only recently, now are being developed and implemented. IPNG believes that stronger performance standards and higher initial standards in awarding various proposals over the years would have made better use of scarce regional resources. At the same time, IPNG recognizes that many worthwhile projects funded by BPA/NWPPC have resulted in a river system that is fish friendlier in many of the "Hs" categories.

#7

IPNG also suggests that an examination of how narrower thinking within the various regional groups resulted in such a hydro-centric use of funds for nearly 20 years. If harvests had been curtailed more, if habitat restoration had been a higher priority and if hatchery issues had received more attention, we suggest that the region might well have been farther along in recovery efforts.

#8

We believe that the tiered approach for implementing actions is a worthy attempt to being some structure to the implementation phase. Tiered RODs may well allow the public to grasp the scope and the ramifications of matters under review and how they intersect with implementation actions elsewhere within the federal family.

#9

CHAPTER 2: POLICY HISTORY AND AFFECTED ENVIRONMENT

Although outside the specific scope of this Draft EIS, IPNG attaches as an Appendix to its comments a discussion that helps provide context to Draft EIS comments about the Lewis and Clark Expedition. IPNG demonstrates that this was an exploration driven by President Jefferson's search for a navigation route linking the major river systems of the east with the Columbia Snake.

Original documents, particularly the private letter from Jefferson to Lewis, serve to remind policy-makers of the reasons for the Expedition.

IPNG provides this to BPA as Appendix A to these comments for inclusion in any expanded discussion of the Lewis and Clark Expedition in the final EIS.

Second, IPNG provides extensive documentation later in these comments of the statutory basis and case law basis for development of navigation upriver from Portland, Oregon to Lewiston, Idaho. IPNG requests that appropriate references and material be included in the final EIS that acknowledges the unique position navigation holds in development of the Columbia Snake River system. IPNG also encourages BPA review of IPNG's discussion of the intersection of navigation with the Clean Water Act, as we describe later in these comments.

IPNG notes the discussion in Chapter 2⁵ of flood Control. Given the centerpiece role of navigation in developing the current Columbia Snake hydro system, IPNG suggests that a paragraph should be included in the final EIS describing the role of navigation akin to that of Flood Control. #10

IPNG calls attention to the statement in the draft EIS⁶ stating that (in WRDA 1990) environmental protection was a "primary mission" of the Corps: "However, Congress also stated that environmental protection should not interfere with the Corps preexisting duties of navigation improvements and flood control (33U.S.C. Sec 2316(b))." IPNG requests that this reference be included in BPA's final EIS. #11

CHAPTER 3: COMPARISON OF ALTERNATIVES

IPNG agrees with BPA's general description of key regional issues, as described in the table in Chapter 3.⁷ IPNG suggests that a missing issue within major issues 5 through 8 is protection of rural and smaller community economic health. Perhaps a new issue titled 'rural economies' would describe it. It should be broader than BPA's Sub-issue 6-1: "industrial development," as it encompasses a wider set of impacts. We encourage BPA to include this in its final EIS. #12

Figure 3-3 provides a useful tool to the public to see how decisions by BPA integrate with decisions of others, governmental and the public.

Section 3.2.1 Status Quo Policy Direction: IPNG notes that, although it recognizes flaws in continuing the status quo, it would protect navigation by operating reservoirs at MOP and allowing continued economic vitality to the rural and smaller communities east of the Cascades. IPNG believes that the hydro system must be operated in a way that protects navigation as an authorized purpose when the projects were developed, and that administrative actions may not curtail Federal agencies from meeting this requirement. #13

Section 3.2.2 Natural Focus: The devastating impact described in this alternative of "Remov(ing) six dams: McNary, John Day, Lower Granite, Lower Monumental, Little Goose and Ice Harbor" makes any serious discussion of this focus merely an academic one. This is not needed, is counterproductive, and would create a range of environmental disasters without any measure of assurance that it would revive listed species. At a time when BPA is straining under an uncertain energy market, IPNG believes that this focus should be discarded, so that reasonable evaluations of others can be reviewed. #14

IPNG supports decreased commercial and sport fishing harvest as this focus calls for, and puts tribal harvest in a preferred category.

⁵ Ibid., page Draft 35.

⁶ Ibid., page Draft 46. Emphasis added.

⁷ Ibid., page Draft 104.

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Section 3.2.3: Weak Stock Focus: IPNG opposes the element in this 'focus' that calls for "remov(al) of four dams to revive weak stocks." The four Snake dams only even impact a limited number of listed stocks in our river system, and BPA should not narrow its scope to focus on these four species, nor should it be the entity that reignites the dam breaching debate. At a time when energy price increases have hurt every community in BPA's service area, BPA must not ignore its energy responsibilities in providing energy to the region. As has been noted by BPA and others, the four Snake River Dams that this "Focus" would remove provide equivalent energy as that needed by a city the size of Seattle.

IPNG supports decreased commercial and sport fishing harvest as this focus calls for, and puts tribal harvest in a preferred category.

Section 3.2.4: Sustainable Use Focus: Because IPNG believes that fish recovery can be accomplished without the requirement of removing the four Snake River dams, even, as this focus says "including dam removal as a last resort if other measures fail to recover populations." Including this sets up a false equation. In addition, those advocates for dam removal may be less supportive of other worthwhile elements in this Focus if they believe that all it needs is failure, in order to force dam breaching. Everyone in the region will work as hard as possible for different recovery options with increased vigor when dam breaching no longer is on the table.

IPNG does not support increased harvest, as called for in this focus, with the exception for tribal harvest, which it believes should be separated from sport and commercial harvest.

Section 3.2.5: Strong Stock Focus: IPNG hopes that this Focus receives a thorough airing before both policymakers and the public of the Northwest. It represents some fresh thinking. It adheres to one of the principles that IPNG has urged be adopted by the Federal Caucus: where can the region get the greatest bang-for-the-buck in the shortest time in the most efficient way? It suggests that, in chasing weak stock recovery, the government should adopt a philosophy that puts an emphasis on strengthening strong stocks. IPNG suggests that greater attention to this "focus" will produce a welcome debate over how much of the region's money should be spent on recovery of weak stocks versus strengthening the stronger stocks. That is a debate that the region should embrace, particularly in view of the region's limited funds.

IPNG supports this strong stock change of "increasing tribal harvest while maintaining strong stocks." IPNG believes that "decreasing hydro restrictions on hydro operations not effecting strong stocks" is a worthwhile element in a recovery plan.

Section 3.2.6: Commerce Focus: Many aspects of this Focus are ones that IPNG has supported in the past. Yet, even the name "Commerce" evokes a lack of balance that makes this Focus a target to some people. A clearer name is: "Cost-Effective Measures

Focus." IPNG suggests rewriting this section to emphasize its strengths in species recovery.

Section 3.2.7: Hybrid Policy Directions: IPNG supports habitat restoration, as urged by various Focus Policies set out in Chapter 3. IPNG also supports a variety of other recovery measures that it had presented in detail in other administrative submissions (culvert replacement, for example) that it is prepared to discuss in detail with BPA officials if they are interested.

REVIEW OF IMPLEMENTATION ACTIONS

Status Quo Focus: IPNG supports such dam modification measures (4-1)⁸ as are shown to be cost-effective and contribute to improved fish passage. Under Reservoir Levels (4-5)⁹ measures, IPNG opposes any operation of dams on the navigation channel below MOP. It is unclear whether BPA means lowering reservoirs to MOP or below MOP. IPNG believes that existing laws restrict any such effort to lower the pools below MOP. IPNG requests that clarifying the scope of the measure precede any further discussion of this item: lower only to MOP.

Under the next item, Water Quality (4-6), IPNG supports continued release of cold water from Dworshak to lower temperatures in the Snake Reservoirs during hot summer months. IPNG supports the Navigation and Barging element (7-1) of the Status Quo Focus. IPNG urges that this element be expanded to remind readers that exports from the Columbia Basin compete in world markets primarily because of the efficient water transportation system that has made them attractive for many years in world markets.

Natural Focus: IPNG urges in strong terms that this Focus be abandoned without further consideration. The list of sample implementation actions that focus on removing and/or breaching mainstem and Lower Snake dams serves little purpose. It also exceeds any administrative authority in every action that impairs, curtails, or terminates navigation to Lewiston. The options listed under the Hydro section¹⁰ are a wish list of some environmental groups that believe that such risky schemes, somehow, will be the silver bullet that reasonable people acknowledge does not exist.

Sections on Dam Modifications and Facilities, Hydro Operation, Spill, flow, Water Quality, Juvenile Fish Passage and Transportation, Flood Control all contain various far fetched ideas that will divide the region and promote discord, not species recovery.

The Commerce, Power Generation (5-1) section shows BPA a red flag when it acknowledges that "Natural river operations would eliminate the system's load-shaping

⁸ Ibid., Status Quo Measures, page 5.

⁹ Ibid., page 6

¹⁰ Ibid., Natural focus, pages 8-14.

and reduce average energy by taking turbines out of service."¹¹ The next sentence, in light of current energy prices, should be give a toxic shock to anyone at BPA who seriously considers such an extreme measure: "Provide support for increased electrical costs." That is impractical and a foolish pipe-dream of some more extreme advocates who appear to have little understanding of how Congress makes its spending decisions. Alternatively, they believe that BPA ratepayers will accept further rate increases for such support. Such sophistry deserves no more serious review in this Draft EIS context.

If BPA does not reject this Focus, IPNG urges consultation with the Maritime Administration, whose studies rebut the assertion under Transportation, Trucking and Railroads (7-1)¹² urging "Provide support for alternative forms of transportation of agricultural and other products including improved rail service." This would throw good

One MarAd analysis¹³ demonstrated that one barge can move a ton of goods on one gallon of fuel 514 miles. A railroad can move that amount of cargo only 202 miles, and a truck can move a ton of cargo only 59 miles on one gallon of fuel. The MarAd report also says that the average BTU expended per ton-mile equals 433 for water transport and 696 for rail transport.

To move the same amount of cargo as one barge would require 15 rail cars or 60 semi-trucks. A single 15-barge tow (normal for the Mississippi system) would require a freight train 2 3/4 miles long or a line of trucks more than 35 miles long.

The average Columbia River standard tow is four barges. One can either divide the Mississippi total by 4 or multiply the single barge totals by 4 to see that severe regional environmental damage will occur if any attempts were made to transfer cargo movement to rail or truck. BPA may want to interview officials of the Columbia River Gorge Commission to see how they would view the impact on highways and rail facilities from such a move.

In addition, as the MarAd report states, barge movement of cargo produces less air pollution than does rail or truck, thus helping preserve air quality in the region. Even noise is less from barge movement than it is for truck or rail, as barges operate well away from shore in the middle of the channel. Rail and truck transportation routes pass through densely populated areas.

Weak Stock Focus Actions: The Habitat section of this Focus contains a number of worthwhile sample implementation actions worthy of further study and implementation.

¹¹ Ibid., page 14.

¹² Ibid., page 16.

¹³ Environmental Advantages of Inland Barge Transportation, Maritime Administration (publication date not available).

In addition, the sample actions under Predators of Anadromous Fish (1-5)¹⁴ contain a number of ideas that mirror past IPNG recommendations. IPNG has said that effective predator control is a precondition for any effort to get the region to undertake major habitat measures. Too many people know the stories of tern and pikeminnow predation. The Public expects that such predation be controlled before it will consider seriously costly added initiatives that periodically face the region. Without effective predation control, the region risks erosion of the common support for listed species recovery. IPNG has written specifically of tern and pikeminnow predation recommendations and urges that the most effective methods given in this section of the sample actions be implemented without delay.] #18

IPNG recognizes that estuary habitation restoration offers hope for species recovery and urges that cost-effective and proven plans be developed, reviewed and implemented. IPNG believes that deep draft dredging can occur under appropriate environmental constraints. IPNG believes that deepening the channel, when combined with mitigation and restoration activities now under discussion, will make the lower Columbia a cleaner and fish friendlier river than it is today.] #19

Harvest reductions set out under Item 2 of this section deserve implementation in various forms so as to help weak stocks recover. Where harvest is possible, IPNG believes that tribal harvest has priority over sport and commercial lower river fishing.] #20
] #21

The Hydro Section(4) of the Weak Stock Focus opens with “emphasiz(ing) breaching Lower Snake Dams (sample Action).” In so doing, it raises the stakes for further discord and delay, while eroding support and money that is better used for on-the-ground species recovery steps that help recovery efforts. In addition, under the section on Dam Modification and Facilities (4-1)¹⁵, as well as later under 4-2, Hydro Operations, one alternative suggested would be to lower the John Day Reservoir to spillway height, which IPNG also strongly opposes. IPNG would be happy to provide BPA with a copy of its submission to the corps considering moving to Phase II of John Day Drawdown Study. In those comments, IPNG makes a string and compelling case in warning of adverse effects from such a move.] #22

IPNG further suggests that assertions in this Focus section regarding the impact of temperature on Water Quality may be different than what supporters of dam breaching predict. Considerable evidence, some of anecdotal we realize, suggests that summer water temperature in the lower Snake canyon prior to the four Snake Dams was hot, far exceeding in its natural state the CWA temperature standards.] #23

¹⁴ BPA Draft EIS, Weak Stock Focus, pages 5-6.

¹⁵ Ibid., Weak Stocks Focus, page 20

Later, in its discussion of Element 7, Transportation¹⁶ contains in both the navigation section (7-1) and Trucking and Railroads (7-2) the suggested action of eliminating barge transportation to Lewiston, Idaho:

“Maintain(ing) shipments from Port of Lewiston by moving to rail transportation. If rail capacity is inadequate, expand capacity to needed level to replace shipping capacity lost through shutdown of Lower Snake barge transportation. Maintain barge transportation open through the drawdown of John Day Dam by using shallow draft vessels to the Tri-Cities area. (Framework Concept Paper 7B).

#24

This idea does not withstand any reasonable real-world scrutiny, and never would take place. First, the costs of upgrading rail facilities are too great. (As noted, any rail increase would represent cost and environmental problems, as well.) Second, there are inadequate facilities down-river to transfer all the existing cargo to ocean carriers at downriver ports, so further upgrade there would be required. The ability to fund such infrastructure is not apparent to most observers, and public financing runs counter to many discussions of the government’s role in rail transportation.

Reference to “support” we presume, means financial support for the other trucking idea of “provide support for alternate forms of transportation of agricultural and other products including improved rail service (Framework Concept Paper 5). We again call the attention of BPA policymakers to IPNG comments earlier in this document about the adverse fuel costs (higher charges) and adverse environmental consequences of any shift from barge to rail. Lastly, IPNG is baffled what “shallow draft” barges Bpa is mentioning. Is the existing shallow draft barges, unsuitable for use in a pool drawn down well below MOP? Or is it some new mini shallow barges, drawing far less than current shallow draft barges—but impractical and too costly for use on the river.

25

In addition, any discussion of alternative transportation modes ignores another reality: increased costs will kill some cargo movement from the upriver ports. If costs from alternative modes rise higher than any profit margin, the sales simply will not be made. The lower costs of barge transportation make many PNW export products competitive, and this competitive advantage would contract or erode completely if the goods were forced onto more expensive rail or trucks for transportation.

#26

IPNG supports some of the ideas in item 9, Commercial Harvest that would reduce commercial harvest of weak stocks.

IPNG encourages BPA to fund an examination of a one concerning aspect of the use of commercial netting for harvesting. Is the use of netting for commercial harvest a guarantee of weaker stocks after a decade where the larger fish are harvested, and only the smaller fish escape the nets? Could one advance the argument with scientific basis that

#27

¹⁶ Ibid., page 38 and 39.

harvesting the bigger, stronger (?) fish leaving only smaller and weaker (?) fish to continue upstream. IPNG does not recall reviewing any scientific arguments that support or challenge this question. We encourage BPA to provide funding to examine this question.

Sustainable Use Focus: Sample Actions: IPNG includes by reference its earlier arguments about the benefits of habitat restoration, the absolute requirement for Federal agencies to control predation by terns and pikeminnows, and its arguments made in detail in other written submissions urging culvert replacement receive a higher priority than it has been given. Many of the habitat ideas merit implementation. They emphasize the need to step up efforts in this area, and to look for ways that make the most of limited funding. The metaphor of low-hanging fruit and the cliché of bang-for-the-buck both should guide implementation within this Focus.

#28

IPNG supports cost-effective dam modifications in the list of suggested ideas in item 4-1, Dam Modifications and Facilities.¹⁷ Taking steps to improve fish passage at dams on the Columbia and Snake has been a good use of funds, and should continue to receive appropriations from Congress to implement the smart choices still available. In the section on Hydro operation (4-2)¹⁸, IPNG opposes use of any drawdowns below MOP to achieve the goal of increased velocity for fish passage through the reservoirs.

#29

In the section on Transportation (7), the sample actions include "compensate for navigation and barging losses in the event that hydro operations need to be modified to address threatened and endangered species."¹⁹ IPNG opposes this, and has referred to discussion of compensation schemes as "burial payments." So-called compensation schemes also almost always help a few parties and ignore the secondary and tertiary impact of a loss of this essential service. BPA payment plans during the energy price crisis over past months provided some direct payments to impacted workers who lost their jobs. Yet, IPNG has heard considerable anecdotal evidence that secondary and related job losses were not covered in any payment plans of BPA or by the company shutting its doors. IPNG worries that the same narrow scope of relief would be applied here, ignoring the ripple effect in the community from loss of barge transportation. IPNG believes that BPA cannot impose any such modification of the navigation channel as to result in a loss such as described in this section.

#30

Strong Stock Focus: Sample Implementation Actions: IPNG is pleased that this Focus contains no support for altering the existing upriver transportation navigation system.

IPNG also supports many of the habitat actions described in the lengthy conflation under this Focus. In particular, the discussion of Anadromous Fish (1-1) contains some reasonable and thoughtful suggestions that merit further public discussion.

¹⁷ Ibid., Sustainable use Focus Sample Implementation, page 18.

¹⁸ Ibid., page 21.

¹⁹ Ibid., page 36.

The later discussion of Predators of Anadromous Fish (1-5) is weak and incomplete. IPNG believes that predation control is an overarching action item that must be a centerpiece for any and all implementation plans. Failure to address predation effectively will erode public support for other costlier recovery plans, and will hamper even strong fish stocks in the future. Calls for more and better riparian vegetation, without much stronger attacks on devastation caused by terns and pikeminnows, falls far short in this Focus.

#31

Commerce Focus: Sample Implementation Actions: IPNG supports the commitment of this Focus that embraces continued navigation, but repeats its earlier concern that this Focus suffers from a lack of commitment to species recovery, which IPNG supports.

#32

The Dam Modifications and Facilities (4-1)²⁰, however, sets out a number of reasonable improvements that IPNG hopes receive support from BPA. Fish passage, turbine design, and other changes at the dams all merit careful review. IPNG also supports the sample action under Hydro operation²¹ that maintains navigation, and prioritizes research funding to document project-specific effects in anadromous fish, and use best quantification in making project decisions. Because of its proven successes, IPNG supports juvenile transportation, and so it also supports many of the items described in Juvenile Fish Passage and Transportation.²² Aimed at improving fish transportation through the dam system.

#33

IPNG also notes the inclusion under the discussion of sample actions under Flood control (4-9)²³ repeating the importance of the multi-purpose nature of these dams. Also, in the section of the Focus on Transportation (7), IPNG supports the commitment to navigation in keeping with the Federal government's statutory requirements and court decisions. We were pleased to see these ideas included within several parts of the region's framework Concept Paper.

CHAPTER 4: IMPLEMENTATION AND RESPONSES TO CHANGE

IPNG calls attention to Table 4-2-1 that sets out Roles and Responsibilities of specific Federal agencies, noting the references to the Corps of Engineers. IPNG believes that the Draft EIS language describing the Corps role regarding multiple purpose projects might be strengthened.

#34

The discussion by BPA of possible reserve options adds to the understanding of this as a continuing process.

²⁰ Ibid., Commerce Focus, page 10.

²¹ Ibid.

²² Ibid., page 12.

²³ Ibid., page 14.

CHAPTER 5: ENVIRONMENTAL CONSEQUENCES

In its description of “associated environmental effects” as part of its useful and clear introduction to Chapter 5, the issue of increased sedimentation is discussed briefly as an associated impact due to increased flow. IPNG urges a more complete discussion of this issue. IPNG also requests that BPA integrates into its discussion of such examples the consequences on sedimentation from breaching the Lower Snake Dams.

#35

IPNG examined this issue in some detail in its earlier review of the Corps of Engineers Appendices that examined Snake Dam operation choices. If the Lower snake dams were breached, the devastating impact on Lake Wallula in several ways merits a more thorough examination. Sediment trapped behind the Snake dams would be released to settle in Lake Wallula, creating havoc for the paper mill that is among Walla Walla County’s largest taxpayers. Dramatic increases in sedimentation would result, with some of the sedimentation probably damaging and certainly impacting the Wildlife Refuge at the junction of the snake and Columbia Rivers.

A second sedimentation impact meriting greater scrutiny by BPA is breaching is not off the table is the potential release of possibly hazardous material that now are encased in the silt behind the Snake Dams. IPNG discussed this matter in some detail in earlier submissions, and is ready to engage BPA officials win a more complete discussion of this issue. We call the attention of BPA to a short discussion by the Corps in an appendix of its examination of its Snake River dams options.

#36

IPNG’s makes the point that many more examples of associated environmental effects exist that should be put before the public as examining these options.

Later in this chapter, IPNG agrees with the initial sentence²⁴ and further paragraph²⁵warning of the impact of potential introduction of zebra mussels into the Columbia Basin streams. In the opinion of IPNG, this brief discussion does not adequately warn how such introduction could put at risk all basin-wide recovery efforts for species recovery. Although the water quality discussion here is useful, the impact on the food chain of the zebra mussel and its impact on intake pipes, piers and docks and any other structures is severe.

#37

Instead of mapping species recovery action items, the region—and BPA—would spend its time and effort to rid our river system of this dangerous invasive species. The catastrophic impact in the Great Lakes must be prevented from occurring in our river system. The expected arrival of thousands of boat trailers of people retracing the water segments of the Lewis and Clark expedition will offer the chance for zebra mussel transit from infected waters east of the Rocky Mountains into our river system if the region is not diligent. IPNG is concerned that not enough attention is being paid to this growing threat.

²⁴ Ibid., page Draft 161.

²⁵ Ibid., page Draft 165-166.

IPNG opposes efforts to reduce gas supersaturation by dam removal or lowering reservoir levels as described in this chapter.²⁶ Although IPNG realizes that BPA is not urging this as an action item, and is only discussing it as one way to reduce gas damage to fish, we wish to maintain our opposition to this action wherever it appears in the document. Sediment, IPNG also notes, can be reduced by keeping the lower Snake Dams, inasmuch as breaching them will create severe sedimentation for a considerable period in Lake Wallula and farther downstream (with finer suspended sediments).

#38

IPNG urges that further discussion²⁷ of temperature extremes also discuss high water temperatures in the Lower Snake Canyon prior to construction of the four Lower Snake Dams. It would remind people of the region that dam removal is not a silver bullet that will lower water temperatures to a level meeting CWA standards.

#39

Along with such invasive species as zebra mussels, BPA is wise to raise²⁸ the adverse impact of non-native plants and animals and their adverse impact on the river system.²⁹

As IPNG has said throughout this paper, it believes that reduced harvest by commercial and slower river sport fishers provides a way to strengthen listed species. Although exaggerating for effect, if the US had allowed a limited bald eagle hunt, and had raised some 'domestic' bald eagles that had intermingled, so that some shooting of wild eagles was permitted up to some set percentage levels, the idea of working to strengthen commercial fishing while recovery measures are in effect makes little sense. After species have recovered and are removed from the ESA lists, then commercial and lower river sport fishing could return. Human activities that describe harvest reduction are actions that point out the rippling effects of permitting commercial and lower river sport fishing in a way that impedes the speed of species recovery.

#40

IPNG thanks BPA for its summary discussion of major environmental consequences for humans from common fish and wildlife actions.³⁰ IPNG examined in some detail the air quality impact in its submission to the Corps regarding the proposed John Day Pool Drawdown. The BPA discussion³¹ is not extensive enough to caution the region about the variety of adverse environmental impacts the region would face as a result of certain actions—most of them supposedly pro-species recovery. BPA's brief discussion of mitigation measures is cursory and ignores severe adverse impacts that would result.

#41

²⁶ Ibid., page Draft 162.

²⁷ Ibid., page Draft 165

²⁸ Ibid., page Draft 167.

²⁹ Ibid.

³¹ Ibid., page Draft 171

The discussion of power generation and transmission, likewise, is welcome in that it raises issues, but its sort discussion merits useful details that offer practical comments about the probable outcome of those actions. #42

IPNG reviewed with careful attention the all-too-brief discussion of the adverse impact from human actions—dam breaching/drawdown—in this chapter.³² Although IPNG agrees with the points made in the bullet points and in the brief discussion following it, IPNG believes that this cursory report overlooks many adverse impacts. The Daft EIS, for example, looks at a few direct impacts, but overlooks secondary and tertiary impacts from dam breaching. We are disappointed that transportation and the complex series of interrelated adverse impacts are not accorded greater attention in this Draft EIS. IPNG is ready to provide added information if BPA wishes. #43

In the discussion of agriculture and forestry and the adverse impact, BPA also gives short shrift to the widespread impact from the loss of water transportation. "Higher costs" may be how an economist sees this issue, but ports and farmers on the ground know that higher costs mean lost sales, as the higher transportation costs cut out the entire profit. IN other words, one cannot assume that only a percentage reduction of each sale will take place if rail or truck imposes steep increases in transportation costs for ag or forest products. The higher transportation cost kills the entire shipment. It is not a process whereby a farmer merely can impose a transportation cost increase—a surcharge-- as a computer-maker might add to the shipping cost paid by a distant computer buyer. #44

IPNG notes with concern that BPA appears to look at secondary impacts from curtailing of commercial fishing in its discussion of human actions:

"In buy-outs or other payment to stop commercial fishing, the owner of the fishing 'right' is fully compensated. However, deckhands, other labor, and coastal communities may still be adversely affected."³³

IPNG is disappointed that this same concern for the farming communities and inland communities did not strike BPA drafters of the EIS as meriting equal consideration as coastal communities and commercial fishing boat deckhands. IPNG also could make a similar argument about the concerns BPA expressed for "Adverse effects on reduced fish populations are decreased revenues, net revenues, and decreased ability to cover costs."³⁴ IPNG suggests that people east of the Cascades facing disruption caused by dam breaching face a similar set of financial problems, yet IPNG found no equivalent concerns expressed for the impact on them or their communities in this document, nor for towboat and barge operators who face similar financial issues. #45

³² Ibid., page Draft 179.

³³ Ibid., page Draft 184. Emphasis added.

³⁴ Ibid., page Draft 185.

As if to call attention to the points above about attention to the secondary impacts of commercial fishing, IPNG calls attention to the next topic for review in the Draft EIS: recreation. IPNG notes that the recreation discussion that examines the impact from breaching contains no discussion of the impact of the people whose marinas are made useless by drawdowns or breaching—as was shown in the comments about the secondary and community impact on commercial fishers and their towns. IPNG suggests to BPA that any discussion of such impacts on fishers be extended to those businesses and towboat and barge companies who face similar economic impact from breaching as would face commercial fishers if all harvesting were halted. #46

IPNG suggests that BPA's discussion of impacts on the pulp and paper industry (among others) focus specific attention on the Boise Cascade plant in Wallula, Washington, and the range of adverse environmental impacts it would face if the Snake Dams were breached. IPNG has commented on this in past submissions, and can provide BPA with details about siltation that the Boise Cascade plant would face. #47

IPNG questions the value of "non-consumptive use"—observing fish and wildlife without also adding to it a description of all those people who enjoy viewing fields of amber waves of grain that would be lost without water and transportation. That is but one example, but it makes the point that this is a slippery issue: "existence values," "option values," and "bequest values" all raise legitimate questions regarding "moral, ethical or religious responsibility toward other living things,"³⁵ as the Draft EIS describes. Yet this is such a subjective issue that it allows for innocent misinterpretation or deliberate manipulation, and should be of less value and importance in a process attempting to impose standards on itself for future public examination and Congressional reporting. That is not to say these are not shared values by all people of the region, as demonstrated by the high level of interest and commitment to helping listed species recover. #48

IPNG agrees that the adverse effects of drawdowns on cultural resources would include those set out in this chapter.³⁶ Protection of cultural resources would take more than planning. The sharply increased costs associated with protecting cultural resources exposed by a drawdown should be among those elements added to this by BPA. #49

IPNG disagrees strongly with the Hydro-oriented action chart, Figure 5-11. Under possible adverse impacts on land,³⁷ BPA lists "constrained transportation and navigation." BPA then includes under the mitigation measures "Efficient transportation practices." IPNG challenges BPA to show that any transportation is "efficient" when compared to barge transportation. #50

³⁵ Ibid., page Draft 201.

³⁶ Ibid., page Draft 203.

³⁷ Ibid., Unnumbered page, the 4th page following page Draft 204.

Replacement transportation would be more environmentally damaging, less fuel efficient, and require costly new infrastructure. In addition, it certainly would damage the “non-consumptive use” values of the Columbia Gorge by imposing hundreds of long trains or thousands upon thousands of trucks down the Gorge to urban and export markets—and returning up the Gorge highway or rail line for more such cargo. Trying to locate and site adequate rail cars for a limited harvest time use would be a logistical nightmare.

If IPNG understands the point of the charts that show direction differences for the Status quo beginning with Figure 5-21,³⁸ Figure 5-21 appears to incorrectly depict the impact from the Natural Focus on navigation. In Figure 5-21, navigation is depicted as having “Lesser Magnitude/Intensity”, whereas trucking and railroad are shown as having a “Greater Magnitude/Intensity.” If we understand these figures correctly, it is baffling. How can dam breaching called for under this Focus be of a lesser magnitude/impact, and how can truck and rail impacts be greater? IPNG believes that any impacts from breaching will be immense. If some other valuation is used that depicts it accurately as having a minor magnitude and intensity, why has it been the center of such a controversy for so long? #51

IPNG requests clarification of the role of navigation in Natural Focus and in Weak Stocks (which also calls for breaching). In the weak Stock Figure 5-22, it measures the impact as less than that for Natural, but this Focus calls for breaching the Lower Snake Dams as an option. IPNG believes that, if it understands the depiction correctly, the Weak Stock depiction is of equal magnitude/intensity as the Natural Focus depiction. #52

To make these issues more confusing, it appears in Table 5.3B “more” means “worse” in one description and “less” means “worse” in all the others. Later, Chart 5.4-1, uses “more” to equal “better” in some illustrations and “worse” in others.³⁹ This is confusing and should be redone. #53

CHAPTER 6: GOVERNANCE

IPNG respects the effort to produce a coherent discussion of governance issues in the context of this Draft EIS. It is a tall task. IPNG agrees with the highlighted sentence in the Draft EIS, “The form that governance takes is less important to the outcome than the degree to which the governing parties are able to act in concert.”⁴⁰ IPNG welcomes the Table 6.1-1 that shows distribution of population and water percentages among the Northwest states. It also helps explain part of Idaho’s position on many water-centric issues.

³⁸ Ibid., unnumbered page, the 1st page following page Draft 218.

³⁹ Ibid., page Draft 260.

⁴⁰ Ibid., page Draft 267.

CHAPTER 7: CONSULTATION, REVIEW AND PERMIT REQUIREMENTS

IPNG thanks BPA for its work in compiling the listing and description of the statutes, executive orders and regulations impacting proposed policy directions. The 20 or so serve as a reminder of the difficulties facing the Federal Caucus in reaching consensus and implementing the types of actions required if the region is to succeed in species recovery efforts. It also is fitting to include it at the conclusion of the Draft EIS, as a sobering reminder of the hurdles, or the statutory and regulatory templates—with which the region's efforts must conform. It also serves to highlight the high professionalism of the federal civil servants and their dedication to push any agreed-upon actions past these statutory and regulatory shoals.

COLUMBIA-SNAKE RIVER SYSTEM NAVIGATION

Turning from the Draft EIS itself, ING wishes to engage BPA in a consideration of the rights of navigation to assist in its preparation of a final EIS for its fish and Wildlife Implementation Plan. Navigation has certain unique protections provided by the US Supreme Court, other Federal courts and by the congress. Understanding these should enable BPA to stay within its legal "sideboards: as it crafts its Final EIS.

} #54

Navigation interests are unique and merit separate status from many other parties in the region. Ports have certain characteristics separating them from many entities in the region from which BPA has heard during this mainstem process. In this context, IPNG does not mean the economic or environmental benefits of navigation, but the statutory basis for its unique status. This sets navigation apart somewhat from other economic interests in the region. Nothing in these comments, however, should imply that IPNG does not recognize the central role the Endangered Species Act and your own authorization also play in the region and in this specific issue.

The Columbia/Snake River inland waterway system was developed by Congressional action with navigation as its centerpiece, pursuant to its powers granted under the commerce clause of the United States Constitution. Congress may pass legislation that not only protects rights of navigation, but it may enlarge them through river and harbor improvements. The power to develop the navigable capacity of the Columbia and Snake Rivers is found under the commerce clause of the United States Constitution. See, e.g., *The Daniel Ball*, 10 Wall. 577, 77 U.S. 557 (1870); *Wisconsin v. Duluth*, 96 U.S. 379 (1877).

After completion of the Bonneville Dam in 1937, the United States Army Corps of Engineers issued a report addressing development of the Columbia and Snake Rivers to Lewiston, Idaho for slack water navigation, flood control and other purposes. H.R. 704,

75th Cong., 3d Sess. 8-11 (1938) (report of the Board of Engineers for Rivers and Harbors). Development of an inland navigation system to Lewiston, Idaho was later approved by Congress. In 1945, Congress not only authorized construction of the McNary Dam, it also authorized the development of an inland navigation system on the Snake River:

... Snake River, Oregon, Washington and Idaho: The construction of such dams as are necessary, and open channel improvements for purposes of providing slack water navigation and irrigation in accordance with the plans submitted in House Document Numbered 704, Seventy-Fifth Congress, with such modifications as do not change the requirement to provide slack-water navigation as the Secretary of War may find advisable after consultation with the Secretary of the Interior and such other agencies as may be concerned.⁴¹

Construction of the Columbia/Snake River inland waterway system was a central part of a federal policy to develop inland ports and navigation. For example, five years later, Congress authorized construction of the John Day and The Dalles Dams, pursuant to Section 204 of the Rivers and Harbors Act of 1950. These dams were authorized “for the benefit of navigation and the control of destructive flood waters . . .” Senate Report No. 1143, issued by the Committee on Public Works in support of the legislation, addressed the importance of the inland water way system:

The Federal program for the improvement of the Nation's rivers and harbors is now in its one hundred twenty-fifth year. During the entire history of this all-important Federal undertaking, the work involved in this program has been under the supervision of the Corps of Engineers, United States Army. The program has produced the best system of inland waterways to be found anywhere in the world and in addition has opened for all forms of navigation

.... The importance of the system of inland waterways is indicated by the vast annual increase in the tonnage and in the variety of commodities that move over these waterways. For each ton of freight that uses the improved inland waterways, there is return to the Nation as a general benefit a saving in transportation costs. While these savings may be considered as a prime factor in the use of the system of inland waterways, another factor just as important is that the improved waterways have to a large extent been responsible for the growth and the development of the interior sections of the country. Low-cost water transportation, on one hand, has enabled a movement of products from the mines, forests, and the farms to a widespread consuming area. On the other hand, it has enabled the distribution, at low cost, of semi-finished and finished products from industrial communities that have been established on these waterways to the consumers spread over almost the entire Nation.⁴²

⁴¹ Rivers and Harbors Act of 1945, §2 (1945).

⁴²U.S. Code Cong. Serv. 2311-12 (1950).

Thus, IPNG has a clear interest in maintaining the legally protected navigation channel depth. IPNG also has a direct interest in BPA decisions, specifically as they may impact navigation from the mouth of the Columbia River to Lewiston, Idaho.

Congress mandated the inland navigation channel at 14 feet. Congress specifically authorized the channel in the Columbia/Snake River “barge navigation project” at 14 feet, at minimum regulated flow, pursuant to Section 203 of the Flood Control Act of 1962:

“Sec. 203. The following works of improvements for the benefit of navigation and the control of destructive floodwaters and other purposes are hereby adopted and authorized to be prosecuted under the direction of the Secretary of the Army and the supervision of the Chief of Engineers in accordance with the plans in the respective reports hereinafter designated and subject to the conditions set forth therein: Provided, that the necessary plans, specifications, and preliminary work may be prosecuted on any project authorized in this title with funds from appropriations hereafter made for flood control so as to be ready for rapid inauguration of a construction program. *Provided further*, that the projects authorized herein shall be initiated as expeditiously and prosecuted as vigorously as may be consistent with budgetary requirements: *And provided further*, that penstocks and other similar facilities adapted to possible future use in the development of hydroelectric power shall be installed in any dam authorized in this Act for construction by the Department of the Army when approved by the Secretary of the Army on the recommendation of the Chief of Engineers and the Federal Power Commission....

COLUMBIA RIVER BASIN

The projects and plans for the Columbia River Basin, including the Willamette River Basin, authorized by the Flood Control Act of June 28, 1938, and subsequent Acts of Congress, including the Flood Control Acts of May 17, 1950, September 3, 1954, July 3, 1958 and July 14, 1960, are hereby modified to include the projects listed below for flood control and other purposes in the Columbia River Basin (including the Willamette River Basin) substantially in accordance with the recommendations of the Chief of Engineers in House Document Numbered 403, Eighty-seventh Congress: *Provided*, that the depth and width of the authorized channel in the Columbia-Snake River barge navigation project shall be established as fourteen feet and two hundred and fifty feet, respectively, at minimum regulated flow.

Asotin Dam, Snake River, Idaho and Washington;
Brucers Eddy Dam and Reservoir, North Fork, Clearwater River,
Idaho;....⁴³

⁴³Flood Control Act of 1962, § 203, P.L. 87-874, 76 STAT. 1173, 1962 Code Cong. and Admin. News 1385, 1400.

The Corps of Engineers is required, therefore, to maintain the level of the reservoirs behind each dam consistent with this Congressional mandate. This entails keeping a 14-15-foot clearance over the top of the lock to permit tug and barge traffic to pass through the dam. 33 C.F.R. § 207.718(e). A minimum navigation channel behind each navigation lock is known as the "Minimum Operating Pool" (MOP). Port facilities have been constructed to accommodate the river levels that are based on this 14-foot mandate.

During the salmon migration the four lower Snake River dams are operated at or near minimum operating pool levels. Thus, the system is operated at its lowest level permitted by federal law. Congress has not authorized any reduction in the navigational minimums for the Columbia and Snake River Inland Navigation Channel. Operation of the Channel at less than 14 feet will impair navigation.

Congress has not waived its sovereign immunity to permit claims resulting in modification of the 14-foot navigational channel. The US Constitution protects the Congressionally mandated Columbia/Snake River inland navigation system and the exercise by Congress of the navigational servitude pursuant to the Commerce Clause. As such, only Congress has the power to order a change or modification to the 14-foot navigation channel. Any administrative recommendation adversely affecting the operation and maintenance of that channel conflicts with this mandate.

Raising the water level of the Snake River by creating reservoirs was required to develop navigation to the extent desired by Congress. None of the Lower Snake dams has any appreciable storage capacity. As BPA is aware, lower Snake dams are run-of-river dams. Two dams usually operate within a three-foot range, and two dams operate within a five-foot range, with the lowest level as the navigational minimum. To challenge river operations which would require levels below MOP is simply to challenge the Corps' authority to maintain the navigational channel as mandated by Congress.

All navigable waters of the United States are subject to a federal navigational servitude, which is superior to rights possessed by the States, Indian nations, or private parties. The nature and scope of the navigational servitude was recently discussed by the United States Supreme Court in United States v. Cherokee Nation of Oklahoma, 480 U.S. 700; 107 S. Ct. 1487; 94 L.Ed.2d 704 (1987). In that case, the Court reviewed a claim by the Cherokee Nation for damage to its fee simple title to certain portions of the riverbed of the Arkansas River in Oklahoma. In 1971 the construction of a federally authorized navigation channel was completed from the mouth of the Arkansas River to Catoosa, Oklahoma (the McClellan-Kerr Project). This Project was approved by Congress in 1946, Act of July 24, 1946, ch. 594, 60 Stat. 634, 635-636.

In that case, the Cherokee Nation claimed that the construction of this navigation channel damaged its proprietary interest in the riverbed of the Arkansas River granted to it earlier by the United States of America, and that it was entitled to just compensation. The Supreme Court refuted this claim:

"[T]he interference with in-stream interests results from an exercise of the Government's power to regulate navigational uses of "the deep streams which penetrate our country in every direction." Gibbons v. Ogden, 9 Wheat. 1, 195 (1824). Though this Court has never held that the navigational servitude creates a blanket exception to the Takings Clause whenever Congress exercises its Commerce Clause authority to promote navigation," Kaiser Aetna v. United States, 444 U.S. 164, 172 (1979), there can be no doubt that "the Commerce Clause confers a unique position upon the Government in connection with navigable waters." United States v. Rands, 389 U.S. 121, 122 (1967). It gives to the Federal Government "a 'dominant servitude,' FPC v. Niagara Mohawk Power Corps, 347 U.S. 239, 249 (1954), which extends to the entire stream and the steam bed below ordinary high-watermark. The proper exercise of this power is not an invasion of any private property rights in the stream or the lands underlying it, for the damage sustained does not result from taking property from riparian owners within the meaning of the Fifth Amendment but from the lawful exercise of a power to which the interest of riparian owners have always been subject." Rands, *supra*, at 123. n.3. See also United States v. Kansas City Life Ins. Co., 339 U.S. 799, 808 (1950); Scranton v. Wheeler, 179 U.S. 141, 163 (1900).⁴⁴

In ruling against the claim for compensation, the Court also stated that the navigational servitude was superior to that of a state's own sovereign interest in its navigable waters.

"Indeed, even when the sovereign States gain "the absolute right to all their navigable waters and the soils under them for their own common use" by operation of the equal-footing doctrine, Martin v. Waddell, 16 PET. 367, 410 (1842), this "absolute right" is unquestionably subject to the "paramount power of the United States to ensure that such waters remain free to interstate and foreign commerce." Montana v. United States, *supra*, at 551. If the states themselves are subject to this servitude, we cannot conclude that respondent - - through granted a degree of sovereignty over tribal lands - - gained an exemption from the servitude simply because it received title to the riverbed interest. Such a waiver of sovereign authority will not be implied, but instead must be "surrendered in unmistakable terms." Bowen v. Public Agencies Opposed to Social Security Entrapment, 477 U.S. 41, 52 (1986), quoting Merrion v. Jicarilla Apache Tribe, 455 U.S. 130, 148 (1982).⁴⁵

The integrity of a navigable channel is protected further by the Rivers and Harbors Act of 1899, 33 U.S.C. § 401, *et seq.* That Act protects navigable rivers from unauthorized obstructions. Section 401 prohibits the construction of bridges, causeways,

⁴⁴United States v. Cherokee Nation of Oklahoma, 480 U.S. at 703-704, 107 S. Ct. at 1489-1490. As discussed in Cherokee Nation, the navigational servitude has been enforced even where dredging damaged privately held oyster beds. Lewis Blue Point Oyster Cultivation Co. v. Briggs, 229 U.S. 82 (1913).

⁴⁵U.S. v. Cherokee Nation of Oklahoma, 480 U.S. at 706-707, 107 S. Ct. at 1491.

dams, dikes and the like over any navigable water of the United States without the consent of Congress and unless plans have been submitted to and approved by the Corps of Engineers. Section 403 of the same title protects the navigable capacity of the navigable waters of the United States.

"The creation of any obstruction not affirmatively authorized by Congress, to the navigable capacity of any of the waters of the United States is hereby prohibited . . ." Section 403 applies to federal agencies and states agencies, as well as to private individuals. United States v. State of Arizona, 296 U.S. 174, 55 S. Ct. 666 (1934).

The four lower Snake River dams provide irrigation and hydropower as well as navigation. The fact that the dams are multiple use dams, however, does not impair the integrity of the navigational servitude. See, U.S. v. Grand River Dam Authority, 363 U.S. 229, 232-233, 80 S. Ct. 1134, 1136-37, 4 L.Ed.2d 1186 (1960), quoting State of Oklahoma ex rel. Phillips v. Guy F. Atkinson Co., 313 U.S. 508, 527-534, 61 S. Ct. 1050, 1060-1063, 85 L.Ed. 1487 (1941).

Congressional intent is clear. The lower Snake River dams were specifically authorized and constructed to create a barge navigation channel. The intent of Congress is clear – these four dams are an intended part of the inland navigation system created by Congress. The 14-foot navigation channel and the operation of the dams, therefore, are protected by the exercise of the navigational servitude by Congress.

Congressionally authorized navigation rights to Lewiston, Idaho, limit actions that any Federal agency can take to those which do not curtail navigation. As BPA is aware, the Federal government will face certain limits as to what it can recommend involving navigation as part of the region's species recovery plan, absent specific Congressional authorization.

In keeping with the tone of these comments focusing on recommendations to BPA regarding its 2000 Mainstem Plan, IPNG's comments are not a "lawyer's brief" repeating to BPA the specific legal standards within which its program must fall.

IPNG wishes to incorporate by reference, however, the applicable laws that define the limits and scope of the ESA, CWA, and such other statutes and implementing regulations that may be relied upon by BPA in proposing administrative actions to implement its Mainstem Plan. The legal "sideboards" of those laws will guide BPA as to what it can implement and what it merely can recommend. Nonetheless, those legal limitations need to be on the table as part of this comment process for review by BPA.

LIMITS TO CLEAN WATER ACT

IPNG also is aware of the importance BPA gives to the Clean Water Act in this Draft EIS. Just examining the index shows 20 separate references throughout the

document, some in passing and some in more detail. IPNG wishes to call to the attention of BPA the unique way that navigation intersects with the Clean Water Act. We hope that the discussion that follows will help guide GBPA officials in drafting the Clean Water Act aspect of the Final EIS in a way that comports with existing limits to CWA. #55

Navigation rights limit application of Clean Water Act. In view of efforts by some parties to integrate the Endangered Species Act and the Clean Water Act, IPNG wishes to bring to BPA's attention certain facts and court holdings addressing navigation's relationship with the CWA.

IPNG currently is an intervener in a lawsuit⁴⁶ in which the scope of the Clean Water Act (CWA) is at issue. Among the issues raised by IPNG was the limit on the CWA when applied to navigation rights. In view of references from some commenters to BPA in this process regarding integration of CWA into ESA-related recovery measures, it is useful to review this one distinct area.

The Clean Water Act recognizes a special role for navigation. At no time during this ESA-salmon process that has engaged the Pacific Northwest for several years has sovereign authority over navigable waters been "surrendered in unmistakable terms." Certainly, the Clean Water Act contains no specific surrender of the navigational servitude. On the contrary, the Clean Water Act specifically states that the "Act shall not be construed as . . . affecting or impairing the authority of the Secretary of the Army to maintain navigation."⁴⁷

This expression of congressional intent has two ramifications. By its terms, the authority of the Corps of Engineers to maintain navigation is not to be impaired by any provision contained in the "chapter," that being Chapter 26 of Title 33 of the United States Code.

This provision also clearly provides that there has been no waiver of sovereign immunity in circumstances that would impair the authority of the Corps to maintain navigation. Nothing in Chapter 26 – i.e. 33 USC §1251- 1376 impairs that "authority." This provision of the Clean Water Act is clear and unambiguous, thus making reference to legislative history unnecessary. (A review of that legislative history, nonetheless, confirms the clear mandate of the provision: "Specifically, the authority of the Secretary of the Army to maintain navigation and under the River and Harbors Act of 1899 is preserved."⁴⁸)

⁴⁶ National Wildlife Federation et al v. US Army Corps of Engineers, US District Court for the District of Oregon, No. CV 99-442 FR.

⁴⁷ 33 U.S.C. § 1371(a)(2)(A). See also 33 U.S.C. § 1344(t). (Emphasis added)

⁴⁸ S. Rep. 92-414, 1972 U.S. Code Cong. & Admin. News, 3751.

Congress did not intend that the Clean Water Act be used to affect or impair operations undertaken for the maintenance of navigation. Congress lawfully authorized these structures pursuant to its Commerce Clause powers. These dams are used to maintain a 14-foot navigational channel. Operations of these dams must protect that channel. For example, state certification for private activities cannot be given where “in the judgment of the Secretary of Army acting through the Chief of Engineers, after consultation with the Secretary of the department in which the Coast Guard is operating, anchorage and navigation of any of the navigational waters would be substantially impaired thereby.” 33 USC §1342(b)(6).

IPNG members support many of the CWA goals, yet the scope of this initiative may well create problems that have not been reviewed as part of the public process within the region. IPNG requests BPA to examine the legal sideboards to both the ESA and CWA that limit their scope. These limits must be maintained and not be blurred in an attempt to broaden the reach of either or both by this proposed integration.

Washington State CWA regulations acknowledge navigation’s unique status. Some commenters may suggest that Washington State CWA regulations require some modification of the operation of the Lower four Snake River dams located within the state of Washington.

Washington regulations provide for protection of the Snake River navigation channel, specifically providing that “commerce and navigation” are uses that are to be maintained on all navigable waters of the State of Washington. A characteristic use of Class A Waters specifically includes “commerce and navigation.”⁴⁹

The State of Washington recognized these commerce and navigation interests are identified as a “characteristic use” for all classes of surface waters within the state of Washington pursuant to Wash. Admin. Code § 173-201A-030. IPNG has a direct interest in seeing that Washington regulations are applied properly and are interpreted to protect the characteristic use of the surface waters of the state of Washington.

The Washington State anti-degradation regulation, Wash. Admin. Code §173-201A-070, clearly provides that existing beneficial uses “shall be maintained and protected and no further degradation which would interfere with or become injurious to existing beneficial uses shall be allowed.” That same regulation provides that where the natural condition of surface waters are of a lower quality than the criteria assigned, the “natural conditions shall constitute the water quality criteria.” In addition, Wash. Admin. Code §173-201A-060 provides a special exemption for fish passage on the Snake and Columbia Rivers.

⁴⁹ WAC 173-201A-030(2)(b)(vi)

Commerce and navigation also are protected by the anti-degradation policy of the same Washington regulation (WAC 173-201A-070). No degradation “which would interfere with or become injurious to existing beneficial uses shall be allowed.”⁵⁰

The Washington anti-degradation policy was reviewed by the United States Supreme Court in PUD No. 1 v. Washington Department of Ecology. In holding that the State of Washington could condition a §1341 certification for construction of a dam on minimum stream flows in order to protect fisheries, the Court noted that water quantity was part of the state’s water quality anti-degradation policy.

Petitioners also assert more generally that the Clean Water Act only is concerned with water “quality,” and does not allow the regulation of water “quantity.” This is an artificial distinction. In many cases, water quantity is closely related to water quality; a sufficient lowering of the water quantity in a body of water could destroy all of its designated uses, be it for drinking water, recreation, navigation, or here as a fishery.⁵¹

Various provisions in the water quality standards of the State of Washington also provide for relief from strict imposition of numerical standards. The anti-degradation regulation provides:

“Whenever the natural conditions of said waters are of a lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria.” WAC 173-201A-070(2).⁵²

Pursuant to WAC 173-201A-060(4)(a), total dissolved gas standards do not apply “when the stream flow exceeds the 7-day, 10-year frequency flood”. When considering the dissolved gas criteria for a fish passage over dams, a complete understanding requires review of WAC 173-201A-060(4)(b) (“the elevated total dissolved gas levels are intended to allow increased fish passage without causing more harm to fish populations than caused by turbine fish passage”), the special fish passage exemption for sections of the Snake and Columbia Rivers stated therein, and subparagraph (c) “nothing in these special conditions

⁵⁰ WAC 173-201A-070(1)

⁵¹ PUD No. 1 v. Washington Department of Ecology, 511 U.S. at 719, 114 S. Ct. 1900, at 1912-13, 128 L.Ed.2d 716, (1994) (emphasis added).

⁵² In Oregon Natural Desert Association v. Dombek, *supra*, the District Court examined whether the term “discharge” under § 401 of the Clean Water Act includes releases from both point and nonpoint-sources. In concluding that it did, the District Court looked at § 502 of the Act which defines the term “discharge.” In overruling of the District Court, the Ninth Circuit relied on §§ 502(12) and 502(16) holding that the term “discharge” includes only point-source pollution and that the nonpoint-source pollution is not regulated by the Act. Water quality limitations can be imposed by a state on intrastate waters once the existence of a discharge has been satisfied. PUD No. 1 v. Washington Department of Ecology, 511 U.S. 700, 128 L.Ed.2d 716, 114 S. Ct. 1900 (1994).

allows an impact to existing and characteristic uses.” Finally, the Washington regulations provide for short-term modifications to both criteria and special conditions pursuant to WAC 173-201A-110.

In addition, the interpretation of the Washington surface water regulations does not establish any violations of those standards by the Corps of Engineers. The State of Washington mandates that commerce and navigation, as designated existing uses of the lower Snake River, be protected by the water quality standards. The 14-foot navigation channel therefore constitutes a limit on the power of the state to further impair commerce and navigation; a sufficient quantity of water to provide a 14-foot navigation channel at minimum regulated flows must be provided at all times.

Navigation rights limit application of the CWA. As this discussion illustrates, various limits constrain a potential Federal goal that is raised throughout several documents in the region by members of the Federal Caucus. These pertain to how CWA and ESA should be “integrated” in implementing species recovery programs.

These references in the various documents and appendices produced by Federal agencies discussed benefits from “integrating” into ESA recovery plans certain CWA-related activities. IPNG asserts that the Federal Government may not use the Clean Water Act to undermine either the existence of dams already protected under the Commerce Clause, or operations necessary to maintain navigation.

IPNG repeats that it appreciates the opportunity to comment on the important work of BPA in developing its Final EIS for its Fish and Wildlife Implementation Plan. Please contact IPNG members or me if BPA officials have any questions.

IPNG attaches as Appendix A to these comments a discussion of how the Lewis and Clark Expedition was viewed by President Jefferson as one with clear commercial goals’ Jefferson repeated how the Expedition’s goal was to find a water-centric transportation route linking the two coasts. Jefferson wrote of opening the country to water navigation “perhaps with a single portage” to link the Columbia to the Missouri and on to a number of East Coast navigable rivers. We call it to the attention of BPA officials.

} #50

Sincerely,

Walter H. Evans, III

WHE:
Attachment A: President Jefferson and the Lewis and Clark Expedition

APPENDIX A

COMMERCE AND NAVIGATION: CENTERPIECES FOR THE COLUMBIA AND SNAKE RIVERS SINCE LEWIS AND CLARK

Inland navigation has been the cornerstone of the Columbia River’s many uses throughout the history of the United States. Today, BPA’s activities cover a wide area, defined roughly by Columbia River Basin. Corps of Engineers dams throughout the Basin are multiple use projects. Yet, the core purpose from the earliest days of this country, has been development of navigation on the river system.

Navigation was the first and most important reason for the Lewis and Clark expedition. Many forces from the 19th century shaped the Pacific Northwest, beginning with reports from the Corps of Discovery’s expedition that traversed the Snake and Columbia Rivers to and from the Pacific Ocean. The Corps of Discovery had as its core responsibility a water/portage/water link between the Missouri and Mississippi in the East and the Columbia in the West. Water transportation linking these two magnificent rivers was the initial task for the Expedition given to Meriwether Lewis by President Thomas Jefferson. Public statements at the time were broader and more general. In his personal letter to Lewis in the spring of 1803, however, Jefferson stressed the true purpose of the proposed expedition:

... “The object of your mission is to explore the Missouri river, & such principal stream of it, as, by it’s course & communication with the water of the Pacific Ocean may offer the most direct & practicable water communication across this continent, for the purposes of commerce....”

“The interesting points of the portage between the heads of the Missouri & the water offering the best communication with the Pacific Ocean should be fixed by observation & the course of that water to the ocean, in the same manner as that of the Missouri....”

“Should you reach the Pacific Ocean inform yourself of the circumstances which may decide whether the furs of those parts may not be collected as advantageously at the head of the Missouri (convenient as is supposed to the waters of the Colorado & Oregon or Columbia) as at Nootka Sound or any other point of that coast; & that trade be consequently conducted through the Missouri & U. S. more beneficially than by the circumnavigation now practiced....”⁵³

⁵³ Letter to Meriwether Lewis from President Thomas Jefferson, April 27, 1803,

Navigation also was an essential part of Jefferson's request to Congress in support of the Lewis and Clark Corps of Discovery. Even the confidential message transmitted to Congress by President Jefferson in January 1803 urging Congressional approval for the mission and its cost (\$2500) referred to navigation and commerce.

This confidential message did not spell out in detail the true goal of the Lewis and Clark expedition. Other documents attribute this to Jefferson's concerns that this confidential document might be leaked to the British government, and Jefferson did not want the British to know the true purpose of the Expedition.

Much of this document of January 18, 1803, dealt with matters on the borders of the existing US territories. Nevertheless, President Jefferson explained to Congress about the role of navigation and commerce in requesting Congressional approval of the Expedition:

The following confidential message was received from the President of the United States, by Mr. Lewis, his Secretary⁵⁴.

CONFIDENTIAL

....

.... It is, however, understood, that the country on that river (Missouri) is inhabited by numerous tribes, who furnish great supplies of furs and peltry to the trade of another nation (i.e.: Great Britain), carried on in a high latitude through an infinite number of portages and lakes, shut up by ice through a long season (i.e.: across Canada).

.... The commerce on that (i.e.: Canadian) line could bear no competition with that of the Missouri, traversing a moderate climate, offering, according to the best accounts, a continued navigation from its source, and possibly with a single portage, from the Western Ocean, and finding to the Atlantic a choice of channels through the Illinois, or Wabash, the lakes and Hudson, through the Ohio and Susquehanna, or Potomac or James rivers, and through the Tennessee and Savannah rivers....

.... While other civilized nations have encountered great expense to enlarge the boundaries of knowledge, by undertaking voyages of discovery, and

(June 20, 1803). The Essential Documents of American History, compiled by Norman P. Desmarais and James McGovern, Providence College. (Emphasis added.) *NB*: Full text of letter attached at end of comments.

⁵⁴ This reference to "Mr. Lewis" in the Congressional report of the day was to Jefferson's Secretary, Meriwether Lewis. In current White House parlance, Lewis would have been called Jefferson's Chief of Staff.

for other literary purposes, in various parts and directions, our nation seems to owe to the same object, as well as to its own interests, to explore this, the only line of easy communication across the continent, and so directly traversing our own part of it, The interests of commerce place the principal object within the constitutional powers and care of Congress, and that it should incidentally advance the geographical knowledge of our own continent, cannot but be an additional gratification....

.... The appropriation of two thousand five hundred dollars, for the purpose of extending the commerce of the United States, while understood and considered by the Executive as giving the legislative sanction, would cover the undertaking from notice, and prevent the obstructions which interested individuals might otherwise previously prepare in its way....⁵⁵

Other documents indicate that the more

The past one hundred years has confirmed that navigation has been the core element of development of the Columbia Basin river system. Navigation has been a centerpiece in the region throughout US history.⁵⁶ This discussion reminds everyone—IPNG, BPA officials and staff, and others in the region-- that the Corps of Discovery set out to determine how commerce between the east coast and the undiscovered west coast could be developed via a water route (and portage) linking the two great river systems.

⁵⁵ Journal of the Executive Proceedings of the Senate of the United States of America, 1789-1873. Proceedings of January 18, 1803, page 439. (Emphasis and explanations added.) *NB*: Full text of communication attached at end of comments

⁵⁶ IPNG acknowledges the historical role in the Columbia River Basin of Native Americans, and realizes that its historical references are to the history of the United States.

Kuehn, Ginny -KC-7

From: Grmshw@cs.com
Sent: Friday, August 31, 2001 3:15 PM
To: comment@bpa.gov
Subject: (no subject)

RECEIVED BY BPA
PUBLIC INVOLVEMENT
LOG#: FWIP-030
RECEIVED: SEP 04 2001

RECEIVED BY BPA
PUBLIC INVOLVEMENT
LOG#: FWIP-031
RECEIPT DATE: SEP 04 2001

2348 Snohomish Ave.
Richland, WA 99352
August 28, 2001

I realize that this is the last day to make comment. I got out my very heavy book describing what you intend to do with the dams. 1-9 says that you intend to take down dams. It is in the middle of farming season. We don't have time to fight. The minute we turn our backs you are ready to pull the trigger on us. Please, we need the dams. This is not the solution. There has got to be some creative minds at the BPA that can come up with a better solution. Pulling down dams will not save the fish. Pulling down dams will not fix an acute energy crisis. Pulling down dams will credit you with creating a food crisis.

#1

There is a right way to do things, but this is not it.

Sincerely,
Melley Grimshaw
111 W. Sagemoor R.
Pasco, WA 99301

Communications
Bonneville Power Administration - KC - 7
P.O. Box 12999
Portland, OR 97212

Comments on Fish & Wildlife Implementation Plan Draft EIS

The first assumption in the Cover Sheet Abstract is that "some species of fish and wildlife continue to decline." I take exception to this statement as the dam counts for the years 2000 and 2001 show increased salmon and steelhead runs if not record runs. Attached is a three year summary of the fish over Bonneville and Ice Harbor dams. Note that the Jack counts indicate strong salmon runs next year. Also, over one million Coho salmon are expected this fall.

#1

The second assumption in the Abstract that "there is no clear scientific answer" for the lack of success in increasing fish runs. Dr. James J. Anderson of the University of Washington School of Fisheries would take great exception to this statement. He looked at the history of ocean cycles in his September 1997 article titled "Decadal Climate Cycles and Declining Columbia River Salmon" published in 1998 in Sustainable Fisheries Conference Proceedings. This 20 page article provides data for the major decadal climate shifts from good to poor in 1925, back to good in 1947, and then to poor in 1977. It would appear that these climate changes, now described as Pacific Decadal Oscillation (PDO), have four known dates in the 20th century, 1925, 1947, 1977, and 1998. Salmon catches in Alaska reflect exactly the opposite trend. Even now, because of poor salmon returns, the Governor of Alaska is trying to have the Kuskokwim Bay & River, and the Bristol Bay declared as disaster areas.

#2

On April 27, 2000 Anderson provided testimony before the U.S. House of Representatives Committee on Resources in Pasco, Washington. He stated the Plan for Analyzing and Testing Hypotheses (PATH) conclusions on needed Snake River dam breaching are based on salmon returns through brood year 1990 and the NMFS Cumulative Risk Initiatives (CRI) conclusions, that salmon are in dire condition and breaching alone will not recover them, are based on runs through 1994. These analyses are based on data that is not representative of current conditions. Most significantly the CRI and PATH Analyses do not reflect the possibility that the ocean can shift quickly into a regime favorable to Columbia River salmon and steelhead.

#3

This cooler upwelling nitrogen and phosphorous rich water in the ocean is providing a strong food chain. The sardine population has increased enough for commercial fishing to be considered off of Astoria.

Since the food chain in the ocean is close to optimum, the food chain in the natal streams need to be upgraded with either salmon carcasses or by fertilizer briquets that are being used by B.C. biologists on Vancouver Island to increase the steelhead and salmon population.

#4

While driving the upper Salmon River in the early sixties, I had to clean my windshield every 5 to 10 miles. While working out of Challis, Idaho in the early eighties my windshield was cleaned once or twice a week. The wild salmon and steelhead smolts were not getting fat. In fact the answer to why the hatchery fish do so well is that they are fed. If the hatchery uses spring or well water, the smolts can be fed continually all winter. They become bigger and stronger than their wild counterparts.

With two of the basic assumptions of this DEIS totally and factually wrong, the only alternative of the DEIS that I can honestly support is Status Quo.

The only concept paper that I can totally support is 26. Murphy & Buchal: Goldendale, Kaiser, Northwest & Reynolds Aluminum?

I particularly support moving all hatchery management to the tribes. The first to go should be the Klickitat hatchery. The tribes hatchery efforts on the Yakima and the Umatilla are outstanding.

Your search for truth in this DEIS needs a reality check with new data input and less "sky is falling" emotion from the 90's.

Sincerely Yours,

Elwin L. Fisk

Elwin L. Fisk

] #5

] #6

Bonneville Dam fish counts:

Spring/Summer Chinook		
Year	Adults	Jacks
1999	64,838	12,713
2000	208,952	34,813
2001	467,974	28,916

Fall Chinook		
Year	Adults	Jacks
1999	242,143	23,482
2000	192,832	55,381
2001	40,008*	7,780*

Steelhead		
Year	Hatchery	Wild
1999	151,448	55,064
2000	199,373	76,161
2001	315,732*	126,527*

Ice Harbor Dam fish counts:

Spring/Summer Chinook		
Year	Adults	Jacks
1999	9,251	3,968
2000	42,539	12,311
2001	186,237	5,400

Fall Chinook		
Year	Adults	Jacks
1999	6,532	3,489
2000	6,509	9,729
2001	465*	82*

Steelhead		
Year	Hatchery	Wild
1999	67,052	13,215
2000	92,392	23,002
2001	35,086*	12,073*

*Counts as of 08/26/01

August 31, 2001

RECEIVED BY BPA PUBLIC INVOLVEMENT LOG#: FWIP-032
RECEIPT DATE: SEP 05 2001

Communications
Bonneville Power Administration
KC-7, P.O. Box 12999
Portland, OR 97212

**Re: Comments on Fish and Wildlife Implementation Plan Draft
Environmental Impact Statement (DOE/EIS-0312)**

The Public Power Council appreciates this opportunity to comment on the Fish and Wildlife Implementation Plan Draft Environmental Impact Statement ("Draft EIS").

BPA has requested comments on the range of options and impacts in the Draft EIS, and whether there is a policy direction or hybrid we would propose from the list provided within that document. In attempting to provide NEPA coverage for any and all future fish and wildlife program expenditures (this does not cover river operations), BPA seeks to untie a daunting Gordian Knot of confusing and conflicting directives, jurisdictions, policies and strategies.

On its face, the DEIS is inconsistent. On one hand, BPA seeks to identify the specific path the region is most likely to take as a unified approach to fish and wildlife mitigation, and states that it must implement a mitigation and recovery strategy even if the region fails to agree on a single policy direction. (Draft/ ES-v) In the forward/update, the DEIS states that it "allows the Administrator an opportunity to review and decide upon a comprehensive, consistent and unified BPA approach to its role in the fish and wildlife mitigation and recovery effort." (5/6/1 Draft/i) #1

On the other hand, the DEIS states that BPA is not unilaterally selecting a policy direction. (Draft/ ES-v)

When BPA initiated this EIS effort, the Multi-Species Framework Process was in high gear. That two-year effort, however, was only able to narrow the number of alternative visions for the Columbia to seven. That should be taken as a dramatic statement of the lack of unity of purpose in the fish and wildlife program. Now the MSFP is considered dead and buried in certain fish and wildlife circles.

The DEIS, however, has resurrected elements of the MSFP and BPA has suggested that it might decide on a mitigation and recovery strategy in its EIS.

Suggested Approach for BPA: Promote Development of a Unified Salmon Management Plan

The DEIS, in the Introduction, provides a very important insight into the fish and wildlife program by describing the reasons for the lack of success to date. These include contrasting values and priorities in the region, no clear scientific answers, conflicting directives and jurisdictions, the absence of a comprehensive and coordinated planning approach and inefficiencies in implementation and funding.

PPC urges BPA to emphasize this description of the problem in the EIS. BPA could and should declare in its final EIS that there are fundamental reasons for the lack of success in the fish and wildlife program that include degraded freshwater habitat but also include issues that lie at the core, the very foundation, of anadromous fisheries management. Further, BPA should declare that many of these problems are not the responsibility of BPA or its customers, nor do they involve operation of the FCRPS. #2

BPA should take a stand that it has a responsibility to fund a unified, coordinated and integrated fish and wildlife program and the lack of such a program constitutes a fundamental problem that must be addressed. Until federal salmon management policies are clarified, there is a danger that BPA will fund measures that prove to be counter-productive (such as hatchery programs that produce fish deemed unworthy of spawning and are not harvestable). BPA should use this EIS and all available means to stress to fisheries managers the importance of resolving their fisheries management challenges. #3

For example, the federal, state and tribal fisheries managers (not BPA) must be held accountable for developing and implementing salmon production and harvest policies that can successfully implement the Endangered Species and Regional Power Acts, treaties with the tribes and Canada, Trust responsibilities and other federal fisheries obligations. See the attached table for a summary of this argument.

BPA can also, in this EIS, comment on its relationship to the institutional Gordian Knot that plagues fisheries and habitat management. How does BPA interpret its responsibilities under multiple federal obligations? It doesn't make #4

sense to focus on one obligation such as the ESA without identifying a strategy to simultaneously implement the other applicable laws, treaties and responsibilities.

It is apparent that BPA does not have the authority to select a national and regional strategy regarding fisheries management policies and strategies: that decision is up to other agencies. BPA should clarify that point.

BPA can and should, however, emphasize the importance of a unified plan in its EIS and use its influence to put and end to funding for uncoordinated, inconsistent and counter-productive measures. The following table provides a shorthand example of the current situation in which various fisheries managers support an approach similar to Alternative A or C, but the status quo is Alternative B. BPA should articulate the consequences of continuing to fund a poorly coordinated and integrated program as illustrated by Alternative B and urge the appropriate agencies and tribes to expedite the formulation of a workable plan.] #5

Thank you for this opportunity to comment on the Fish and Wildlife Implementation Plan Draft EIS. PPC looks forward to working with BPA on this and related issues in the future.

Sincerely,

Robert G. Walton
Assistant Manager

Summary of Suggested Approach for BPA:
Insist that Alternative B is unacceptable.

	Alternative A	Alternative B	Alternative C
Emphasis	Weak stock management	Increased funding for projects; management plan = sum of separate projects.	Strong stock management
Compelling Authority	ESA	BPA's obligation to fund F & W mitigation even without a good strategy.	Tribal treaty and trust harvest obligations
Primary Proponent	NMFS	Recipients of project funding.	Tribes
Implication for BPA Funding	Limited, cautious use of hatcheries means reduced funding for hatcheries and/or changed role. Fund marking of fish as harvest and production management tool. Fund selective fishing measures.	Absence of workable strategy ensures perpetual funding of projects without reaching success. Hatcheries without harvest strategies, clubbing fish to prevent spawning, etc. This in turn continues pressure to spill more and breach dams.	More robust use of hatcheries. Don't fund marking. No selective fishing.
Description of success	Listed populations are neither overfished nor swamped by hatchery fish, a big boost towards ESA recovery. Salmon harvest limited by weak stock management and ability to fish selectively.	Unlikely to lead to success meeting ESA, production or harvest goals. The only winners are recipients of continued funding.	Hatcheries produce fish worthy of spawning naturally so populations can support higher harvest levels.

Kuehn, Ginny -KC-7

RECEIVED BY BPA PUBLIC INVOLVEMENT LOG#:	FWIP-033
RECEIPT DATE:	SEP 06 2001

RECEIVED BY BPA PUBLIC INVOLVEMENT LOG#:	FWIP-033
RECEIPT DATE:	SEP 06 2001

From: Moreland, Molly R - KEC-4
 nt: Wednesday, September 05, 2001 5:07 PM
 : Alton, Charles - KEC-4; Pierce, Kathy - KEC-4; Kuehn, Ginny -KC-7
 Subject: FW: Comments on EIS from Constituents unable to attend meeting

Ginny,
 Please enter these comments (in red font) into the record. These were sent to me via Mark Reller, BPA's Montana liaison.

Thank you.

Molly

-----Original Message-----

From: Reller, Mark D - KR/MSG
 Sent: Tuesday, September 04, 2001 8:44 AM
 To: Moreland, Molly R - KEC-4
 Cc: 'Jean Johnson & Gordon Burns'
 Subject: RE: Comments on EIS from Constituents unable to attend meeting

Those comment were from Gordon Burns and Jean Johnson at Natural Solutions.
 NOTE: I have copied them this email so that now you also have there email. Phone is 406 - 458-6363

Mark

-----Original Message-----

From: Moreland, Molly R - KEC-4
 Sent: Friday, August 31, 2001 4:10 PM
 To: Reller, Mark D - KR/MSG
 Subject: RE: Comments on EIS from Constituents unable to attend meeting

Thanks. These comments will be entered into our official file and considered before the Final EIS. Who shall I say is submitting them? I do not see the name of the proposer and might want to contact him or her about the naturalized bypass systems. I have heard of these mechanisms, but need additional information in order to accurately name and describe them in the EIS.

Molly

-----Original Message-----

From: Reller, Mark D - KR/MSG
 Sent: Wednesday, August 29, 2001 11:55 AM
 To: Moreland, Molly R - KEC-4; Beaty, Roy E - KEWR-4
 Cc: 'Jean Johnson & Gordon Burns'
 Subject: Comments on EIS from Constituents unable to attend meeting

Dear Molly

Hello again from Montana. You noted that if others here in Montana had concerns about the draft EIS to forward them to you and would take them as official comments. I am taking you up on that offer.

Two constituents recently approached me who had concerns that the EIS may not cover alternative proposals to move fish around dams. They are advocates of more natural, surface bypass systems that mimic natural stream conditions. I have searched the Draft EIS CDROM on the phrase "Surface bypass" and found the following references:

Page 259

4-1 Dam Modifications and Facilities
 Capital improvements at the mainstem dams designed to approximate natural conditions (e.g., surface bypass).

Page 271

Provide a variety of passage routes at the remaining mainstem dams... including surface bypass, submerged screens

and spill (Framework Alternative 1,2,3). Provide safe passage for juveniles moving down stream and adults moving upstream at all hydro projects (federal and non-federal) in the basin (Framework Concept Paper 1).

The Corps shall continue to investigate a way to increase entry rates of fish approaching surface bypass/collector entrances (NMFS Biological Opinion 2000 Action Table Dec. 2000).

Page 303

Aggressive passage improvements, including specific passage upgrades for juvenile fish at individual dams. Improvements vary by location, including relocation of bypass outfalls, refined screens and bypass facilities, development of surface bypass, spillway modifications and more effective spill, improved turbine operations and design, predator management, mainstem and estuarine habitat (Final AII-H Paper Dec. 2000).

Page 304

4-3 Spill
 Spill and/or surface bypass to achieve 80% FPE or better through non-powerhouse routes (Tribal Vision).

Page 313

4-8 Adult Fish Passage
 Provide a variety of passage routes at the remaining mainstem dams... including surface bypass, submerged screens and spill (Framework Alternative 1,2,3). Provide safe passage for juveniles moving down stream and adults moving upstream at all hydro projects (federal and non-federal) in the basin (Framework Concept Paper 1; Framework Concept Paper 20).

Page 413

Hydrosystem configuration actions would change the facilities at existing dams to facilitate passage and water quality goals. Examples include new fish ladders, surface bypass structures, other bypass improvements, modified turbines, turbine intake screening systems, and facilities for gas abatement.

After reviewing these citations I am concerned that "surface bypass" may be viewed as a term of art that describes mechanical bypass systems of the type historically used. Based on this concern, and to incorporate the concerns of my constituents, I am asking you to consider their comments in the following way.

First please review my concern on the definition of surface bypass. If you view the definition as more generic and encompassing all types of surface bypass systems please correct the draft text to more explicitly state the intended definition. If you agree with my concern, please add text include more naturalized systems. Second please incorporate in the vast list of alternatives and analysis a section on naturalized bypass systems that strive to mimic the in-stream like conditions. These systems would bypass both adults and juveniles fish of all species. Third please include reference to and analysis of (if available) an alternative mechanism to encourage fish to enter the aforementioned natural surface bypass systems. This alternative mechanism would use directed water velocity to induce fish movement into the naturalized bypass system or other bypass routes. #1 #2 #3

These concerns appear to be already tangentially referenced in the EIS based on the extracted text referenced noted above. Please consider the comments of my constituents as relayed to me when you prepare the EIS for final publication. If you have further questions please call or email and I will attempt to answer them if I can or put in touch directly with my constituents at Natural Solutions - A Dam Site Better.



COLUMBIA RIVER INTER-TRIBAL FISH COMMISSION

729 N.E. Oregon, Suite 200, Portland, Oregon 97232

Telephone (503) 238-0666

Fax (503) 235-4226

August 31, 2001

RECEIVED BY BPA PUBLIC INVOLVEMENT LOG#: FWIP-034 RECEIPT DATE: SEP 06 2001
--

Bonneville Power Administration
Attn: Charles Alton
P.O. Box 3621
Portland, OR 97208-3621

Dear Mr. Alton:

Thank you for the opportunity to review the "Fish and Wildlife Implementation Plan Draft EIS" (DEIS). The DEIS provides helpful direction in coordinating the various programs and policies such as the Regional Act, the ESA and the Clean Water Act. The DEIS also rightly acknowledges conflicting directives and jurisdictions as reasons for the continuing decline of salmon along with conflicting priorities that present themselves. However, the statement that "There is no clear scientific answer to the problem" is misleading.] #1

The DEIS, while not choosing a policy direction, lists elements of several potential policy directions. What it lacks are goals and a decision framework that permits an evaluation of actions in meeting the goals. Bonneville has both funded and participated in a process (PATH) that has successfully been used to assess the effectiveness of actions in meeting goals. This process was designed to lessen uncertainty and facilitate a decision on policy direction. It seems disingenuous for BPA to omit all mention of PATH and then declare that "There is no clear scientific answer to the problem."] #2] #3

CRITFC commissioned some of the PATH members to use the decision framework to evaluate an "All H" approach to salmon recovery. This document (Marmorek et al 2000; attached) is consistent with prior PATH documents and indicates the likelihood of recovery is largely governed by actions taken to substantially reduce hydro related mortality. BPA should acknowledge this and previous PATH analyses in the Final EIS.] #4

Although the DEIS claims that the status quo is unacceptable, it continues to support hydro operations that rely on transportation. Continuing business as usual in the hydro system and shifting focus to the freshwater environment does not represent a departure from the status quo. The Tribes support habitat protection and restoration. However, there was no environmental calamity coincidental with the declines of upriver stocks. Petrosky et al. (2001) found that there were no substantial declines in the fresh] #5] #6

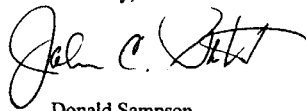
Letter to Mr. Charles Alton
August 31, 2001
Page 2

water survival rates for Snake River spring chinook that would explain the steep declines of these fish.

In the past 12 months, the Commission has provided extensive comments to the Bonneville Power Administration on salmon recovery issues, including briefs and testimony in Bonneville's wholesale power rates proceedings, emergency operations of the hydropower system, and comments on the draft FCRPS Biological Opinion. We also submitted substantial recommendations to the Northwest Power Planning Council for amending its Fish and Wildlife Program to address the operations and configuration of the regional hydropower system. We request that you consider the recommendations contained in these documents and that they be made a part of the record for this EIS.] # 7
] # 8

There is no magic bullet to recovering salmon stocks. But, as discussed in Wy-Kan-Ush-Mi-Wa-Kish-Wit, there are measures specific to particular stocks that would greatly increase the likelihood of survival of those stocks. Wy-Kan-Ush-Mi-Wa-Kish-Wit is based on sound science. BPA should acknowledge the available science. Regional salmon stocks will be further threatened if available studies are ignored and scientific uncertainty is used as an excuse for maintaining the status quo.] # 9

Sincerely,



Donald Sampson
Executive Director

cc: Fish and wildlife committees
Brian Brown, Federal caucus chairman
Steve Crow, NPPC executive director

September 6, 2001

RECEIVED BY BPA PUBLIC INVOLVEMENT LOG#: FWIA-035
RECEIPT DATE: SEP 07 2001

VIA E-MAIL:
comment@bpa.gov
&
FEDERAL EXPRESS

Communications
Bonneville Power Administration - KC-7
Attn: Charles Alton
905 NE 11th Avenue KEC-4
Portland, Oregon 97232

RE: Comments Regarding Bonneville Power Administration Fish & Wildlife Implementation Plan Draft Environmental Impact Statement, KEC-4

Dear Mr. Alton:

On behalf of the Washington Farm Bureau Association, please consider the following comments to the Bonneville Power Administration Draft Environmental Impact Statement.

Bonneville Power Administration Draft Environmental Impact Statement Comments

I. INTRODUCTION

In terms of farm-gate value, farmers and ranchers produce more than \$5.3 billion worth of food and fiber annually in the state of Washington alone. In Washington, there are currently more than 35,000 farms growing at least 230 crops, including hay, cattle, apples and wheat. Agriculture remains the second largest industry in the state. When agriculture and food production are combined, the agriculture industry is the largest employer in the state paying out between \$3 to \$4 million in wages and salaries per year. Even when Boeing Industries was headquartered in Washington, the agriculture industry employed 1.5 times more people than Boeing.

All of the proposed Alternatives listed by Bonneville Power Administration ("BPA") in the Draft Environmental Impact Statement ("DEIS") have the potential to negatively impact the agriculture industry in the state of Washington. Obviously, the Alternatives which propose removal of dams would have a larger negative impact on agriculture than the other Alternatives. However, all of the Alternatives call for more regulatory control of agriculture and land use which will have a great impact on the citizens of Washington.

Currently, agriculture in Washington is showing signs of trouble. For the last several years,

commodity prices have slumped and in some cases, as in the apple crop, the prices have plummeted. For example, the commentators have knowledge of a family apple farmer that is receiving a 1 cent per pound return on the apples his family grew this year even though his costs are 20 cents per pound.

In addition to low commodity prices, the agricultural industry must contend with the high cost of electricity, natural gas, and fertilizer. Furthermore, farmers are in the midst of a drought year and segments of Washington's farmers may not survive. Farmers and ranchers simply cannot afford the environmental regulations suggested by BPA in the DEIS.

It is important to remember that if the country loses the farming industry, the farmers are not the only loss. Farmers provide employment, products for the food processing industry, and products for carriage by the transportation industry which includes the majority of port business in the Seattle area.

Similar to Klamath, Oregon where farmers have been put out of business because of the Endangered Species Act ("ESA"), farmers and ranchers in Washington cannot understand why they are being threatened to be put out of business for a fish that even BPA states is not endangered. It is a basic fairness issue. If the public at large wants to protect fish species then the public at large should shoulder the burden. The burden should not fall upon farmers and ranchers who are facing disaster because of commodity prices, energy costs, and increasing federal regulations.

The Washington farmers are requesting that the issues facing the Pacific Northwest are treated with common sense, fairness, and policies that are based on adequate scientific studies. For example, BPA's assertion that no species of salmon is near extinction lacks common sense when the least sophisticated citizen realizes that some salmon species are near extinction. DEIS at 54. In essence, Pacific Northwest fisheries managers have taken a biologically cautious approach to ESA listings. Small populations within a species have been listed for federal protection when, under a broader definition, the overall species itself is in no danger of extinction. Id.

In 1999, National Marine Fisheries Service ("NMFS") listed three Evolutionary Significant Units ("ESUs") of Northwest chinook salmon as threatened species, and one chinook salmon ESU as an endangered species. The commentators believe that these listings are an unlawful alternative to the ESA's statutory species definition. In fact, NMFS' use of the ESU theory is the subject of litigation in the U.S. District Court for the District of Columbia. Common Sense Salmon Recovery v. Daley, D.C. Cir. 2001, 1:99CV01093(PLF) (complaint will be provided under separate cover).

Under the ESA, a species is endangered if it is in danger of extinction throughout all or a significant portion of its range. 16 U.S.C. §1532(6). A species is threatened if it is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. 16 U.S.C. §1532(20). These chinook salmon are neither endangered nor threatened when identical and abundant salmon from artificial channels or hatcheries are included in the population.

"These fish are not at risk of extinction." An Assessment of The ESA Listing of Columbia River Anadromous Salmonids with Emphasis on Chinook Salmon, Dr. Ernest L. Brannon, PhD (study will be submitted under separate cover). To list salmon and steelhead at risk of extinction is deceptive to the public who have not been made aware of the narrow definition of the terms extinction and species under the NMFS interpretation of the ESA. Topics such as the minimum breeding unit, evolutionary significance, and legacy of the species, are scientific deductions for which great controversy exists in the scientific community.

Currently, there are record numbers of Spring chinook and Summer chinook returning to spawn. On August 17, 2001 the Fish Passage Center, reported that 391,367 adult fish returned to spawn at Bonneville Dam, compared to the 10-year average of 70,775 fish returning. See www.fpc.org. At the last dam where the fish are counted up river, Wells dam, there were 9,994 adult fish returning compared to the 10-year average of 869 fish returning. Id. There are other counts that are similarly spectacular in showing dramatic increases of salmon.

There is no real danger of extinction of a species, yet the DEIS advocates greater use of the ESA and the Clean Water Act ("CWA") to reform land use laws for salmon protection, as well as manage public land for salmon instead of for multiple use. The DEIS appears to hijack every possible law to protect a species that is not endangered according to BPA, the law, or fish biologists. The DEIS advocates massive social engineering under the guise of fulfilling protection of a species that is not actually endangered.

#6

It is illogical to pay taxes to implement protection for a fish species that is not endangered. BPA has spent \$3.48 billion since 1978 on fish issues. From 1996 to 2000, BPA spent over \$200 million per year in fish and wildlife program costs, reimbursable expenses paid to the U.S. Treasury for other federal agencies' operation and maintenance of fish hatchery and passage facilities, and debt service on capital investments such as bypass facilities and hatcheries. DEIS at 96. Between 2001 and 2006, BPA predicts that it will spend an average of \$300 million annually with the integration of the 2000 Biological Opinions to address the ESA compliance requirements. Id.

#7

Not only is the DEIS advocating the unlawful extension of federal laws for a species that is not endangered, but BPA admits that it is at the cost of millions and billions of dollars. Also, at a time when there is power shortage, the DEIS calls for more reduced power generation. This will have a severe impact on farmers and ranchers throughout the states impacted by the DEIS.

#8

The DEIS is not based on adequate scientific data. Instead, the DEIS is founded upon fuzzy concepts and buzzwords, which seem to gloss over the controversy surrounding those concepts. These concepts are not based upon peer-reviewed science. Instead of science, nature-based biocentric philosophy underpins the dramatic changes in public policy contained throughout the DEIS.

#9

Throughout the DEIS, the policies suggest contravening existing law and policy. The DEIS advocates moving forward to force many people in the rural areas to change their lives in ways that may have severe economic and social impacts. #10

Through their elected officials, Americans agreed on current land management decisions via debate, discussion and tradeoffs that characterize policymaking in a democracy. Americans have not had a debate about abandoning multiple use, sustained yield, and balancing competing uses of public lands in favor of trying to recreate pre-European landscapes which is advocated by the DEIS. #11

If we in America decide to abandon more than a century of law and policy for a radical new approach to land use management based upon biocentrism, the debate should be long, vigorous and held in the open. Major policy changes should not be made by clever processes that sidestep the democratic process. Changing policies by adopting the DEIS is arbitrary and capricious.

II. REQUEST FOR RELIEF

The DEIS for the Columbia Basin prepared by BPA is an inadequate framework and does not meet the statutory requirements of Congress nor the regulatory requirements of the agency. Specifically, the DEIS fails to: (1) quantify goals or the methods used to reach those goals; (2) demonstrate with high quality scientific data that the proposed modifications are necessary to prevent harm to the environment; (3) fully consider the impact of its proposed actions on the social and economic aspects of the human environment and manage the region in a manner that is sensitive to economic efficiency; (4) assess opportunities for mitigation of the social and economic harm of the proposed action; (5) account for the totality of factors which are responsible for problems in resource conditions in the region.

III. PROCESS

BPA drafted the Fish and Wildlife Implementation Plan DEIS: "(1) to evaluate the range of potential Policy Directions and possible implementing and funding actions that the region could decide to take for fish and wildlife mitigation and recovery efforts, (2) to identify what specific path the Pacific Northwest most likely will take as a unified planning approach or as a services of independent actions by involved parties to try to recover fish and wildlife populations in the region, and (3) to determine the environmental consequences of BPA's implementation and funding of the actions that could emerge from that policy." DEIS at 1.

To address these issues, BPA presents six Alternatives (also called "Policy Directions" in the DEIS) which include a no-action alternative. These Policy Directions are:

- (1) Status Quo represents a continuation of the policy direction that the region appears to be following at the present time;
- (2) Natural Focus represents a policy direction that would remove the past major human

intervention in the ecosystem and allow existing fish and wildlife to return to a natural balance without further major human intervention;

- (3) Weak Stock Focus represents a policy that would prevent the extinction of fish and wildlife populations, especially those listed as threatened or endangered under the ESA;
- (4) Sustainable Use Focus represents a policy that would expand the opportunities to harvest fish and wildlife resources and represents a philosophy of building a sustainable relationship between human beings fish and wildlife;
- (5) Strong Stock Focus represents a policy that maintains viable stocks and ecosystems to avoid broader collapse of fish and wildlife populations.
- (6) Commerce Focus represents a policy that emphasizes human intervention to enhance economic value of river uses.

DEIS at Chapter 3.

BPA does not choose any of the Alternatives as a preferred alternative. DEIS at 106. Instead, BPA will allow the BPA administrator to choose the Alternative which BPA will most likely follow. DEIS at 16. #12

IV. PURPOSE

The stated purpose of the DEIS is to:

- A. Facilitate implementation of a regional unified planning approach for fish and wildlife mitigation and recovery efforts that will improve (1) coordination, (2) efficiency, and (3) consistency.
- B. Fulfill statutory, legal obligations under the Regional Power Act, especially BPA's obligations to (1) protect, mitigate, and enhance fish and wildlife, and (2) provide a reliable, adequate, efficient, and economical power supply.
- C. Fulfill the Administration's Fish Funding Principles such that BPA (1) meets all of its fish and wildlife obligations, once established, (2) takes into account the full range of potential fish and wildlife costs, (3) demonstrates a high probability of Treasury repayment, (4) minimize rate effects on power and transmission customers, (5) adopts rates and contracts that are easy to implement, (6) adopts a

flexible fish and wildlife strategy.

- D. Fulfill other obligations under other applicable laws, including (1) federal treaty and trust responsibilities with regional tribes, (2) the Endangered Species Act, (3) the Clean Water Act, and (4) the National Historic Preservation Act.
- E. Promote predictable and stable fish and wildlife costs and competitive rates, enhancing BPA'S ability to provide funding for public benefits and remain competitive in the electric utility marketplace.

DEIS at pp. 7-8.

Furthermore, the introduction states that the DEIS is intended to integrate and complement all of the regional, state and federal efforts. DEIS at ii. So that "[t]ogether, these many processes will coalesce to advance a single preferred alternative that BPA will adopt for fish and wildlife mitigation and recovery in the region." Id.

V. COMMENTS

- 1. BPA makes gross errors in its conclusions regarding rural Washington's history and its affected environment. DEIS at 86. For example, the DEIS states that current economic growth is spurred primarily by growth in the service industry, government and technology industry. However, future growth from the service industry and the government will rely upon the agriculture industry. With the changes proposed in the DEIS there will be insufficient numbers of people left to pay taxes and support the jobs in the government and service industry. Meanwhile, the technology industry has plummeted as indicated by the recent declines in the stock market.

The DEIS touts the service and recreation industries as the future of rural Washington with a major market being California's 30 million people. The DEIS suggests that rural Washington should be a playground for people from elsewhere. However, farmers and ranchers have been in Washington since the beginning of statehood. Many agricultural families are third or fourth generation farmers and ranchers. Yet, the DEIS ignores the importance of Washington's agricultural heritage.

Throughout Chapter 2, the DEIS ignores the fact that agriculture is the second largest industry in Washington. Further, if agricultural producers are combined with food production, the agriculture industry is the largest employer in Washington. Rural Washington as well as other parts of the state are dependent upon agriculture. The DEIS does not provide any economic studies or support for its conclusion that rural Washington should be a service and recreational playground for Californians.

2. The DEIS does not list a preferred alternative. It is impossible for the commentators to adequately determine the effects of all alternatives on the region. Thus, once a preferred alternative is chosen, an additional comment period must be provided. #14
3. The DEIS admits that it used "qualitative" or "relationship analysis (not specific numbers)" to compare Alternatives. DEIS at 101. This is inappropriate as determinations and actions must be based on scientific studies. Any action taken without necessary scientific data is arbitrary and capricious. #15
4. The DEIS admits that "exact actions taken under each Policy Direction, and the precise intensity of those actions, are generally not established at this time." DEIS at 101. The DEIS is leaving the actions that they are going to take a mystery and thus, it is impossible to comment upon same. Any action taken without appropriate notice and comment is arbitrary and capricious. #16
5. The DEIS admits that agriculture is dependent on the irrigation from the Columbia River and dams. DEIS at 94. Only 6% of the Columbia Basin is diverted for irrigation. DEIS at 94. The DEIS admits that agriculture is especially dependent upon Ice Harbor, John Day, and McNary reservoirs. DEIS at 94. However, two Alternatives suggest removing these dams (among others) which is contrary to the need of the people relying upon the agriculture of the region. Removal of the dams is too drastic a measure considering that only 6% of the Basin is diverted for irrigation for agriculture and over 300,000 acres are irrigated by those 3 reservoirs. DEIS at 94-95. #17
6. The DEIS admits that not all the alternatives are within BPA's "current authority to implement." DEIS at 102. The DEIS goes on to discuss that some of the Alternatives could only be implemented if there was a change in the current law. DEIS at 102. It is inappropriate for the DEIS to provide Alternatives that cannot be implemented within the current legal restraints. This would be arbitrary, capricious, and illegal agency action. This is directly in conflict with one of the stated purposes of the DEIS which is to "[f]ulfill statutory, legal obligations...." DEIS at 7-8. #18
7. The DEIS fails to specify the scope of the no action Alternative. DEIS at 110. The DEIS defines the no action Alternative in broad and vague terms so that the commentator cannot determine if it is truly a no action alternative as required by the National Environmental Policy Act ("NEPA"). 42 U.S.C. §§4321-4370e. Therefore, using the Status Quo or no action Alternative as a benchmark to predict future environmental impacts is in violation of NEPA and is arbitrary and capricious under the Administrative Procedure Act ("APA"). #19
8. The DEIS allows the administrator to select a hybrid of any of the alternatives to implement his or her policy direction. DEIS at 116, 140. In addition, this type of approach is #20

inappropriate in that it is impossible for the commentator to comment on the possible environmental impacts of a hybrid alternative yet to be determined by the DEIS administrator. #20

9. Throughout the DEIS there are numerous statements that rely upon and refer to the Interior Columbia Ecosystem Management Project ("ICBEMP"). DEIS at 46, 84, 85, 95. This proposed decision is not final and has been protested. (ICBEMP Protest will be provided under separate cover). Therefore, all reference to and reliance on ICBEMP is improper, arbitrary and capricious. #21

10. The DEIS claims that the last summer chinook commercial fishing season was in 1967. DEIS at 23. However, the media reported in April, 2001 that the Washington state Department of Fish and Wildlife authorized recreational fishing for chinook salmon in the summer of 2001. Other media reports indicated that approximately 17,000 chinook salmon were caught during the 2001 commercial season. Therefore, the DEIS statement is inaccurate. #22

The DEIS indicates that the Status Quo Policy Direction is based on the fact that "no commercial in-river fisheries directed at upper Columbia River spring chinook have occurred since 1977." DEIS at 9. Again, this statement seems to be inaccurate in light of the media reports indicating that commercial fishing took place in 2001.

11. The conclusions in the DEIS are not based on adequate scientifically sound data. Throughout Chapter 2, the DEIS makes sweeping conclusions without supporting documentation. For example, the DEIS states that "there are over 2,500 water bodies that fail to meet the CWA standards" in Oregon, Washington, and Idaho without any data to correlate this statement. DEIS at 41. #23

Also in Chapter 2, the DEIS states that "return flows may be impaired by sediment, agricultural chemicals, or temperature" without any data to correlate this statement. DEIS at 44. In fact, there are scientific studies that indicate that agricultural return flows work to cool the temperature.

The DEIS goes to great length to discuss global warming and how this will effect the species of the area without any site specific data to support these conclusions. DEIS at 78-79. The DEIS fails to take into consideration other possible factors to the decline of fish species in the region, i.e. over fishing. In support of this conclusion, the DEIS lists Appendix F which is somewhat contradictory because it states that global warming is actually increasing some salmon populations.

The DEIS conclusions based on Federal studies are inappropriate as the studies are inadequate and not site specific. For example, the DEIS relies upon the Federal Caucus to

make conclusions regarding dams, irrigation, runoff, mining, etc. DEIS at 77-78. Although the Columbia and Snake Rivers are mentioned, there is no determination as to where the harm has occurred and to what specific species. The DEIS fails to correlate the conclusions with harm to the region. Further, these conclusions contradict other parts of the DEIS which point out that species are improving. See discussion of *Council's 2001 Report on Bonneville Fish and Wildlife Expenditures* and *NMFS Draft White Papers*. DEIS at 12, 48.

The DEIS concludes that "native salmon and steelhead, and many resident fish species are in decline throughout the Columbia River Basin" and that there is significant "extinction risks." DEIS at 79. Furthermore, the DEIS relies on the conclusion that species are in a "death spiral." DEIS at 114. These conclusions ignore data that the projected 2001 Columbia River mouth return is 1,071,200 adults. Joint Staff Report Concerning the 2001 In-River Commercial Harvest of Columbia River Fall Chinook Salmon, Summer Steelhead, Coho Salmon, and Sturgeon, Oregon Department of Fish and Wildlife, Washington Department of Fish and Wildlife, August 2, 2001. This includes 760,500 early stock and 310,700 late stock. Id. This total return would be the largest return since 1986 and would be the second largest run since 1970. Id. The media have reported that nearly 150,000 chinook salmon made their way past the last dam on the Snake River before reaching Idaho. Columbia Basin Bulletin, June 1, 2001. Recently, a University of Washington researcher, Nate Mantua, noted that the Trout Unlimited Study that predicted imminent extinction for Snake River chinook was designed to lead to an extinction forecast. NW Fishletter, May 17, 2001. The study deliberately excluded strong salmon runs from the early 1980's brood years because the time frame showed "anomalously high productivities." Id.

The DEIS relies on the Federal Caucus to conclude that "[a]quatic conditions in the mainstem have been substantially altered by reservoirs." DEIS at 80. This is inappropriate without specific site and species specific data to support this conclusion.

The DEIS operates on the assumption that water temperatures are increased by dams. DEIS at 6. However, the U.S. Army Corps of Engineers state that dam operation have "no significant impact" on river temperatures. AP/Olympian, May 17, 2001.

Throughout the DEIS, in broad sweeping statements, there are conclusions that fish need lower water temperature and certain dissolved gas ratios. However, these statements are not supported with general or scientific studies on the specific needs of ESU's listed.

The DEIS concludes that runs of salmon have "already been decimated by habitat damage (due primarily to destructive mining, grazing, and logging practices in tributary stream watersheds)." DEIS at 27. There is no scientific study cited to support this statement.

The DEIS concludes that hatchery fish have caused genetic damage to wild fish. DEIS at 37. There are no credible scientific studies to suggest that the genetic makeup of hatchery-bred

salmon is different than the genetic makeup of naturally spawning salmon. The differences cited by the NMFS are differences in allele frequencies, resulting from mass production techniques, but do not represent actual genetic differences, or behavior differences that are the result of hatchery rearing. Genetic Identity of Wild and Hatchery-Bred Salmon: A White Paper, James E. Lannan, Professor of Fisheries, Oregon State University. Not only are there no credible scientific studies to suggest that the genetic makeup of hatchery-bred salmon is different than the genetic makeup of naturally spawning salmon, most fisheries biologists concede that it is unlikely that any pure "wild" salmon exist. Hatchery fish, which are the progeny of "wild" fish, have been spawning with "wild" fish for more than 100 years. In March 2000, Stephen Smith, regional hatchery director for the NMFS told the Associated Press that there are probably no "pure" salmon left in the Northwest.

The DEIS concludes that riparian and aquatic ecosystems continue to experience moderate to severe degradation in the region from "logging, grazing, mining, water diversions, dams, and to other human activities...." DEIS at 81. However, in the DEIS there is no specification of which areas and species this conclusion relates to. The DEIS fails to provide scientific data to support this conclusion.

The DEIS states that the "freshwater fish communities are relatively sparse in terms of the numbers of species and families, compared to other parts of the country." DEIS at 83. BPA fails to provide data in which to support this statement. In addition, the DEIS fails to provide information regarding which species they are referring to and the significance of this statement. It is impossible to compare freshwater fish species in one area of the country to another without knowing if the species are similar.

The DEIS concludes that soil productivity is declining due to "agriculture, grazing, trampling, vehicle traffic, and a variety of other human activities." DEIS at 84. BPA fails to provide specific examples to support this conclusion. The DEIS fails to provide scientific data to support this conclusion.

The DEIS inappropriately uses conclusions from a different DEIS to support its conclusions regarding wildlife. DEIS at 85. BPA cannot rely upon an DEIS that studied a particular area and apply it to "other areas of the basin as well" without additional study. DEIS at 85.

In summary, any action taken based on the aforementioned conclusions would be arbitrary and capricious.

12. The DEIS states that BPA will probably "proceed along the lines discussed in the Basin-wide Strategy Paper" to take steps to comply with ESA. DEIS at 41. It is inappropriate and a violation of the APA for an agency to make decisions as to how to act before receiving public comment. Any action taken by BPA without proper public notice and comment is arbitrary and capricious and in violation of the APA. #24

13. NEPA requires that the DEIS recommendations include “detailed statement[s]...on (i) the environmental impact of the proposed action, (ii) any adverse environmental effects...(iii) alternatives to the proposed action, (iv) the relationship between local short-term uses of man’s environment and the maintenance and enhancement of long-term productivity, and (v) any irreversible and ir retrievable commitments of resources....” 42 U.S.C. §4332(C). BPA fails to provide detailed statements regarding any of the five items above. BPA admits that “[c]onsequences are expressed not in terms of exact numbers but, rater, in qualitative terms” which would not comply with the “detailed statements” mandated by NEPA. DEIS at 148. # 25
14. The Bonneville Power Act established BPA in 1937 to facilitate the generation of energy. 16 U.S.C. §832. There is no mention of environmental concerns or mitigation in the original act. The current direction of BPA as evidenced in the DEIS, is contrary to the Congressional scheme of the Bonneville Power Act. # 26
15. The Pacific Northwest Electric Power Planning and Conservation Act (“PNEPPCA”) was passed in 1980 to provide a balance between fish and wildlife resources and the development of energy. 16 U.S.C. §839. The PNEPPCA mandates balance between electric power needs and conservation efforts in the environment. Congress did not intend for fish and wildlife mitigation efforts to supercede human development. The Alternatives proposed by the DEIS fail to provide the necessary balance as mandated by the PNEPPCA. Either the Alternative promotes mitigation measures above those of economical and social effects, or vise versa. # 27
- The PNEPPCA provides for a Pacific Northwest Electric Power and Conservation Planning Council (“Council”) made up of eight gubernatorial appointees. 16 U.S.C. §839b(a)(2)(B). The Council is responsible for preparing a regional conservation and electric power program as well as a program for fish and wildlife. 16 U.S.C. §839b(h)(5) (2001). It is the Council’s objective under the PNEPPCA to make the type of policy directives that BPA is suggesting in the DEIS. Under PNEPPCA, BPA has no authority to make policy decisions, but instead, is mandated to carry them out. 16 U.S.C. §839b(d)(1) (2001). Therefore, the DEIS is beyond BPA’s statutory authority under PNEPPCA and as such, arbitrary, capricious, and an abuse of discretion. # 28
- Under the PNEPPCA, the BPA administrator has to consult with “the Secretary of the Interior, the Administrator of the National Marine Fisheries Service, and the State fish and wildlife agencies of the region, appropriate Indian tribes, and affected project operators...to the greatest extent practicable, coordinate their actions.” 16 U.S.C. §839b(h)(11)(B). There is nothing in the DEIS to suggest that BPA has done this consultation. # 29
16. The Natural Focus, Weak Stock Focus, Sustainable Use Focus, and Strong Stock Focus Alternatives all rely upon an ecosystem approach to management of natural resources. There is no statutory basis for an ecosystem approach. The merits of ecosystem management as a # 30

management option are irrelevant unless Congress has authorized the government agencies to practice such an approach. Congress has not authorized using ecosystem management as the focus of forest and land use management on federal lands. In fact, Congress has recently declined on several occasions to provide its use. Examples include: the refusal by the Senate to ratify the UN Convention on Biological Diversity; the rejection by the 102nd Congress to ratify the National Biological Diversity Conservation and Environmental Research Act; the failure of the 104th Congress to act on the proposed Ecosystem Management Act of 1995; and many Congressional members' opposition to Bruce Babbitt's proposal to make ecosystem protection the fundamental goal of federal land managers in the Pacific Northwest.

The possible merits of ecosystem management are not relevant to this discussion. Nor can a change in management philosophy be justified on that basis. Government agencies are bound to act in accordance with Congressional will and intent, and nowhere does Congress authorize such broad management authority for federal lands or private lands.

17. The ESA requires BPA to consult with the appropriate agencies to determine if its actions effect any endangered species. 16 U.S.C. §1536. The DEIS states that this has been done and the appropriate Biological Opinions have been issued. DEIS at 281. However, the Biological Opinions referred to were not completed with the current Alternatives in mind. BPA must consult with the appropriate agencies under the ESA to determine the extent of their current proposed actions on any endangered species. #31
18. BPA acknowledges that it may need to do additional consultation under the following statutes and Executive Orders: ESA, Fish and Wildlife Conservation Act, National Wildlife Refuge System Administration Act, Migratory Bird Treaty Act, National Historic Preservation Act, Coastal Zone Management Act, Executive Orders 11988 and 11990, Farmland Protection Policy Act, Wild and Scenic Rivers Act, Clean Water Act, Estuary Protection Act, and Watershed Protection Act. DEIS at 281-288. These consultations need to take place with regard to the actions that the DEIS proposes in its final DEIS. Any action taken by BPA without these necessary consultations would be arbitrary, capricious, and an abuse of discretion. #3
19. The DEIS inappropriately includes "Reserve Options for Future Action" which provide "future decisionmakers with the ability to extend or intensify actions already in place." DEIS at 140. As noted by the BPA, the Reserve Options have not been provided to the public for comment which is necessary under the APA. DEIS at 141. Therefore, any use of the Reserve Options prior to public notice and comment would be arbitrary, capricious, and an abuse of discretion. #1
20. The DEIS goes to great length to list types of human activities that effect the following: land use and habitat, water, fish and wildlife, air quality and associated health effects. DEIS at

157-174. However, the DEIS fails to provide supportable scientific data as well as causal links between the human activities and their effect on the Columbia Basin Region. Further, these broad and sweeping effects are not site specific to the Columbia Basin Region, but are merely value judgments on the part of BPA. This broadness is further exemplified with the DEIS's "possible adverse effects" and "possible mitigation measures" with regard to the human factors which effect the environment. DEIS at 157-174 (emphasis added). Without specific data to prove the causal connection, any determination or proposed action based on these conclusions is arbitrary and capricious. #34

21. The DEIS does not discuss concrete social and economic impacts of it proposed Alternatives, but instead makes broad policy statements regarding proposed "possible adverse effects" and "possible mitigation measures." DEIS at 174-204 (emphasis added). BPA must consider opportunities for mitigation of the economic harms as required under 40 C.F.R. §1508.20. The DEIS does not consider specific mitigation and economic harms which would allow the public to be fully informed. For example, the DEIS explains that dam breaching and changed hydrosystems operations would affect agriculture through costs of electricity, irrigation changes, etc. DEIS at p. 181. However, the DEIS fails to specify the dams to be breached and the causal relationship to agriculture. Further, the DEIS fails to take into account the effect any of the proposed actions would have on the economic and social aspects of the region. Without fully explaining the potential social and economic impacts in the DEIS, BPA's proposed actions are arbitrary and capricious. #35
22. The DEIS fails to provide substantive scientific support for its conclusions regarding the adverse economic effects from declining fish and wildlife populations. DEIS at 200. Instead of providing scientific support and causal links between the declining fish and wildlife populations and economic effects, the DEIS makes broad sweeping conclusions. For example, the DEIS states that the possible adverse economic and social effects include: "tribal effects; commercial fishing losses; recreational fishing and hunting losses; aesthetic economic values...; non-use economic values...; and losses associated with feeling of moral or ethical obligation...." DEIS at 200. Without scientific support for these conclusions, these are merely value judgments and, as such, are arbitrary and capricious. #30
23. The DEIS attempts to provide environmental consequences in relation to each Alternative. DEIS tables at 219-223. However, the tables provided fail to produce a clear picture of what types of consequences each Alternative would create. Instead of providing scientific support and concrete data, the DEIS rates each environmental consequence using categories of "less magnitude" and "greater magnitude." In addition, the DEIS fails to provide any explanation as to how the magnitudes were determined. Therefore, any decision based on these tables would be arbitrary and capricious. #37

The same phenomenon can be found in the DEIS' explanation of environmental consequences in the remainder of Chapter 5. DEIS at 225-266. Again, the DEIS creates #38

tables which compare each Alternative with regard to possible environmental consequences. However, the tables and proposed explanations are devoid of supportive scientific data or actual concrete analysis. Instead, the DEIS provides tables which rate possible environmental consequences in the categories of "better" or "worse." Therefore, any decision based on these inadequate tables would be arbitrary and capricious.

#38

24. Throughout the DEIS, BPA advocates the management of public lands for salmon instead of for multiple use. This would be a violation of the National Forest Management Act ("NFMA"), the Federal Land Management Policy Management Act ("FLMPA") and the Multiple Use, Sustained Yield Act ("MUSYA").

#39

25. The DEIS threatens increased regulation by the federal government under the CWA and ESA if the region fails to develop a coordinating plan with state and local government. However, the federal government has limited authority under CWA and ESA and should not exercise excess authority in an attempt to receive cooperation from state or local governments.

#40

26. The DEIS calls for TMDL development and implementation for anadromous fish tributaries within five years. DEIS at 9, 11, 12. TMDL development is controlled by the CWA and should not be inappropriately determined beyond the CWA's authority.

#41

27. The Weak Stock Focus Alternative "emphasize[s] a substantial and explicit tie between water quality compliance efforts and salmon recovery. . . [to] [d]etermine water quality standards for fish habitat." To accomplish this, the DEIS determines that water temperatures should not to exceed 60 degrees Fahrenheit. Further, if standards are not met, land and water managers must take action that will achieve compliance. DEIS at 11-12. Yet, water quality standards are controlled by the CWA and should not be inappropriately determined beyond the CWA's authority.

#42

28. The DEIS fails to take into consideration that its proposed actions implicate the taking of private property. Some of the DEIS proposed Alternatives will cause the taking of private property through restriction on property rights, flooding, drought, or construction. Thus, a takings implication assessment pursuant to Executive Order 12630 should be performed.

#43

Examples of restrictions on property rights that are proposed by the DEIS include:

- (1) The ESA and federal land and resource management plans infer limited road building, grazing restrictions, and more protective riparian buffers. DEIS at 1.
- (2) Take avoidance and critical habitat provisions of ESA would continue to affect agricultural practices. DEIS at 8.
- (3) On private land, programs administered by the USDA and EPA may influence

agricultural practices. DEIS at 8.

- (4) No new development on riparian or natural lands. DEIS at 15.
- (5) Protect high quality aquatic habitat on private lands while allowing restricted use. DEIS at 15.
- (6) Remove some lands from agricultural production and use natural processes to restore lands and water to the extent possible. DEIS at 16.
- (7) Reform and enforce land use statutes governing growth management, forestry practices, and agricultural practices. DEIS at 16, 37.
- (8) Eliminate agricultural practices in riparian areas and farmed wetlands; reduce and manage agriculture in upland areas, especially marginal farmland. DEIS at 17.
- (9) Eliminate grazing in riparian areas. DEIS at 17.
- (10) Federal regulatory efforts would increase to ensure that non-federal land and water use would not continue to degrade fish habitat. This would occur through a combination of increased ESA rule development, increased ESA enforcement and increased CWA enforcement. DEIS at 39.
- (11) Reduce existing permits for water withdrawal. DEIS at 40.

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Kuehn, Ginny -KC-7

RECEIVED BY BPA PUBLIC INVOLVEMENT
LOG#: FWIP-036
RECEIPT DATE: SEP 10 2001

From: maia [maia@clarkston.com]
 Sent: Friday, September 07, 2001 2:39 PM
 To: comments@bpa.gov
 Subject: EIS Comments

In response to the request for comments on the Fish & Wildlife Implementation Plan Draft EIS:

1) The following is submitted for inclusion as a Sample Implementation Action under section 5.2 (Commerce, 5. Power, 5-2. New Generation) of Natural Focus, Weak Stock Focus, Sustainable Use Focus, Strong Stock Focus and Commerce Focus. #1

Install and operate an array of photovoltaic panels on the south-facing slopes near Lower Granite Dam, connected in to existing transmission facilities located at the dam, to relieve regional dependency on hydroelectric power.

2) It is good to see so many of the facets, interests, viewpoints and concerns around this issue of the Environment vs Humans collected and presented in one place. A forum in which each affected human party can see all the other affected human parties, as well as the larger environmental picture, is much needed. I am impressed by the sincere listening that is reflected in the work, especially the extent to which critical perspectives are finally being expressed in appropriate language.

More than anything else, it is the language that I am astonished by and grateful for. In the past I have criticized the language used in BPA's writings as not reflecting, or even making room for, a respectful relationship with the environment. This F&WIP EIS is a landmark piece of writing, at least in breaking that language, and maybe attitude, barrier.

The problem with doing something well, is hopes are raised for what comes next. My hopes are up. This is a good and welcomed problem to have.

3) I attended BPA's public meeting in Clarkston WA. I am very grateful that Katherine Pierce and Charles Alton were able to visit here. They are both very competent and personable. It was a pleasure to meet them, and I admire the work they have been doing.

I appreciate the excellent work done by all who contributed to this EIS.

Thank you,
 Maia E. Genaux
 1245 8th St.
 Clarkston WA 99403-3329
 509-758-7146 (phone and fax)

maia@clarkston.com

Kuehn, Ginny -KC-7

RECEIVED BY BPA PUBLIC INVOLVEMENT
LOG#: FWIP-037
RECEIPT DATE: SEP 10 2001

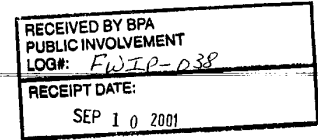
From: Timothy Charles Reagan [timerina@clarkston.com]
 Sent: Friday, September 07, 2001 3:16 PM
 To: comments@bpa.gov
 Subject: EIS Draft

Dear Bonneville Power Administration

I recommend the following implementation action be included in the the Fish & Wildlife Implementation Plan Draft EIS under Section 5-2, that is, Commerce-New Generation, of the Weak Stock Focus, Strong Stock Focus, Sustainable Use Focus and Commercial Focus. #1

BPA will grant a 30% subsidy to any homeowner or small business that properly installs a rooftop photovoltaic solar collector which is connected to the public grid. BPA will prevail upon regional utilities to purchase power thus generated. This action will: 1) diversify sources of electricity; 2) provide supplemental electrical power that will offset electrical demand especially during critical summertime daylight hours; 3) improve the integrity of the public grid by reducing long transmission loads during peak and near peak hours; 4) augment the likelihood of increased spill for summertime migrating smolts; and finally, 5) stimulate the solar industry locally and nation wide.

Timothy Charles Reagan
 1245 8th Street Apt. B
 Clarkston, WA 99403
 timerina@clarkston.com



Kuehn, Ginny -KC-7

From: Nicole Cordan [nicole@wildsalmon.org]
Sent: Friday, September 07, 2001 6:20 PM
To: comments@bpa.gov
Cc: Andrew; nicole@wildsalmon.org

Subject: UPDATED & REVISED SOS Comments on Fish & Wildlife Implementation Plan DEIS

Please delete the previous SOS comments sent in on BPA's Fish & Wildlife Implementation Plan Draft EIS (DOE/EIS-0312, May 2001).

This copy includes minor changes and edits. Hard copies to follow via U.S. Mail.

thanks you,
Nicole Cordan

AMERICAN RIVERS * IDAHO RIVERS UNITED * INSTITUTE FOR FISHERIES RESOURCES * NATIONAL WILDLIFE FEDERATION * NW ENERGY COALITION * PACIFIC COAST FEDERATION OF FISHERMAN'S ASSOCIATIONS * SAVE OUR WILD SALMON * SIERRA CLUB * TROUT UNLIMITED

September 7, 2001

Mr. Stephen J. Wright
Acting Administrator
Bonneville Power Administration
P.O. Box 3621-A
Portland, OR 97208

Dear Mr. Wright:

On behalf of the Save Our *Wild* Salmon (SOS) coalition and its undersigned member organizations, we submit these comments on the draft "Fish & Wildlife Implementation Plan Draft Environmental Impact Statement" (DOE/EIS-0312) prepared by the Bonneville Power Administration under the National Environmental Policy Act (NEPA) and released to the public in June, 2001. The DEIS analyzes alternative policy directions for actions to protect fish and wildlife affected by the operation of the Federal Columbia River Hydrosystem.

With a combined individual membership of 6,000,000, SOS is a coalition of more than 50 sport fishing, commercial fishing, and conservation organizations - local, regional, and national - which seek restoration of salmon stocks throughout the Pacific Northwest to sustainably harvestable numbers. SOS appreciates this opportunity to comment on this DEIS.

While we support a comprehensive and coordinated approach to salmon and steelhead protection and recovery, that approach must be based on prudent, justifiable facts. An appropriate environmental impact statement should present the public and decision-makers with a fair and unbiased look at the range of alternatives for this comprehensive approach. SOS believes that the DEIS falls far short of the mark. The following comments describe in detail our legal, policy economic and scientific

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concerns.

I. National Environmental Policy Act

The twin goals of NEPA, 42 U.S.C. § 4331 *et seq.*, are to guarantee that: (1) federal agencies take a "hard look" at the consequences of their actions before the actions occur by ensuring "that the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts," *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989); and (2) "the relevant information will be made available to the larger audience that may also play a role in both the decisionmaking process and the implementation of that decision." *Id.* at 349. NEPA requires federal agencies to look before they leap. Unfortunately, the DEIS fails to serve this function.

A. The DEIS fails to take a "hard look" at all of the information and consequences of the alternatives.

NEPA, §101(2)(C)(iii), requires that an EIS contain a discussion of the "alternatives to the proposed action." This discussion of alternatives is at "the heart" of the NEPA process. 40 C.F.R. §1502.14.

The CEQ regulations require the agency to "[r]igorously explore and objectively evaluate all reasonable alternatives." 40 C.F.R. §1502.14(a). To do so, the agency must take a "hard look" at the environmental consequences of each of the alternatives.

A "hard look" requires the agency to engage in a "reasoned evaluation of the relevant factors" to ensure that its ultimate decision is truly informed. *Greenpeace Action v. Franklin*, 14 F.3d 1324, 1332 (9th Cir. 1992). The EIS analysis must be searching, detailed and comprehensive; "[g]eneral statements about 'possible' effects and 'some risk,' do not constitute a 'hard look' absent a justification for why more definitive information could not be provided." *Neighbors of Cuddy Mountain v. United States Forest Service*, 137 F.3d 1372, 1380 (9th Cir. 1998). An agency's failure to include and analyze information that is important, significant, or essential renders an EIS inadequate - for, without such detailed information, there is no way for the public or the agency to adequately assess the impacts of a proposed action. See *California v. Bergland*, 483 F. Supp. 465, 495 (E.D. Cal. 1980), *aff'd sub nom. California v. Block*, 690 F.2d 753 (9th Cir. 1982) (by failing to disclose key data in a draft EIS, "the Forest Service effectively undercut the twin goals of environmental statements: informed decisionmaking, and full disclosure").

As our specific comments address in more detail below, the DEIS fails the "hard look" test.

Although SOS understands the programmatic scope of this DEIS, and the need to discuss policy options in broad terms, SOS believes that the DEIS does not present any of the detailed information necessary to inform the public, or BPA, about the environmental consequences of each of the policy direction alternatives. There are numerous options, details, studies - many of which have been compiled and discussed as part of other analyses - and facts that should be part of BPA's analysis.

The programmatic scope of the DEIS does not excuse the agency from presenting and analyzing information that is readily accessible.

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NEPA is designed to ensure a fully informed and well-reasoned decision. "In so doing, the EIS insures the integrity of the process of decision by giving assurance that stubborn problems or serious criticisms have not been 'swept under the rug.'" *Silva v. Lynn*, 482 F.2d 1282, 1285 (1st Cir. 1978).

Our specific comments below identify numerous occurrences where the DEIS puts forth biased or inaccurate information intended to steer the reader away from a particular policy alternative. It is impossible to formulate well-reasoned, defensible policy choices when the information underlying the analysis of those choices is inaccurate or missing. Without accurate and comprehensive information, BPA is poised to make a decision based on irrelevant or inappropriate factors. See, e.g. *National Wildlife Federation v. Coleman*, 529 F.2d 359, 372 (5th Cir. 1976).

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BPA's failure to take a "hard look" at the consequences of the various alternatives is compounded by the agency's stated intention to "tier" future documents to this EIS. See DEIS at 15-17; Executive Summary at 5-6. NEPA allows agencies "to tier their environmental impact statements to eliminate

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repetitive discussions of the same issues and to focus on the actual issues ripe for decision at each level of environmental review." 40 C.F.R. § 1508.20. To do so, however, the programmatic analysis must have been sufficiently detailed to have allowed meaningful review. In short, an agency cannot tier to a document that did not itself comply with NEPA.

SOS believes that this DEIS cannot possibly serve as the sort of detailed environmental analysis upon which future documents may rely. If the Final EIS suffers from the same lack of information and analysis that infects this draft, supplemental analyses will be required to ensure that the inadequacies of this DEIS do not carry over to site-specific actions. We are concerned that BPA will have neither the time, nor the inclination to do such analyses at the site-specific level. While SOS agrees that time is of the essence when it comes to actions to protect salmon, we are concerned that without an adequate and accurate analysis, those measures that could be most effective will be ignored.

Our concerns are not without basis - current activities illustrate the import of this faux analysis. For example, SOS understands that BPA "expects [that] its actions under this [Endangered Species Act Implementation] Plan [will] be covered under either the existing EISs noted above or under the new *Fish and Wildlife Implementation Plan EIS*. Where supplemental analyses are necessary, they will build on this underlying structure." See Endangered Species Act Draft Implementation Plan for the Federal Columbia River Power System, released in August 2001 at 62 (emphasis added). Contrary to BPA's assertion, however, there is nothing in this DEIS that considers the environmental impacts of many of the inadequate half-measures described in the Implementation Plan. Indeed, as we detail below in these comments and in our comments on the Endangered Species Act Implementation Plan, BPA's analysis misapprehends and discounts all too many of the most effective measures for salmon and steelhead protection. SOS is concerned that this may result in the action agencies ignoring vital information that should have been considered *at some stage* of the decision process.

B. The DEIS fails to adequately inform the public and decision-makers of the requirements and responsibilities imposed by the Northwest Power Act.

"A reasoned evaluation of the relevant factors" must also include an understanding of all the federal laws with which an agency must comply, especially when those other laws have been enacted to protect environmental and natural resources. The DEIS fails to inform adequately the public and the decision-makers of the requirements under numerous other laws including, but not limited to, the Northwest Power Act ("Power Act"), 16 U.S.C. §§ 839, *et seq.*

The DEIS continually speaks in terms of public and policy "trade-offs" between fish and wildlife and other uses of the Columbia River and its tributaries. BPA must recognize that Congress has already prescribed the result of these "trade-offs" in the Northwest Power Planning Act. The Power Act requires federal agencies, including BPA, "to adequately protect, mitigate, and enhance fish and wildlife, including related spawning grounds and habitat," affected by hydroelectric dams in the Columbia Basin, 16 U.S.C. § 839b(h)(11)(A)(ii). It also imposes a separate, substantive duty for these agencies to "exercise [their] responsibilities consistent with the purposes of this Act and other applicable laws, to adequately protect, mitigate, and enhance fish and wildlife, including related spawning grounds and habitat, affected by such projects or facilities in a manner that provides *equitable treatment* for such fish and wildlife with the other purposes for which such system and facilities are managed and operated." 16 U.S.C. § 839b(h)(11)(A)(i) (emphasis added).

The DEIS asserts that "BPA provides equitable treatment by implementing all or part of the Council's Program and taking action to meet the terms of relevant BiOps. The Ninth Circuit Court has upheld BPA's interpretation, holding that it is reasonable to balance power needs and mitigation needs on a system-wide basis." DEIS, Chap. 2 at 42. To the extent that this statement implies that the Ninth Circuit has sanctioned BPA's ability to satisfy its equitable treatment mandate simply by following the Council's Fish and Wildlife Program, or merely by fulfilling its obligations under the Endangered Species Act, it misrepresents those cases. To the contrary, the Ninth Circuit has twice rejected this same contention, finding that the requirement that BPA give equitable treatment to anadromous fish under 16 U.S.C. § 839b is clearly "substantive" and is, as the statute indicates, "independent" of its

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duty to consider the program adopted by the Council under 16 U.S.C. § 839b(h)(11)(A)(ii). See *Northwest Environmental Defense Ctr. v. BPA*, 117 F.3d 1520, 1532 (9th Cir. 1997); *Public Utility Dist. No.1 of Douglas County v. BPA*, 947 F.2d 386, 392 (9th Cir. 1991). The NPA requires BPA to do much more than just implement the Council's program or the ESA. BPA has failed to demonstrate that it meets that standard here.

C. The DEIS fails to comply with the Northwest Power Act's Equitable Treatment mandate.

In its explanation of funding mechanisms, the DEIS references "challenges" to consistent funding for fish and wildlife programs, mainly stemming from an increasing volatility in the price of purchased power and its affect on BPA's revenues and ability to cover costs. The DEIS offers the recent breakdown of California's restructured electric power market as an example of market conditions "getting in the way" of achieving the goal of fish and wildlife implementation.

In fact, BPA has relied on the declaration of a "Power Emergency" pursuant to the "Federal Agencies' Criteria and Priorities for 2001 FCRPS Operations" since early in the 2001 spring migration season to avoid meeting the spill and flow requirements of the 2000 FCRPS Biological Opinion. SOS strongly believes that this declaration of a power emergency, as well as the criteria upon which the declaration is based, are in flagrant violation of the Northwest Power Act's (NPA) "equitable treatment" mandate as referenced above.

SOS has repeatedly requested, through written letters to BPA, Army Corps and Engineers, Bureau of Reclamation, and National Marine Fisheries Service, that the federal agencies immediately begin operating the FCRPS in a manner that at a minimum satisfies the equitable treatment mandate of the NPA, including, but not limited to providing the spill and flows required by the 2000 FCRPS Biological Opinion. To date, this request has gone unheeded.

As described in the aforementioned letters, the federal agencies' declarations of emergency serve primarily to provide BPA with a financial cushion. Prioritizing the protection of BPA's cash flow while simultaneously refusing to utilize potential, reliable, and available alternative financial resources at best puts fish conservation measures second. Clearly and most simply, when BPA's power business does not adequately provide for its own reserve needs during drought conditions or while wholesale power prices are above normal, and instead must make salmon provide those reserves, the agency has not met the equitable treatment standard.

BPA has premised the DEIS on a fundamental misunderstanding of the NPA's Equitable Treatment mandate. The DEIS specifically states that "high prices for power may impair BPA's ability to finance fish and wildlife implementation," and that "extreme power demands and shortages may lead to modifications to fish and wildlife programs." Such direction violates the NPA. In these instances, the NPA requires BPA to manage risks equally across all aspects of the system. The Act does not allow BPA to put power ahead of fish. The DEIS is therefore fundamentally flawed due to its reliance on this misguided interpretation of the NPA's requirements.

II. Policy Direction Alternatives

A. Weak Stock Focus

The Save Our Wild Salmon Coalition has endorsed and advocated for the removal of the four lower Snake River dams as the most biologically beneficial and cost-effective means of recovering federally protected salmon runs in the Snake River. Of the proposed Policy Direction Alternatives, the "Weak Stock Focus" comes closest to embracing that goal. As such, the majority of these comments will be focused on that alternative and its impending environmental, economic and social impacts.

However, SOS feels that the Weak Stock focus fails to pay adequate attention to salmon runs not

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listed for protection under the Endangered Species Act (ESA). In addition to meeting its directive to avoid jeopardy to federally protected salmon runs, federal action agencies must pay equal attention to these relatively healthy salmon populations to prevent the future listing of these species and to comply with tribal and Canadian treaty obligations. In short, the overall objective of the Fish and Wildlife Program should be to restore all salmon runs in the Columbia and Snake River Basins.

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SOS believes that partial removal of the four lower Snake River dams must be a central component of any legally and scientifically legitimate fish recovery plan. Unfortunately, BPA has grossly misrepresented both the environmental impacts, as well as the socioeconomic impacts of dam removal on the lower Snake River. The following sections address those misrepresentations:

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1. Air Quality Effects

The DEIS unfairly and inappropriately assumes negative impacts on air quality for a decision to remove the four lower Snake River dams. Under a dam breaching scenario, there would be a need to replace the power produced from the dams. However, there is ample evidence to show that the power from those four dams can be replaced without adversely impacting air quality. For example, a report by the *NW Energy Coalition* and *Natural Resources Defense Council* demonstrates that the relatively minimal amount of energy produced by the four lower Snake River dams can be replaced with a mixture of low-cost conservation and non-hydropower renewables for a minimal cost to ratepayers and no net increase in carbon dioxide emissions. The final EIS must consider this "clean air" alternative to power replacement and adjust the Policy Direction effects accordingly.

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The DEIS assumes that the power would be replaced by a combination of new combustion turbines and prolonged use of existing coal facilities. As a result, the DEIS characterizes the effect of dam breaching on air quality with an increase in carbon monoxide (CO), carbon dioxide (CO2), nitrogen (NOX), particulate matter (PM10) and sulfur dioxide (SOX). Yet an analysis by the Army Corps of Engineers estimates that there would be no net increase in emissions for five of eight pollutants analyzed, and overall emissions in the Western United States would increase by less than one percent.

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The DEIS also references increased emissions resulting from increased truck and rail traffic replacing barges. This assertion is again in contrast to the Army Corps of Engineers analysis, which actually predicts a reduction in transportation-related emissions for three of five (CO, SO2, and NOx), while overall emissions would decrease by seven tons/year.

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The final EIS must incorporate these analyses and adjust the Policy Alternative or explain why such a change is unnecessary.

2. Water Quality Effects

SOS has two major concerns regarding the DEIS' discussion on water quality effects. First, SOS is uncertain why the agency has analyzed the amount of reservoir habitat and included reservoir habitat as a positive asset to the river environment. Second, SOS is concerned that the agency has underestimated the positive impacts of the Weak Stocks approach on water quality.

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i. Reservoir Habitat

The DEIS improperly analyzes the effects of partial dam removal on reservoir habitat. The DEIS characterizes dam removal as an action that is "worse" because of its impact on "reservoir habitat." While it is true that dam removal will "worsen reservoir habitat" by eliminating the reservoirs, it is unclear to SOS why this impact would be characterized as "worse" in the DEIS. Minimizing the reservoir habitat and increasing the natural river conditions should be considered a beneficial impact,

not a negative impact. The analysis of this impact as a negative is a symptom of a much larger problem with the DEIS. As such, it cannot provide the public or decision-makers with the information they need to make a proper decision.

ii. Water Quality & the Weak Stocks Approach

SOS appreciates the fact that the agency acknowledges the improvements in water quality that would be associated with the Weak Stocks alternative. However, we are concerned that the agency either misunderstands the significance of these benefits or simply ignores them in certain situations. The "half truths" presented in the DEIS fall far short of the "hard look" that NEPA requires and seemingly ignore the mandates of the Clean Water Act.

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The Clean Water Act, 33 U.S.C. §§ 1251 *et seq.*, obligates federal agencies to comply with state water quality standards. 33 U.S.C. § 1323. Water quality standards consist of at least three elements: (1) designated uses such as fishing, swimming, or salmonid migration, rearing, and spawning; (2) numerical or narrative standards; and (3) an antidegradation standard to prevent waters from further deterioration. 40 C.F.R. §131.10.13. Washington State established water quality standards on the Snake River which include the designated use of "salmonid migration, rearing, spawning, and harvesting." WAC 173-201A-030(2)(a-b). Washington has also established specific temperature and dissolved gas standards as well as an antidegradation standard which specifically are set to protect salmonids. WAC 175-201A-130(98)(a-b); WAC 175-201A-030(2)(c)(iii); WAC 175-201A-070(1).

A federal court has found that the four lower Snake River dams currently violate all three elements of Washington's water quality standards. *National Wildlife Federation v. U.S. Corps of Engineers*, 132 F.Supp.2d 876 (D. Or. 2001). The court has recognized these dams adversely impact water quality in the river in several ways.

For example, the reservoirs created by the dams have inundated spawning habitat for salmon and steelhead that historically used the mainstem Columbia and Snake rivers for these purposes. One hundred and forty miles of fall chinook and steelhead spawning habitat remains hidden beneath the four lower Snake River dams. The 2000 FCRPS Biological Opinion acknowledges that because of this inundation, current mainstem spawning areas for fall chinook are mostly confined to the Hanford Reach on the Mid-Columbia and to the Hell's Canyon Reach on the Snake River. The Hanford Reach is the only known mainstem spawning area for steelhead. This loss of spawning habitat has been and continues to be a primary cause of fall chinook and steelhead declines in the Basin.

As the DEIS recognizes, the reservoirs also increase water temperature and dissolved gas levels, both of which are detrimental to fish and wildlife. Water temperatures in the Snake River may reach as high as 80 degrees Fahrenheit this summer, a temperature lethal for salmon and steelhead. But, temperatures do not need to be that high to impact salmon adversely. Increased water temperatures interfere with juvenile salmon smoltification (the transformation from fresh to salt water life forms), cause migration delays, increase predation rates, and increase susceptibility of salmon to disease.

The increased dissolved gas levels created by the dams cause a disease similar to the bends in young salmon migrating downstream and the slow moving reservoir water cannot rid itself of the gas as it moves downstream. Both temperature and gas problems accumulate as the water moves down river. As a result, the removal of the Snake River dams would provide water quality benefits for Columbia River salmon as well.

Removing the four lower Snake River dams would have substantial biological benefit for all Columbia and Snake migrating salmon and steelhead by opening up otherwise lost spawning habitat and decreasing the adverse water temperatures and other pollution (e.g., dissolved gas) that accumulate in the rivers. Although some of these benefits are acknowledged in the DEIS, others are ignored. But, most surprisingly, the DEIS seems to suggest that the water quality requirements of the Clean Water Act need only be met where possible. A federal court recently rejected a similar argument put forth by the U.S. Army Corps of Engineers. *See National Wildlife Federation v. U.S. Army Corps of Engineers*, 132 F.Supp.2d 876 (D. Or. 2001). (finding that federal agencies must

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comply with water quality standards). We expect that the agency will correct these flaws in the final EIS and give the Weak Stocks alternative the proper "hard look" in terms of water quality improvements.

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3. Fish and Wildlife Effects

In general, the DEIS accounts for the substantial benefits to be derived from a free flowing lower Snake River for fish and wildlife compared to the status quo. As noted, there would be substantial gains in populations of naturally spawning native anadromous fish, as well as for native resident fish such as the bull trout and redband trout. Yet the DEIS may have underestimated the overall benefit in certain key areas. Partial removal of the four Lower Snake River dams would open up 140 miles of unimpounded, free flowing river and would allow access for native species to 70 percent of the Columbia Basin's remaining quality habitat. The habitat improvements associated with this would be dramatically better than the status quo, not only for native anadromous and resident fish, but also for native wildlife in general.

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The DEIS also misleads the public and decision-makers by unfairly reporting the environmental consequences of dam removal on non-native species. In its discussion of the environmental consequences of the various policy alternatives as compared to the status quo, the DEIS infers that the decrease in non-native species as a result of partial dam removal is a negative consequence. This is evidenced by statements such as, "non-native species [are] frequently sacrificed for the needs of listed anadromous and resident species. Population [of non-native species would be] less than under Status Quo." Yet all credible science indicates that the existence of non-native, or exotic species that reside in slack-water reservoirs created by dams are a danger to the survival of listed juvenile salmon. In fact, the DEIS even notes in an earlier discussion of environmental consequences that non-native species and their young provide a food base for predators that "maintain predator populations at unnaturally high levels, increasing predation on salmon." Furthermore, BPA's legal responsibilities are toward native species, not non-native species. The DEIS's balance of non-native species is misplaced and improperly assesses the impact of dam removal. While it is true that free flowing river conditions would decrease habitat for non-native species and consequently lessen populations, the DEIS must properly acknowledge this as a benefit, not an adverse impact, of dam removal in its comparison of alternatives. Any suggestion to the contrary is legally and scientifically indefensible. The Final EIS must correct this fundamental flaw.

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4. Economic Effects

The DEIS unfairly characterizes the economic effects of a decision to remove the four lower Snake River dams while severely underestimating the potential economic benefits of such a policy direction in a variety of economic sectors. The DEIS' imbalance is evidenced throughout the document, over various areas.

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i. Power

Decisions concerning power generation by their very nature come into conflict with fish and wildlife obligations. The situation is compounded by BPA's legal requirement to operate the FCRPS in a manner that provides equitable treatment to fish and wildlife concerns with other uses of the system.

Recently, due to a severe drought and volatile energy market, BPA unilaterally suspended its implementation of spill requirements outlined in the recent Federal Salmon Recovery Plan for the benefit of padding its cash reserves. Consequently, the operation of the FCRPS has been in direct and explicit violation of the "equitable treatment" requirement of the Northwest Power Act, 16 U.S.C §§ 839, *et seq.*, as described above, as well as the Endangered Species Act.

In short, the needs of salmon have acted as a "shock absorber" for both the physical reliability of the

power system and for the financial health of BPA. According to the Northwest Power Act, BPA's power business must, in addition to funding fish and wildlife programs, provide its own reserves in the case of a power emergency. That has not been the case.

The DEIS claims "large adverse effects compared to the status quo" for the Weak Stock Policy Direction. Yet nowhere is it mentioned that law mandates reductions in power production for the sake of migrating salmon, nor is it mentioned that even under the status quo, BPA and the other federal action agencies are violating these legal requirements.

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Combined, the four lower Snake River dams produce roughly 1,246 average megawatts annually, amounting to only 5 percent of the total Pacific Northwest energy system. The Drawdown Regional Economic Workgroup (DREW) estimated in its regional analysis that the average increase in monthly electric rates for replacement power with bypass would be in the range of \$1.07 - \$5.30 for residential ratepayers, assuming that the region replaces the lost power with more expensive forms of power generation like combined cycle turbines and gas fired power plants. As mentioned earlier, a separate study shows that residential rates would increase by only \$1 to \$3 per month if energy produced by the dams were replaced with a mixture of conservation and non-hydropower renewable energy.

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Electricity rates in the Pacific Northwest are currently some of the least expensive in the U.S. The relatively modest increase in electric rates pales in comparison to rates elsewhere in the U.S. and becomes even less significant when considering the potential economic benefits of sustainable wild salmon populations.

In addition, the DEIS notes "deconstruction costs" as a negative economic effect of dam removal. The DEIS fails, however, to mention potential savings on dam maintenance and capital improvement costs to help offset the initial investment, as well as a potential increase in jobs from both deconstruction and new energy generation construction.

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The DEIS fails to put the true impacts of power replacement into perspective, and subsequently fails to recognize potential economic benefits, such as long term and short term job increases associated with construction, maintenance and operation of new power generation sources. This failure makes it impossible for the public or decision-makers to understand fully the choices before them. The final EIS must fairly present the impacts of power changes to the system.

ii. Transportation

Without question, breaching the four lower Snake River dams would dramatically alter the way in which commodities are transported in the lower Snake River basin. Clearly, investments would have to be made in new infrastructure to transfer from barge navigation to rail or truck transportation routes. The DEIS portrays these investments as having "large adverse affects over the status quo."

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SOS would like to point out economic analyses which demonstrate that the infrastructure investments required could be far superior to continued taxpayer and ratepayer subsidization of the Snake River waterway. Such investments carry the potential to foster economic growth in the region by providing additional rail access and service - an important factor in attracting new businesses. Therefore, the DEIS has again unfairly inflated the potential economic impacts of dam removal while failing to adequately address the potential for economic benefits. And again, in this failure the DEIS has not informed the public and decision-makers of the true impacts of this alternative.

iii. Agriculture

BPA asserts that "[o]ver 300,000 acres of irrigated land are served out of the Lower Snake reservoirs. Breaching or lowering of the reservoirs would require modifications to surface irrigation diversions or fundamental changes to irrigation use. In addition, many wells benefit from the raised groundwater levels caused by reservoir storage nearby. The annual cost of fixing wells and diversions impaired by breaching could run into tens of millions of dollars annually."

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As confirmed by the U.S. Army Corps of Engineers and several additional studies, however, there are only approximately 37,000 acres irrigated with water from the Lower Snake River, all of which is drawn from Ice Harbor Reservoir. All additional farmland "served out of lower Snake reservoirs" irrigate using water from private wells which do not draw water directly from the river. Therefore, the DEIS' presentation on the scope of factors that shape the effects on agriculture puts forth questionable information that provides the public and decision-makers with an unfair summary of the outstanding data. We urge BPA to adjust its presentation of the scope of irrigated agriculture along the lower Snake River - and subsequently its analysis of the impacts of dam breaching on agriculture - to better reflect the facts.

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iv. Commercial Fish Harvest

Among the benefits of healthy salmon populations, one of particular relevance is the restoration of both Tribal and non-Tribal salmon fisheries. In order to sustain these benefits, SOS advocates that fisheries be managed specifically to meet escapement goals for wild stocks, and to assure the long-term capacity of watersheds to support natural production of salmon.

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The Weak Stock alternative calls for the elimination of most ocean harvest where targeted, or selective harvests can not be employed, resulting in an overall decrease in commercial value. This policy directive appears based on a lack of scientific evidence of the impacts of commercial fishing on listed salmon stocks.

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The 2000 FCRPS Biological Opinion explicitly states:

"For most of the listed ESUs, opportunities to improve survival through additional harvest reductions are limited because they are not affected, or are affected only minimally, by today's much-reduced fisheries...[A]s a result, *even the complete elimination of all remaining fisheries would yield only limited benefits for many of the ESUs.*" (emphasis added)

That the DEIS would recommend this among its range of alternatives detracts from the substantial biological benefits of dam removal on the lower Snake River by unnecessarily inflating the economic impacts. A prudent policy alternative should recognize that fisheries in the Columbia River basin have already been significantly reduced in recent years in part to reduce impact on listed species. More importantly, this policy alternative should recognize that hydropower operations "harvest" many more wild salmon than do fisheries, and thus should be the real focus of any recovery efforts. Indeed, the Biological Opinion's "Incidental Take" Statement for Snake River fall chinook alone estimates a juvenile mortality rate at 88 percent from operation of the hydropower system.

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v. Sport Fishing

Sport fishing throughout the Columbia River Basin is currently subjected to severe limitations and restrictions on the harvest of both listed and non-listed ESUs. As the All-H paper describes, freshwater harvest limitations were first put in place when the status of naturally producing fish first began to decline. As a result, "most [freshwater] fisheries within the Basin already have been severely and repeatedly reduced, so much so that today's fisheries reflect only a remnant of former fishing activity."

The Weak Stock approach seemingly proposes placing further limits on sport fishing harvest. These limits are reflected in the comparison of socioeconomic consequences of each policy alternative. As with commercial fishing, further limitations beyond current restrictions will provide few benefits, if any, while further harming economies that rely on healthy river fisheries. To again paraphrase the "All-H" paper, harvest restrictions are merely a way to "buy-time for management measures in the other H's to take place."

SOS is encouraged that the DEIS recognizes the economic benefits of a sport fishing, though these benefits are severely underestimated (see below). However, by proposing further limits on sport fishing, the DEIS is again unnecessarily inflating the socioeconomic consequences of the Weak Stock

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alternative. The final EIS should recognize and account for this error to adequately present this alternative to the public.

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vi. Other Recreation

The DEIS drastically underestimates the recreational benefits of breaching the lower Snake River dams, and inaccurately claims there would be fewer recreational opportunities in the Weak Stock approach than under the Status Quo. The Army Corps of Engineers' (Corps) own DEIS indicates just the opposite. Of the overall gain in recreation benefits associated with dam breaching, most would be due to the gain in river recreation days and the "value of these days being substantially higher than the loss in recreation activities that could only be undertaken in a reservoir (i.e. water-skiing, etc.)" (emphasis added). There would also be significant gains in fishing benefits (salmon and steelhead) over the status quo.

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Overall the DREW estimates that in the short term, bypassing the lower Snake River dams will eliminate eight hundred reservoir-related jobs, but in the long run will generate over three thousand recreation-related jobs as new and enhanced recreation opportunities associated with a free-flowing river emerge. Perhaps more importantly, however, the DEIS fails to account for the broad range of economic benefits that could be derived from the quality-of-life assets of a naturally flowing river. Without this information, the DEIS's analysis of dam removal's impacts on recreation is fundamentally flawed and fails to paint an accurate picture.

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B. Sustainable Use Focus

The Sustainable Use Focus, as defined in the DEIS, would "emphasize human intervention as part of a goal to restore and maintain sustainable stocks of fish and wildlife populations to promote expanded harvest and recreation opportunities." To achieve this, the Sustainable Use Focus centers on increasing hatchery production, restoring habitat, and modifying hydroelectric operations. This policy focus would also put off a decision on removal of the four lower Snake River dams, though it would remain an option if the harvest goals were not achieved by other actions. In sum, this policy alternative takes a recovery approach similar to the 2000 FCRPS Biological Opinion. That is, the Sustainable Use Focus relies on a suite of habitat, harvest and hatchery measures while only modestly addressing and modifying hydropower operations.

The DEIS acknowledges BPA's need to implement and fund fish and wildlife mitigation and recovery efforts to meet a variety of responsibilities, including those defined by the Northwest Power Act, the Endangered Species Act, the Clean Water Act, and native trust and treaty responsibilities.

The Northwest Power Planning Council's 2000 Columbia River Basin Fish and Wildlife Program -- which BPA is charged with implementing, in part provides a similar vision for the Fish and Wildlife Program. It projects a Columbia River ecosystem that "sustains an abundant, productive, and diverse community of fish and wildlife, mitigating across the basin for the adverse effects to fish and wildlife caused by the development and operation of the hydrosystemS."

SOS believes that the Sustainable Use approach, as well as the approach taken by the Biological Opinion is insufficient not only to meet BPA's purposes and needs in funding and implementing fish and wildlife mitigation and recovery efforts, but to avoid jeopardy and to recover salmon and steelhead to sustainable, harvestable levels. Indeed, relying solely on the approach outlined in the BiOp to avoid jeopardy violates the Endangered Species Act. See *National Wildlife Fed'n, et al. v. National Marine Fisheries Service*, Complaint For Declaratory and Injunctive Relief (filed May 4, 2001).

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SOS agrees that many of the measures outlined in the Sustainable Use Focus, and the BiOp, are indeed necessary to improve salmon and steelhead survival. For example, the DEIS outlines numerous beneficial habitat implementation actions under the Sustainable Use policy alternative that SOS believes should be included in any final policy alternative. Among those, are the strengthening of habitat protections through stricter standards for logging, livestock grazing, mining and road

building, and increasing the habitat connections throughout the basin. In addition, habitat actions under this policy direction as described in the DEIS would be founded with the laudable goal of restoring sustainable, naturally producing fish and wildlife populations to support tribal and non-tribal harvest, cultural practices, and economic benefits by restoring the biological integrity and genetic diversity of the Columbia River ecosystem.

As stated earlier, a fundamental problem of the Weak Stock approach is its failure to adequately address the needs of salmon populations not listed under the ESA, and subsequently its failure to take steps that would prevent healthy populations from becoming endangered. The Sustainable Use focus does not suffer from this bias. Instead, the Sustainable Use alternative gives some priority to unlisted populations.

However, by putting off a decision on dam removal in favor of modest hydro modifications as well as ramping up efforts in all other "H's", the Sustainable Use alternative fails to adequately confront the true impediments to recovering listed salmon the four lower Snake River dams. Furthermore, the "wait and see" approach employed by this alternative and the 2000 Biological Opinion places the burden of proof and the risk on listed Snake River salmon and steelhead. On the contrary, a common sense approach, and an approach that is legally and scientifically justifiable should place this burden on the action agencies to prove that dam removal is no longer necessary.

There is ample evidence to prove the substantial biological benefits to be gained from dam removal. In fact, the 2000 Biological Opinion acknowledges that dam breaching is in fact the most assured way to recover listed Snake River ESUs. SOS strongly feels that true recovery can not be achieved without breaching the four lower Snake River dams.

As a result of the fundamental flaw, SOS feels that the Sustainable Use Focus falls far short of meeting recovery needs in other areas. For example, the Sustainable Use focus would, like the Biological Opinion, increase emphasis on the harmful barging and trucking program to transport juvenile salmon while failing to mandate an aggressive spill program. The Biological Opinion and the Northwest Power Planning Council Fish and Wildlife Program establish spill as a key fish recovery and mitigation effort. Indeed, the Biological Opinion recognizes that spill is the most effective and safest means of juvenile passage.

In addition, instead of mandating a rigid spill program, the Sustainable Use focus would call for spill "as appropriate" without defining the conditions of what is and isn't "appropriate." This implies that, similar to the Biological Opinion, federal agencies would be allowed to unilaterally suspend river management requirements, like spill, subject to the declaration of an "emergency." Such exemptions of river management requirements are wholly inconsistent with both the ESA and the equitable treatment requirements of the NPA.

As such, a comprehensive and consistent policy to guide the implementation and funding of fish and wildlife recovery efforts based on the actions outlined in the Sustainable Use policy alternative will not result in the recovery of listed species. We urge BPA to merge the beneficial aspects of this approach, as identified above, into a final agency action based on the removal of the four lower Snake River dams. Anything less fails to meet the requirements of the laws and treaties that govern the Fish and Wildlife Program.

III. Conclusion

SOS urges BPA to take these issues into consideration when choosing its preferred alternative and presenting a final environmental impact statement for implementation of the fish and wildlife program. A decision based on the information presented in the DEIS would be rooted in half-truths and misrepresentations. BPA has a legal responsibility under NEPA to present the public with an objective evaluation of all reasonable alternatives. To that end, SOS urges BPA to alter the Weak Stock approach as identified above to achieve the greatest benefit from this alternative and to eliminate unnecessary consequences, and further urges BPA to consider this as its preferred

alternative.

Removal of the four lower Snake River dams provides BPA with the most assured way of meeting the goals of its fish and wildlife programs, while achieving significant economic and environmental benefits, and with much less negative impact than is portrayed in the DEIS.

Thank you for the opportunity to comment on the DEIS. Please feel free to contact us if you have any questions or need further clarification.

Sincerely,

Pat Ford, Save Our *Wild* Salmon
Bill Arthur, Sierra Club
Rob Masonis, American Rivers
Bill Sedivy, Idaho Rivers United
Liz Hamilton, Northwest Sportfishing Industry Association
Jeff Curtis, Trout Unlimited
Tim Stearns, National Wildlife Federation
Sara Patton, NW Energy Coalition
Glen Spain, Pacific Coast Federation of Fishermen's Associations & Institute for Fisheries Resources

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#3

#3

#3

RECEIVED BY BPA PUBLIC INVOLVEMENT LOG#: FWIP-039
RECEIPT DATE: SEP 10 2001

Kuehn, Ginny -KC-7

From: Mary Verner [maryv@alltel.net]
Sent: Friday, September 07, 2001 2:03 PM
To: comment@bpa.gov
Cc: wseyler@spokanetribe.com; bobbert@spokanetribe.com; daveycw@spokanetribe.com; tammyb@spokanetribe.com; rudy@spokanetribe.com; bjk@spokanetribe.com; KeithUnd@spokanetribe.com; bryantf@spokanetribe.com; ljwrez@hotmail.com; gfwhf@spokanetribe.com; bwiles@aimcomm.com; lrothrock@aimcomm.com
Subject: SpokaneTribe'sCommentsOnF&WImplementationPlanDEIS

Attached electronic version of the Spokane Tribe's comments will be submitted in hard-copy by regular mail. The signed original may include final edits, and should be considered the official final comments of the Spokane Tribe.

9/10/01

Submitted electronically. Hard-copy signed original to follow by mail.
Signed original may include final edits, and should be considered the official final comments of the Spokane Tribe.

SPOKANE TRIBE OF INDIANS
P.O. Box 100, Wellpinit, WA 99040
Phone: 509-258-4581/FAX: 509-258-9243

Mr. Charles Alton
Project Manager - KEC-4
Bonneville Power Administration
P.O. Box 3621
Portland, OR 97208

RE: Fish & Wildlife Implementation Plan
Draft Environmental Impact Statement

Dear Mr. Alton:

We appreciate the opportunity to comment on the BPA Draft EIS. Our detailed comments are submitted in electronic format, in revision tracks to the original text for Chapter 5, and in separate comments on the remainder of the documents.

The concept underlying the DEIS is admirable, and we recognize the challenge of conducting an environmental analysis in the context of many complexities associated with the FCRPS. At the same time, we are wary of the potential uses of this NEPA process. In particular, we are concerned about:

- (1) The breadth and length of NEPA coverage anticipated by this document -
The DEIS anticipates that a FEIS built upon this draft can be used to cover an almost limitless array of possible future policy directions and implementing actions. We need to see reasonable parameters placed around the scope of NEPA coverage.] #1

- (2) The inadequate and premature analysis of impacts on Tribal cultural resources -
Several sections in the DEIS are encouraging, reflecting that BPA has learned from countless conversations between BPA staff and Tribal representatives. Yet, the sections on cultural resources fall far short of the analysis and consultation needed to address the Tribe's concerns. The DEIS reflects a complete lack of any feedback loop from the information garnered during the time from SOR (1995-97) to the present.] #2

We strongly recommend that BPA pause the DEIS process and make a deliberate effort to address federal NEPA review during meetings scheduled for October 2001 (to discuss BPA Cultural Resource Program Goals and Objectives). Our THPO has never been consulted on the Biological Opinions. Thus, it is difficult for the THPO to acknowledge the validity of any implementation plan documents or processes.] #3

We also strongly recommend that BPA delay any FEIS and ROD until regional policymakers have had an opportunity to resurrect a regional governance structure. A regional fish and wildlife policy direction is most appropriately made through concurrence of the region's Federal, State and Tribal sovereign governments. Although the Columbia Basin Forum concept went dormant during a period of extreme busy-ness, many of the Basin's policymakers see the need to reconvene that group to focus on ESA implementation and broader policy issues surrounding the FCRPS.

We trust that the Tribe's concerns and comments will be elevated to the BPA Administrator for consideration under the government-to-government relationship between BPA and the Spokane Tribe.

Thank you for your outreach, and for your careful consideration of our comments.

Sincerely,

Alfred M. Peone
Chairman, Spokane Tribal Business Council

- cc: Mr. Steve Wright, BPA Administrator
- Ms. Alex Smith, BPA VP for F&W
- Mr. John Smith, BPA Tribal Liaison
- Mr. Rudy Peone, Spokane Tribal NRD Director
- Mr. Bryan Flett, Spokane Tribal Culture Program Director
- Mr. Louie Wynne, Spokane THPO
- Ms. Mary Verner, Spokane Tribal Consultant
- Mr. Howard Funke, Spokane Tribal Consulting Attorney

COMMENTS SUBMITTED BY THE
SPOKANE TRIBE OF INDIANS
TO BONNEVILLE POWER ADMINISTRATION

RE: FISH AND WILDLIFE IMPLEMENTATION PLAN DEIS
SUMMARY

PAGE:

Frontispiece: It is fitting that this document begins with the Albert Einstein quote. Indeed, Columbia Basin decisionmakers must rise to a new level of thinking.

In particular, NEPA coverage should no longer be merely a checklist legal requirement for federal agencies to avoid adverse rulings in litigation. Rather, NEPA analysis should be conducted in a meaningful and thorough way, truly reviewing environmental impacts of alternatives, using credible and best available data. Continuing the superficial consideration of bare minimum regulatory requirements breeds contempt toward and mistrust of the federal action agencies.

Draft/S-ii & iii: We appreciate that BPA recognizes its trust responsibility and describes its Tribal Policy in this document. This text helps promote greater understanding of the government-to-government relationship that is required between BPA and the Tribes.

Draft/S-iii & iv: We agree that a comprehensive and consistent fish and wildlife policy would foster coordination and efficiency. And we respect BPA's effort to initiate NEPA review in anticipation of a deliberate or default regional policy direction. Nonetheless, this EIS is in some ways tardy and in other ways premature.

The EIS is tardy because BPA has already proceeded under fundamentally altered hydrosystem and business operational strategies without updated NEPA coverage. Tardy also because BPA has already entered its Record of Decision on the 2000 Biological Opinions, committing BPA to operational scenarios and fish and wildlife funding actions that, ostensibly, fall within the scope of the draft F&W Implementation Plan EIS. The ESA Implementation Plan is out for public comment at the same time as this DEIS.

On the other hand, the DEIS is premature because the region's sovereign governments should first select a governance approach, then determine a fish and wildlife policy direction.

Draft/S-vi: It would be helpful to see the alternatives illustrated in terms of the stated "yardsticks." At present, the alternatives are illustrated as they relate to "Key Regional Issues." How does the reader tie back to determine how well each Policy Direction meets BPA's need to, for example, meet its obligations under CWA and NHPA? Is this summarized in one place?

Draft/S-vii: The "Background" section is remarkably honest.

Draft/S-xi: The text refers to BPA's "expectation" that strategies discussed in the "All-H Paper" will be implemented. Is this not now more than an "expectation"? Did not

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BPA commit in its ROD on the BiOps to meet its All-H Commitments as part of the RPA for listed species? #8

Draft/S-xii: The document should note that some stakeholders, including the Spokane Tribe, believe that the Human Effects Analysis of the Council's Multi-Species Framework Report was flawed and did not adequately assess impacts to Tribes in the Upper Columbia blocked area. #9

Where the Council's 2000 Report on BPA F&W Expenditures concludes with percentages of funds spent on anadromous fish and wildlife, the last sentence should read "... mitigation for only [strike 'over'] 38% of the wildlife habitat inundated by the dams and reservoirs." #10

While the title of this document is "Fish and Wildlife" Implementation Plan, the substantial discussion afforded to economic effects warrants further explanation of the context of fish and wildlife funding. BPA's costs for fish and wildlife have totaled \$3.48 billion since 1978 (an average of \$151 Million/year over 23 years). What has been the total cost to BPA of irrigation and industry subsidies over the same time period? Does the \$3.48 billion for F&W include "foregone revenue" from operating the hydrosystem for salmon? If so, at least a footnote should explain that there are many approaches to calculating the market value of foregone revenue, and some parties dispute the validity of BPA's calculations. Also, the revenue foregone to provide water for irrigation and navigation should be disclosed. #11

Draft/S-xiv: The Table of Key Regional Issues should be expanded. The section labeled "Tribes" should include at least the following: Tribal Co-Management; Tribal Cultural Properties; Tribal Water Rights; and, Tribal Land Losses to Operations. These edits should be made whenever the same Table is reprinted elsewhere in the document. #12

Draft/S-xiv&xv: The "Scope and Decisionmaking" section encompasses the crux of our concern about this DEIS. "This DEIS is designed to be broad enough to encompass any potential Policy Directions under consideration." What boundless latitude! "It also allows the decisionmaker to 'tier' site-specific decisions from this EIS." How infinite the possibilities!

A very well-defined boundary is needed around this EIS. Over what range of decisions, over what period of time, over what array of circumstances will this EIS provide NEPA coverage? Although NEPA grants broad discretion to the agency, it does not provide for writing a "blank check" to "pay" for any possible future F&W funding strategy. The goal of informing a regional policy direction is laudable. The corollary of eliminating the need for future environmental analysis once that goal is selected is not so comfortable. #13

Draft/S-xvi: "[A]ctions consistent with the Policy Direction" simply does not provide enough specificity to determine a reasonable range of actions that would be afforded NEPA coverage under this document. #14

Draft/S-xxi: Terminology in the "Commerce Focus" alternative should be defined. What is "economically efficient" restoration/harvesting/hatcheries? #15

General Comment: While the Summary states, on the one hand, that the BPA Administrator will not make the decision on the regional policy direction, on the other hand, the BPA Administrator will have to enter a ROD on this Implementation Plan EIS, and the ROD must be based on selecting an alternative regional policy direction. This is an enormous burden and responsibility to place on one person. The policy direction should be chosen first, through the collective effort of the region's Federal, Tribal and State sovereigns, on behalf of their respective constituencies. Then, an environmental analysis can be conducted with greater specificity and usefulness.

} #10

COMMENTS SUBMITTED BY THE
SPOKANE TRIBE OF INDIANS
TO BONNEVILLE POWER ADMINISTRATION

RE: FISH AND WILDLIFE IMPLEMENTATION PLAN DEIS
VOLUME 1: ENVIRONMENTAL ANALYSES

PAGE:

Draft/i: "Proceed[ing] now toward implementation of certain actions under the Biological Opinions" might not mean that BPA has made its final determination on an over-arching Policy Direction for fulfilling all its fish and wildlife obligations for the next 10 years. However, proceeding to implement the Biological Opinions does determine how the hydrosystem will be operated and mitigation will be conducted to avoid jeopardy for ESA-listed species. BiOp decisions are fundamental and integral to the over-arching 10-year policy direction. Where does BPA discern flexibility on major fish and wildlife issues beyond the commitments in its ROD on the BiOps?

#17

Draft/ES-ix: While BPA acknowledges the Current Policy Conflicts, BPA nonetheless maintains the position that previous NEPA processes (such as SOR and Business Plan) remain viable, and BPA proceeds toward implementation of BiOps for which RODs have been entered. Is there sincere intent to address/resolve the policy conflicts before issuing a FEIS?

#18

Draft/ES-x: We commend BPA for continuing to acknowledge the usefulness and viability of the Columbia River Basin Forum, and we encourage BPA to promote the use of the Basin Forum concept (Three Sovereigns, not NMFS Regional Forum) as the appropriate governance structure for the basin.

#19

Draft/13: While use of previously-prepared EISs as resources in the preparation of this FWIP DEIS provides BPA certain efficiencies, the viability of previous NEPA reviews is questionable under substantially changed circumstances.

The Wildlife Mitigation Program EIS (1997) and Transmission System Vegetation Management Program EIS (2000) are examples of programmatic NEPA reviews which retain their usefulness. These are systematic analyses applicable to project-specific actions which are repetitive in nature and subject to analysis for similar sets of facts. On the other hand, the Business Plan EIS (1995) and SOR EIS (1995) no longer fit the current circumstances. These were NEPA reviews fitted to specific scenarios which have altered significantly over time.

Although the Business Plan and SOR EISs contain useful information, they no longer provide adequate environmental review for today's market conditions and system operations strategies. Indeed, the SOR environmental analysis was flawed when the EIS was issued, particularly as to cultural resources. Further, the body of knowledge pertinent to these EISs has increased and change over the past 6 years, and current information should be inserted into new comprehensive environmental analysis.

#20

Draft/16: The "ROD on Policy Direction" and "Tiered RODs" raise several concerns for the Spokane Tribe.

On Policy Direction: If the BPA Administrator merely records a policy direction selected in a process that provides meaningful Tribal involvement, the Administrator will have fulfilled an administrative duty to proceed with NEPA documentation. On the other hand, if the BPA Administrator surmises the region's preferred or "likely" policy direction, the Administrator will have assumed responsibility for a decision that rightfully falls on the shoulders of all the region's sovereign governments.

#21

Tiered RODs hold great potential to thwart the intent of NEPA analysis. We could be comfortable with the BPA ROD incorporating, for example, the NW Power Planning Council's Fish and Wildlife Program. That Program has been subjected to thorough scientific, management and public review and incorporates multidisciplinary input at an appropriate scope and scale to serve as environmental review for specific actions. In contrast, vague concepts such as "Commerce Focus" - described only in the broadest strokes as including "no dam removal" and "increased development" - do not afford analysis adequate for NEPA coverage nor for wise, informed decision-making. We consider it imperative that BPA narrow the range of potential activities that would be considered "tierable" from this EIS.

#22

Draft/30: The brief, but accurate, history of non-Indian taking of Tribal land and resources is appreciated.

Draft/61: Several pages of text describing BPA's fish and wildlife costs cover most of the key issues, but do not describe factors offsetting the impacts of foregone hydro revenues.

The remark on p. 61 about BPA's concern for its customers' *perceptions* of costs raises a question tangential to the EIS: If BPA expects fish, wildlife and Tribal stakeholders to become educated about the complex factors limiting BPA's ability to meet its fish and wildlife and trust obligations, can it not also ask its customers to become educated about the complex factors comprising BPA's costs for fish and wildlife?

#23

Draft/67: No mention is made of Tribal water rights, which are senior and prior, in most instances, to non-Tribal water rights.

#24

Draft/88: In the third paragraph, strike the statement: "Some 'upriver' tribes today have less of an interest in salmon than they once did" Although salmon have been taken away from the Tribal people in the blocked areas, this does not mean that Tribal interest in salmon has diminished. Indeed, it is the stated goal of the Spokane Tribe and UCUT to restore salmon above Grand Coulee Dam because salmon are vital to the cultural survival of these "blocked area" Tribes.

#25

Draft/100: "BPA wants to be ready to implement future fish and wildlife mitigation and recovery efforts without delay when a Policy Direction is chosen or changed." Herein lies the problem: Environmental consequences of Maximum Economic Gain are vastly different from impacts of Natural Focus. This DEIS is inadequate for umbrella environmental coverage, particularly over time and over changing policy direction.

#26

Adaptive management and programmatic, long-term NEPA coverage are uneasy partners. The scope and breadth of BPA's NEPA coverage needs to be refined. #210

Draft/101: We agree that the key question is: "[H]ow best to arrive at that [Policy Direction] choice?" The Policy Direction must be chosen through deliberate policy-level collaboration among the region's Federal, State and Tribal governments. #217

Draft/103: The responsibility placed upon the BPA Administrator regarding Policy Direction is overly burdensome and should be shared by the region's other decision-makers.

The last sentence in Sec. 3.1.1. reveals the source of some of our concern: "Such an approach [flexible, open-ended EIS] also anticipates changes over time and extends the usefulness of the EIS." We are concerned that the "usefulness of the EIS" will extend to cover a multitude of actions that may fall very vaguely within ambiguous "policy directions." Without further definition of restraining parameters, this NEPA approach could eliminate the need for future environmental analysis for almost any BPA-funded activity that bears any relationship whatsoever to fish and wildlife. #228

Draft/104: The language in the paragraph immediately preceding Table 3.2-1 is useful exposition of the spiritual significance of fish and wildlife to Tribes, and of Tribal concerns about culture, history, health and sovereignty. #229

Table 3.2-1 should be corrected to add Key Regional Issues for Tribes, as commented earlier (see comments on Summary, Draft/S-xiv).

Draft/106: "Ultimately, BPA will decide which alternative will guide the implementation and funding of its fish and wildlife mitigation and recovery efforts." This statement seems to contradict commitments elsewhere in the document allow the broader region to determine the fish and wildlife policy direction. #30

Draft/107: Before the BPA Administrator uses the comparative-analysis-table methodology to select a preferred alternative and evaluate future proposals, the facts, concepts and assumptions underlying the methodology must be corrected and verified. #31

Draft/108: "[T]here are still many biological and political unknowns." "Scales and intensity may vary, future environmental and economic conditions are unpredictable, and quantitative models have unknown errors and assumptions." These are reasons NEPA coverage is dubious at this grand scale. Somehow, the scope and breadth of NEPA coverage must be defined, refined, and confined. #32

Draft/113: "Sustainable Use Focus" illustrates the possibilities: "Removes dams if harvest goals are not achieved by other actions." (Emphasis added.) The environmental results of increasing hatcheries differ from the environmental results of restoring habitat, and differ vastly from the environmental results of removing dams.

At present, federal agencies are rushing through the 5-year and 1-year planning processes for BiOp Implementation. There will be no time for regional review of the environmental impacts of these BiOp Implementation Plans. Action Agency RODs are #33

relied upon as NEPA coverage for the Implementation Plans, although no new environmental analysis was conducted beyond jeopardy analysis for ESA-listed species. How are Tribes to be comforted that the full range of environmental concerns will be meaningfully and accurately investigated and addressed? #33

Draft/117, fn.9: "An alternative that is outside the legal jurisdiction of the lead agency must still be analyzed in the EIS if it is reasonable." Why, then, does this DEIS not analyze the potential for restoration of anadromous salmon above Grand Coulee Dam? The upper Columbia blocked area Tribes repeatedly have brought this request forward to the federal agencies, yet our proposal is not mentioned anywhere in this DEIS. #34

Draft/127: "Destruction of cultural resources is primarily related to dam breaching in the Natural Focus and Weak Stock Policy Directions." This statement is inaccurate. Destruction of cultural resources occurs on a daily basis due to operation of the hydrosystem for multiple purposes. Regardless which policy direction is chose, cultural resources will continue to be destroyed. #35

"[I]n the future, conditions may change and the region may wish to make additional changes in Policy Direction or choose a new Policy. This DEIS contemplates such modifications." Again, discretion to refer to this NEPA document to cover all future scenarios defeats NEPA's purpose of environmental analysis. Specifically regarding future changes in Policy Direction, current analysis would need to take into account the changed environmental conditions. Environmental baseline in 2005 or 2010 or beyond will not be the same as environmental baseline in 2001. Pursuing one policy direction leads inexorably to the need to review environmental impacts of a changed policy direction in the future. Implementing one strategy alters the conditions that must be assessed in selecting a different strategy in the future. #36

Decision-makers cannot disregard the synergistic and cumulative effects of implementing policy directions. These effects lead to the need for updated environmental analysis, on broad and site-specific scales, over time. #37

Draft/128: Section 3.4.1 attempts to give decisionmakers the "necessary structure to understand the environmental consequences" of choosing alternative policy strategies. The tools provided in this DEIS are very useful. They summarize the issues and types of impacts to be considered in decision-making. Combined with other tools, such as Framework EDT analysis, decision-makers can get a general idea of trends to be expected when implementing certain broad regional directives. However, such information does not necessarily eliminate the need for more detailed environmental analysis. #38

Chapter 3: Sample Implementation Actions: It is our understanding that this Chapter merely presents, for illustration purposes, some possible implementation actions under each described policy direction scenario. Therefore, we have not provided detailed comments for each set of sample actions. In the event a definite policy direction is selected, we need the opportunity to comment on both the appropriate actions to implement that direction, and the environmental consequences of such actions. #39

Table of Current Implementation Actions:

- 1-6 Watersheds: Does not mention current subbasin planning effort through NW Power Planning Council's Fish and Wildlife Program.
- 1-9 Reservoirs: Does not mention flood control.
- 4-3 Spill: Need to mention/address Tribal Water Quality Standards.
- 11. Recreation: Mention recreational use of storage reservoirs.
- 12-1. Tribal Harvest: Need enough anadromous fish to resume harvest for Tribes in the blocked areas. Spokane Tribe/UCUT have been excluded from the discussions about harvest.
- ?? - Where is the discussion of Cultural Properties (archaeological resources, Traditional Cultural Properties, and so forth)?

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Draft/131, 132: "BPA and other federal agencies may, through adaptive management, adjust FCRPS operations over time, as changing circumstances warrant." We acknowledge federal authority to operate the FCRPS to meet multiple mandates. At the same time, we do not believe the agencies are relieved of their obligations to conduct meaningful analyses under NEPA and NHPA. For example, the NHPA and its implementing regulations specifically state how emergencies must be handled. Operation of the FCRPS under "emergency criteria" (as has been the case during 2001) does not excuse the agencies from NHPA compliance. Nor, we believe, do SOR and the Reservoir Cooperating Groups excuse the agencies from separate NHPA obligations to address emergencies.

#46

The concepts of emergency operations being of relatively short duration, and of BPA needing to merely change its policy and issue a supplemental EIS and ROD, illustrate why the Tribes often feel that BPA only pays "lip service" to its NEPA obligations. As emergency operations during 2001 have illustrated, "emergency" operation of the FCRPS has enormous environmental and cultural resource impacts. These unintended, but very real, consequences of emergency operations should be assessed, planned for, and mitigated. To the Tribes, these are not mere procedural niceties; they are steps necessary for federal agencies to fulfill their trust obligations to the Tribes.

Chapter 5: See separate comments on electronic version of Chapter 5.

Chapter 6 - Governance

This chapter truthfully portrays the difficulty of establishing a regionally acceptable governance structure. The Spokane Tribe agrees with BPA's conclusion: "The form that governances takes is less important to the outcome than the degree to which the governing parties are able to act in concert." Still, the form is important to Tribes because any regional governance structure must provide for meaningful participation by Tribal governments in regional decision-making.

#47

We disagree that "the choice of governance structure comes after the necessary decisions about the plan," Although the federal action agencies have already entered RODs to implement the BiOps, it is not too late to convene a regional governing body comprising Federal, State and Tribal policy-makers, for the purpose of selecting a regional Policy Direction and assessing the environmental consequences. Indeed, the

#48

"Three Sovereigns" process was headed in that direction when the Framework project was initiated. Unfortunately, time, hesitation, and pressing demands on key staff led to attrition of the effort to launch a full-scale regional governance approach. This dispersion need not be permanent. There is no time like the present to make concerted efforts to reconvene the Basin Forum and get busy with the work at hand.

Draft/283, Section 7.4 - Heritage Conservation: After countless discussions and comments, have the federal agencies not yet recognized Tribal Historic Preservation Officers? This section mentions only State Historic Preservation Officers.

#49

This section also relies upon the 1991 Programmatic Agreement to address NHPA, AIRFA, and NAGRPA coverage for the federal action agencies, even though the Spokane Tribe questions both federal agency compliance with the terms of the 1991 P.A., and the adequacy of previous processes. The BiOps, VARQ, and proposed additional changes to the FCRPS trigger new cultural resource compliance obligations. Not only should this section of text be edited for accuracy, but also the action agencies need to consult with the Spokane Tribal Council and THPO regarding cultural resource protection obligations in FCRPS planning.

#50

**COMMENTS SUBMITTED BY THE
SPOKANE TRIBE OF INDIANS
TO BONNEVILLE POWER ADMINISTRATION
RE: FISH AND WILDLIFE IMPLEMENTATION PLAN EIS**

CHAPTER 5 — ENVIRONMENTAL CONSEQUENCES

- Briefly reviews the methodology that underlies the analysis of environmental consequences for this DEIS.
- Provides examples of generic effects and mitigation measures by common regional human activities.
- Illustrates the environmental consequences of proposed and reasonably foreseeable regional actions through providing an understanding of the relationship of human actions and their effects on natural and socioeconomic resources.

Information in this chapter provides the technical and detailed basis for the analysis in this DEIS. For a summary of that analysis, please see Chapter 3 (Comparison of Alternatives).

IN THE HARD-COPY DOCUMENT, Sec. 5.1.2 describes "Optimum Conditions for Each River Use," derived from SOR analysis. Because the "optimum conditions" are used as baseline assumptions for deriving the ensuing "Generic Environmental Consequences," it is important to acknowledge the flaws in the baseline. For example:

* "Cultural Resources" - "stable reservoirs year-round" is much too simplistic a description of optimum conditions. This artificial "optimum" does not incorporate the full range of resources comprising "cultural resources" for Tribes. Further, stable elevations alone do not address adverse impacts of low water retention times, nor is stable elevation meaningful unless the impacts at specific reservoir elevations are addressed. For example, a stable elevation can be damaging when the elevation strikes where Tribal burials are exposed, where wave action is most damaging, and/or where bank geology is most susceptible to saturation and mass sliding.

* "Resident Fish" - "stable reservoirs year-round, with natural river flows" is a self-contradictory "optimum." Stable reservoirs and natural river flows are mutually exclusive. This "optimum" also does not consider the complexities of reservoir pool characteristics as they relate to optimum conditions for resident fish: specific reservoir elevations may be either beneficial or damaging; some seasonal alteration of wetted perimeter is needed for fish life cycles; water retention times affect availability of nutrients despite pool elevation stability; and so forth.

#7

- * "Water Quality" - "natural river flows with minimum spill" might address some temperature and dissolved gas problems, yet also might exacerbate problems with suspended contaminants in the water column.
- * "Wildlife" - "drawdown reservoirs year-round to expose maximum acreage for long-term habitat recovery" sounds optimum, but does not necessarily optimize conditions in areas denuded of native vegetation and depopulated of native wildlife populations.

#51

5.2 GENERIC ENVIRONMENTAL CONSEQUENCES

This section addresses the general nature of environmental effects in five fundamental areas: land, water, fish and wildlife, air, and socioeconomics. Each subsection provides the following:

- a summary of the types of human activities (whether carried out to further fish and wildlife or human needs) that **cause** this effect;
- a brief description of the **consequences** that are linked with the particular effect;
- a discussion of the **degree** (context and intensity) of those effects;
- a list of potential **mitigation measures** (actions that will lessen, eliminate, or compensate for the consequences); and
- a **discussion** that provides more background information on the intended and associated effects of each activity.

"Effects" and "mitigation" are used as they appear in the CEQ Regulations definitions, 1508.8 and 1508.20 respectively.

"Effects" include the following:

(a) Direct effects, which are caused by the action and occur at the same time and place.

(b) Indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.

Effects and impacts as used in these regulations are synonymous. Effects include the ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions that may have both beneficial and detrimental effects, even if on balance the agency believes that the effect will be beneficial.

"Mitigation" includes:

- (a) Avoiding the impact altogether by not taking a certain action or parts of an action.
- (b) Minimizing impacts or limiting the degree or magnitude of the action and its implementation.
- (c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- (e) Compensating for the impact by replacing or providing substitute resources or environments.

5.2.1 Analytical Coverage

Coverage refers to the scope of an analysis in terms of where, what, when and who. This DEIS is focused on effects within the Pacific Northwest region. For purposes here, this region is defined as any part of the United States within the Columbia River Basin or within BPA's service area; although there may also be effects in the Pacific ocean off the coasts of Oregon, Washington, British Columbia, and Alaska. Most fish and wildlife effects are expected to occur within the region. Most important social and economic concerns are within the region, although some effects might spread outside the region through imports and exports.

This DEIS is intended to have a very broad [EXCEEDINGLY BROAD] coverage: the range of foreseeable Policy Directions and actions for fish and wildlife in the region. Context and intensity, discussed below, also pertain to what is covered. The time horizon for the analysis includes short-term and long-term considerations. The short term includes effects up to 10 years from now. Long-term effects extend beyond 10 years and include the time horizon needed for ecosystems to recover to near-pristine conditions. #52

Analytical perspective, discussed in 5.2.1.2 below, defines who is covered by the analysis.

5.2.1.1 Context and Intensity

The alternative Policy Directions in this DEIS are meant to describe general changes in policies relative to the Status Quo. Most actions taken under a given Policy Direction could be implemented within a wide range of *intensity* or *amount*.

- **Examples:** Any number of hatcheries could be built, any number of commercial fishing vessels could be retired, and habitat practices could be applied to any number of acres or stream miles.

This document does not try to define such specific quantities for each Policy Direction. [YET, specific quantities are essential to meaningful environmental analysis. Removal of #53

one dam does not equal removal of "some" dams in environmental effect. For example, removal of Hells Canyon would have vastly different environmental effects than removal of John Day. The scope of NEPA coverage must be refined before blanket authorization is granted to cover vast potential future actions under this "umbrella" EIS.] Rather, the DEIS tries to provide an understanding of how larger or smaller amounts of selected activities will have a strong influence on the degree of environmental effect. However, these qualitative assessments are based upon the technical data on each subject found in the SOR FEIS (USDOE/BPA, Corps, and BOR 1995), the Lower Snake River Juvenile Salmon Migration Feasibility Report DEIS (Corps, 1999a), the Business Plan FEIS (USDOE/BPA, 1995), ICBEMP SDEIS (USDA/USFS and USDO/BLM, 2000), the Framework Report (Council, 2000a), and the Federal Caucus' Conceptual Plan paper (1999b) and Basin-wide Strategy (2000b) papers. For a more quantitative presentation, please refer to these documents, including the respective appendices. The specific references are noted throughout the qualitative analysis. The exact magnitude of effects will be determined as the specific implementing actions for the chosen Policy Direction are applied. These specific effects will be consistent with the qualitative analysis identified in this document and will be further detailed in the future tiering of decisions (Tiered RODs) carrying out the Policy Direction in play. #53

This chapter discusses effects in terms of *context* and *intensity*:

- **Context:** Actions will be implemented in a frame of reference that includes society as a whole, the affected region, the affected interests, and the locality. This means that the *significance* of a given action may vary with the *setting* of the action. Both short-term and long-term effects are relevant.
- **Intensity:** The intensity of an effect refers to its *degree of severity*. We consider whether it affects public health or safety, whether it helps or harms a unique resource, whether the effects are likely to be highly controversial, the degree of risk, and the extent to which it supports or adversely affects protected species or resources. ¹

Context and intensity in section 5.2.2 (consequences for fish and wildlife) are discussed in relation to natural resources affecting the most important parts of fish and wildlife life cycles. Context and intensity in section 5.2.3 (consequences for humans) are discussed in relation to groups of people and regional communities (e.g., tribes, people who fund fish and wildlife restoration, various industries) that may be affected by actions. The distribution of effects of fish and wildlife actions among industry subgroups—owners, workers, and consumers—depends on the structure of the industry, market conditions, and institutional considerations, among other factors.

"Socioeconomic" consequences can cover many areas: social, economic, aesthetic, cultural, and health-related effects. Those effects are strongly shaped by how actions are implemented, how human behavior is affected, and by how people respond to the actions

¹ For more information on these terms, see Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act, 40 CFR § 1508.27.

Scientists, elected officials or other individuals or groups may react by seeking to adjust the policy or the actions in order to improve the intended effects or to mitigate the associated effects, thus beginning a new round of action-effect-reaction. Figure 5.1 illustrates this iterative process.

5.2.1.2 Analytical Perspective

Chapter 2 described existing environmental conditions: the natural environment as it relates today to fish and wildlife, the socioeconomic environment as it relates to humans, and the existing policy environment, including new policy initiatives. These environmental conditions were determined over time through a series of interactions between humans and the natural environment. The interactions and their results may be viewed from the perspective of humans and from that of the fish and wildlife resource.

This section reviews the environmental consequences data from both perspectives:

- **Generic effects for land and water are reviewed from the fish and wildlife perspective.** The fish and wildlife perspective is concerned with improvement of fish and wildlife resources. Land and water categories include the overwhelming share of direct effects on fish and wildlife. Most of the adverse effects described below result from human activities or actions that reduce fish and wildlife protections.
- **Generic effects for air and socioeconomic resources are reviewed from the human perspective.** The human perspective is concerned with human improvements, including economic and social values associated with fish and wildlife. Most of the adverse effects from the human perspective result from either (1) losses of valuable fish and wildlife, or (2) costs of actions taken to rebuild, recover or protect fish and wildlife populations.

5.2.2 The Major Environmental Consequences for Fish and Wildlife From Common Contributing Human Activities

Refresher: Effects on land and water resources encompass the overwhelming share of habitat effects, either intended or associated, on fish and wildlife. Generic effects for land and water are reviewed from the fish and wildlife perspective.

Below, effects are expressed in terms of the associated adverse effects of human use and development on fish and wildlife. These adverse effects would generally be associated with actions that reduce fish and wildlife protections or allow more human use and development. Potential mitigation strategies for these adverse effects are provided.

[These paragraphs are refreshingly honest.]

For actions that would intentionally reduce human use and development, a beneficial effect would generally occur from the fish and wildlife perspective.

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These beneficial effects have human values associated with increased numbers and size of fish and wildlife, and perceptions of an improved environment. Generally, the discussions below could be expressed oppositely to derive these beneficial environmental effects. Economic values may involve commercial fishing, recreational fishing and hunting, and aesthetic, option and existence values. These economic values are discussed in more detail in Section 5.2.3.2.

In the hard-copy document, Table 5.2-1 refers to State water doctrines and laws. It should read "State and Tribal water doctrines and laws.

#54

In the hard-copy document, Table 5.2-2 refers to Effect of reservoirs built and normal operating range as "Amount of riverine habitat lost." Effect also should include ecosystems transformed to quasi-lacustrine.

#55

Also in Table 5.2-2, Effect of Operations for hydropower [etc.] should include altered reservoir conditions.

The hard-copy document Section 5.2.2.3 "Fish and Wildlife" initially describes issues spanning fish and wildlife, broadly. But in the "Possible Mitigation Measures," the text reverts to describing mitigation only for ESA listed anadromous fish.

#56

The life-cycle diagrams in Figures 5-2 through 5-7 are useful summaries of major environmental effects. The relevance of the figures, and the connectivity of life cycle among and between ecosystem components, need to be brought back into the text of the analysis of environmental consequences.

#57

The hard-copy Section 5.2.3.1 provides an encouraging acknowledgement of air quality concerns due to dust blowing from exposed reservoir sediments.

#58

The hard-copy text at p.Draft/192 describes potential consequences on "Funding." At p.Draft/193 (as in several other places in the document) reference is made to mitigating the adverse effects of funding by "maximizing the effectiveness of fish and wildlife expenditures." This terminology needs to be explained. "Maximizing effectiveness" sounds very subjective and could be interpreted differently by different parties.

#59

5.2.3.2 Social and Economic Environmental Consequences

Tribal Effects²

This section is concerned with the potential adverse effects of fish and wildlife declines on tribal members and communities. The discussion is focused on the effects of human actions on Native Americans. The values of tribal members in the larger non-Indian society are covered in the other sections.

Human Activities

The types of human activities that will affect Native Americans are as follows:

- changes in timing and extent of reservoir operations, e.g., increased reservoir drawdowns;
- multiple decisionmaking processes and associated decisions reducing tribal opportunities to have and use resources (e.g., harvest opportunities decreased as use of hatcheries moved away from production purposes);
- actions reducing funds available for fish and wildlife mitigation and recovery; and
- non-Native forestry; agriculture, including irrigation, cropping and grazing; recreation; mining; urban and rural development for residential, commercial, and industrial uses.

Possible Adverse Effects

- increased exposure of cultural resources; decreased resident or anadromous fishing opportunities; decreased tourism; exposure to toxic sediments; reduced scenic values of reservoirs; land lost to new generation and transmission facilities;
- decline of practices essential to preservation of tribal culture and religion;
- reduced tribal employment; reduced tribal health; reduced protection and mitigation for fish and wildlife and their habitats; and
- greater competition for fewer resources; increased air, land and water pollution; habitat declining in quality and quantity.

Both the DREW and Framework processes were flawed, from the Spokane Tribe's perspective. Concerns of Tribes in the upper Columbia blocked area were not adequately included nor addressed. To use these previous analyses as underpinnings for current analysis is to build a new foundation upon sand.

² Considerable analysis has been conducted in the Lower Snake River Feasibility Study (Corps, 2000a, b) and its Drawdown Regional Economics Workgroup (DREW) and a report on tribal conditions titled "Tribal Circumstances and Perspective Analysis of Impacts of the Lower Snake River Project on the Nez Perce, Yakama, Umatilla, Warm Springs, and Shoshone Bannock Tribes" (CRITFC, 1999). Additional analysis is available in the Framework Report (Council, 2000a).

#60

Context and Intensity

Many factors influence the degree of effect of human activities on Native American values. The degree of effect on Native Americans is a function of the extent that decisionmakers choose to take the actions identified above, and the types, intensity, and amounts of such actions. Native American interests may be cultural, religious, economic, or recreational. Tribal members also express values related to water quality, use of traditional resources and locations, preservation of cultural resources, health education, and socioeconomic concerns such as employment and income.

Many factors affect the socioeconomic and other human effects involving tribal groups, as Table 5.2-14 illustrates.

Factors Leading to Effect	Effect
Total amount of natural resources, especially anadromous fish, available for Native American use; definition of ESU under ESA	Amount and location of fish available for tribal harvest; cultural, economic, social and spiritual value of resources available to Native Americans
Choices between competing resources such as resident fish and anadromous fish, wild fish and hatchery fish, or land for wildlife habitat or economic development	Native Americans affected depending upon rights under treaties, statutes, or executive orders
Failure to allow tribal management of natural resources and use of traditional tribal techniques and knowledge	Reliance on Western scientific method leading to tendencies of underestimating risk of extinction of stocks listed under the ESA <i>This is surprisingly and refreshingly candid commentary.</i>
Increasing number and complexity of decisionmaking processes <i>ENCOURAGING to see this aspect acknowledged. Now it needs to be ADDRESSED.</i>	Disenfranchisement of tribes as resource co-managers and sovereign entities; depletion of tribal economic and staff resources as they try to maintain presence in the numerous processes
Funding available for mitigation and recovery	Employment and incomes; level of mitigation and recovery achieved
Changes by Congress, the President, states, tribes, and agencies in laws and policies, or their implementation	Further limit, clarify, or resolve tribal trust and treaty obligations of the United States; reduction of environmental protection under Federal law

Lack of connectivity for cultural resources; emphases on either F&W or archaeology. - C.R. management issues remain unaddressed.

#61

Possible Mitigation Measures

The tribes themselves recommended many of the following mitigation measures in government-to-government consultations and policy level discussions during the comment processes on the Lower Snake River Feasibility Study EIS and the 2000 FCRPS Biological Opinions. BPA derived other possible mitigation measures based on its experiences in working with tribes and the advice of BPA's tribal liaisons.

- **Changing Reservoir Operations**
 - Update NEPA coverage; especially examine resident fish, toxic waste, and cultural resource impacts of upriver and blocked areas on tribes. Yes! NEPA coverage is not adequately updated by this broad F&W Implementation DEIS. Also need updated NHPA coverage. Cultural resources have not been addressed adequately in any previous NEPA reviews, nor in this DEIS. #102
 - Implement storage reservoir rule curves in Montana for sturgeon and bull trout.
 - Cooperate with EPA in toxic sediment studies and mitigation.
- **Multiple decisionmaking processes** YES! This is positive and useful. These "mitigation measures" are needed regardless which policy direction alternative is adopted. #103
 - Create enhanced process structure for Federal action agencies consulting with the tribes.
 - Provide appropriate level of funding for tribal participation in numerous federal processes and multi-agency decision making forums.
 - Increase number of Native Americans in agency decisionmaking positions.
- **Reducing funds available for fish and wildlife**
 - Design, locate and operate hatcheries in a manner that respects tribal cultural values and fishing practices.
 - Transfer operation of some hatcheries to tribes.
 - Raise power rates; sell BPA to entity more responsive to Native American rights and needs. ?? Namely ... ? How would any other entity successfully raise rates without encountering the same market forces encountered by BPA? And what other purchasing entity might be more responsive to Native American rights and needs? #104
 - Re-evaluate priorities in regional funding decisions regarding resident fish and wildlife and the effectiveness of mitigation. ?? This is vague. Can BPA provide examples of possible outcomes of "re-evaluating priorities"? #105
 - Increase number of mitigation contracts with tribes or businesses owned by tribes; pay tribal employment ordinance taxes on all projects on or near reservations. YES - This should be done regardless of policy direction alternative chosen and regardless of NEPA analysis. #106
- **Greater competition for fewer resources**
 - Decrease over-grazing, non-sustainable forestry, water spreading, and urbanization of rural areas; confine industrial, commercial, and residential development to urban areas.

- Clarify (? - what does this term mean in this context?) tribal trust and treaty rights; fund and enforce them. #107
- Apply conservation necessity principles to assure that treaty fishing takes priority over non-treaty fishing and other sources of salmonid mortality.
- Enforce Clean Water Act total daily maximum load requirements on all tributaries in all states in Pacific Northwest.

Discussion³

This section is encouraging in its acknowledgement of historical and current reality for Native Americans. It does not gloss over the inequities and disparate impacts.

Native Americans have unique concerns that transcend their roles in the non-tribal economy. Given the broad cultural and spiritual relationship between Columbia Basin natural resources and tribal peoples, it is likely inappropriate—and also not fully possible—to establish linkages between Policy Directions and the circumstances of tribal peoples based on some single measure. Direct information provided by Native Americans provided an important basis for identifying which Policy Direction would improve tribal living circumstances, and which would not.

Historically, Native Americans have been substantially affected by the cumulative destruction of the salmon-producing capabilities of the FCRPS and by declines of many game and plant species upon which tribes depended. Much of this destruction has often been accompanied by assurances of mitigation that, with time, did not occur as promised by the government or as anticipated by the tribes. As a result, the tribes are skeptical of promises regarding mitigation. Policy Directions that do not further tribal goals for fish and wildlife will likely engender litigation and even greater tribal skepticism of the Federal government.

Assessment of tribal effects depends heavily upon whether populations of key fish and wildlife species, and more broadly, Columbia Basin ecological diversity, increases or decreases. Tribes fear that the Federal commitment to upholding trust responsibilities and treaty rights will continue to diminish under the Status Quo or other Policy Directions that do not place a higher priority on mitigation and recovery of all fish and wildlife. Policy Directions that do not curb or concentrate growth and development will support encroachment on resources valued by tribes and diminish the area over which tribes may exercise their rights to manage and use resources. In the long run, tribal influence may be eroded and, both off and on their reservations. Tension and conflict will increase between Native Americans and other citizens as tribes increasingly compete with others for limited resources.

³ This text is paraphrased from the Human Effects Analysis of the Multi-Species Framework Alternatives (Council, 2000a).

Tribes may overextend their political and economic resources attempting to participate in the many processes in which tribal interests may be adversely affected—hydropower relicensing proceedings, the Council's program, harvest regulation, forest and range planning, siting of new generation and transmission facilities, harvest and hatchery agreements, water rights adjudications, NEPA processes, ESA consultations, and CWA enforcement actions, to name a few. With the shrinking of tribally influenced areas and over-extension of tribal government, Native American culture may also be further fragmented and lost, especially traditional knowledge and practices pertaining to natural resource management.

Conflict could increase between treaty tribes and Executive Order tribes under alternatives that emphasize anadromous fish mitigation and recovery. Upriver or blocked-area Executive Order tribes often face or perceive increased environmental, social, and economic impacts from efforts to address ESA-listed anadromous fish because there is less funding available for resident fish and wildlife. In addition, there are greater upriver impacts from deeply drafted reservoirs. Upriver tribes feel excluded from mitigation and recovery processes that omit proposals to reintroduce anadromous fish to areas permanently blocked by dams or laws and policies that prohibit them from participating in fisheries. These tribes also may view an emphasis on anadromous fish as slighting their cultures, some of which have historically depended more on resident fish and wildlife than anadromous fish.

Hatchery, harvest, and implementation of the ESA all directly affect all the Region's tribes. Closing hatcheries for all but conservation purposes—that is, using hatcheries only for preserving genomes, not for supplementation or production for harvest—could severely reduce the fish available for harvest and undermine mitigation promises. Or, increased use of hatcheries for production or supplementation could, in the long run, have deleterious effects on the genetic integrity of wild stocks and potentially lead to reduced survival and declining fish population growth rates. Continued focus on lower Columbia River hatcheries, to the exclusion of upper river hatcheries could favor downstream non-tribal harvest over upper basin tribal harvest. Finally, continuing to define ESUs restrictively (such that individual stocks are protected instead of whole species) will prolong mitigation and recovery efforts by forcing all activities in all four Hs to be closely regulated—including tribal harvest.

The hard copy section on "Adverse Economic Effects from Declining Fish and Wildlife Populations," pp. Draft/200-202, warrants comment. This is useful exposition of economic concepts such as existence values and bequest values.

* On p. Draft/202, a paragraph begins with the sentence: "Even with the uncertainty of measurement, most studies agree that ... economic value of lost uses is less than the non-use values." ??What does this mean? Can it be restated to provide a clearer conclusion?

* Same page, in the paragraph concluding the discussion of economic terms, the text reads: "Regional citizens include Tribal members. ... Primary values are cultural, religious and subsistence. Fish and wildlife losses might reduce levels of self-sufficiency, perceptions of control, and tribal health. Tribal members also have

economic interests in common with the larger non-Indian society" This paragraph is very weak on the DEEP significance to Tribes of lost fish and wildlife and cultural resources.

#70

Cultural Resources and Aesthetics

This section, unfortunately, reverts to the "stones and bones" perspective on cultural resources. To the Tribes, Cultural Resources include a clean environment, thriving fish and wildlife populations, and traditional lifeways and religious practices associated with the natural environment. Although Tribal perspectives are given brief coverage elsewhere in the document, this section on cultural resources should emphasize the points that Tribes have made repeatedly during discussions with BPA and other federal agencies. To limit the definition of cultural resources, and do lump the topic into a brief section also covering "aesthetics," is to miss the point of the many heartfelt descriptions by Tribal elders and Tribal cultural representatives.

#71

Cultural resources are specific places that may be or are important in the history of the nation and its peoples. The term encompasses archaeological resources such as prehistoric settlements and artifacts, historical resources such as settlers' homes and other buildings, and existing cultural resources such as buildings, structures, and locations that help define and maintain existing cultures.

Applicability or eligibility is largely derived from and limited by Federal law, regulation, and Executive Orders, and Departmental or agency standards or policies. A cultural resource becomes important as it bears witness to the values, uses, meanings, and relevance people hold for their natural, cultural, and spiritual world. An historic property or historic resource—any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion on the National Register, including artifacts, records, and material—remains related to such a property or resource.⁴

Aesthetic effects involve the qualities of sensory experiences. These qualities are inherently a matter of personal value judgments, and different people have different preferences. For many aesthetic values, there is no commonly accepted basis for what is beneficial or adverse. Some people prefer natural attributes, while others prefer developed ones.

Human Activities

- Reservoir drawdown would expose reservoir sediments and lead to impaired aesthetic values. Increased emissions from thermal generation could impair visibility.
- Certain river operations will involve the modification of structures such as spillways, dam embankments, and fish passage facilities, potentially causing direct effects on historic or cultural properties.

⁴ Definitions adapted from Governors, 2000.

#108

#11

#70

- Habitat restoration actions could convert farmland to native vegetation, and preservation could keep some land from being converted to urban uses.

Possible Adverse Effects

Resume here the candor displayed in earlier sections. "Exposure and loss of cultural resources" is euphemistic. Speak clearly of exposing burials, destroying traditional gathering areas, causing desecration of sacred sites, decimating salmon populations that are the heart and soul of Tribal culture. If this EIS is truly to assess impacts, it must describe those impacts truthfully.

#72

Possible adverse effects on cultural resources and aesthetics include the following:

- exposure and loss of cultural resources;
- exposure of unsightly reservoir sediments;
- reduced visibility; and
- changes in scenic qualities that some persons would dislike.

Possible Mitigation Measures

Adverse effects can be mitigated by planning and acting to protect historic and cultural resources. NOT TRUE! Many historic and cultural resources have been "planned" and "acted" into oblivion. This same tactic was adopted in the SOR EIS and its offspring, the "Reservoir Cooperating Groups." To truly mitigate for adverse impacts on cultural resources, the full range of four "H's" must be adapted to minimize impacts and maximize protection. It is not an easy task, but a necessary one.

#73

Discussion

Changing water levels and flows can cause wave action, inundation, and exposure of reservoir drawdown zones, all of which can affect cultural resources. System operations can also cause indirect consequences for historic properties as a result of changes in the human use and aesthetics of shore and drawdown zones.

The following paragraph is far too sanitized to portray reality:

Effects within the reservoir pool occur most often to non-structural archeological deposits, since initial reservoir construction and filling usually removed or damaged above-ground or structural cultural resources such as historic architecture. Direct effects on archeological deposits resulting from reservoir shoreline fluctuations occur differently in each of three reservoir zones: (1) exposed beach; (2) wave-impact; and (3) inundation zones. Indirect effects on historic and cultural properties due to system operation strategies involve changes in the human use of the shore. The revegetation and deflation of archeological sites in the exposed beach zone make them more visible to the public, increasing the likelihood of theft, vandalism or disturbance.

#74

Decisions to develop or permit camping, summer homes, hiking trails, or off-road vehicle uses may all lead to increased effects on historic and archeological sites from human caused erosion, vandalism, and artifact theft.

System operation strategies that change land uses might also change the integrity of "feeling" or association of a historic property. Reservoir drawdown might destroy the visual integrity of a historic sight or traditional cultural property by introducing an element that is inconsistent with its historic or cultural character.

Reservoir operations, primarily drafting, can have pronounced aesthetic effects on adjacent lands. These consequences result from a number of factors, including increased shoreline visibility and contrast, erosion, changes in recreational facilities, reduction in the size of embayments and seep lakes, changes in water characteristics, and production of dust and odors. A decrease in aesthetic quality at a project can affect recreational use and have social and economic consequences for visitors and residents.

The hard-copy Figure 5-8, Habitat-Oriented Actions, describes as an Associated Side Effect on Humans the possible adverse effects of impact to Tribes' culture, health and spirituality, then cites "Compensation" as a "Mitigation Measure." This is insulting in its bare interpretation. It should be removed or rewritten.

#75

Hard-copy Figure 5-9, Harvest-Oriented Actions, describes possible adverse effects on Tribes and cites as Mitigation Measures: "-Provide for treating fishing" and "Transfer some hatchery operations to tribes." These proposed mitigation measures do not ensure necessary subsistence, ceremonial, and recreational harvest for non-treaty Tribes. The same Figure 5-9 describes mitigating for possible "Impacts to cultural traditions associated with hunting and fishing" by "Federal and state subsidies." Where in the text is this mitigation concept more fully described?

#76

Hard-copy Figure 5-10, Hatchery-Oriented Actions, demonstrates a conceptual disconnect. "Possible adverse effects: - Disenfranchisement of tribes as resource managers; - Economic impacts; - Amount and type of fish available for tribal harvest; [and,] -Tribal trust and treaty rights." These possible effects simply are not addressed by the described "Mitigation measures: - Provide for treaty fishing; [and,] - Transfer some hatchery operations to tribes."

#77

Hard-copy Figure 5-11, Hydro-Oriented Actions, demonstrates both a grasp of the Tribal perspective, and a misunderstanding. "Mitigation measures" for "Associated Side Effects" on "Tribes" should include "Modify hydro operations." "Mitigation measures for "Cultural and Historical Resources" must include much more than "Documentation and protection."

#78

Section 5.2.4 "Context and Intensity of Policy Directions" provides interesting analysis. To this reader, it is unclear how the analysis of effects incorporates possible mitigation measures. Can this be described in the text, in proximity to the analysis?

#79

5.3 ENVIRONMENTAL CONSEQUENCES OF POLICY DIRECTIONS

With the information from Section 5.2 in mind—the potential environmental consequences of human activities as they relate to both fish and wildlife and to socioeconomic factors—we can now turn to the environmental consequences of implementing actions as they fall under each of the five Policy Directions. These environmental consequences result from the interactions of humans, fish, and wildlife, and the implementing actions.

The Status Quo Policy Direction (the "No Action" alternative) provides the baseline against which the other Policy Directions are compared. Status Quo represents the future if current policies are not changed. This future includes, among other important attributes, increasing human population, additional urbanization, continued ocean and tribal harvest, the existing hydrosystem with currently planned improvements, and existing fish and wildlife recovery and mitigation program efforts.

Fundamental areas of environmental consequences are *air, land, water, fish and wildlife, and social and economic effects*. This section addresses the general nature of the effects in each of these fundamental areas. Each section below will provide the following:

- an illustration of the anticipated environmental effect compared to environmental conditions in the Status Quo Policy Direction; and
- a brief description of why the effect occurs in relationship to conditions under the Status Quo Policy Direction.

First, environmental conditions under each Policy Direction are compared to environmental conditions in the Status Quo Policy Direction in a graphic format. The effects illustrated in the graphics are based on long-term effects (10 years or more). Major short-term effects are noted below the tables. Short-term effects will be examined in greater detail in future project-specific tiered RODs. **NEED MORE DETAILS!**

Shading is used to quickly show the reader whether the Policy Direction results in *more adverse, the same, or more favorable conditions* relative to the Status Quo policy. The ratings were assigned through a modified Delphi process using a panel of experts.⁵ Although the credentials and capabilities of these panel members are acknowledged, another panel should be convened, to include multiple disciplines from Tribes. Better yet, this analysis should be directed by Federal, State and Tribal policymakers through the Columbia Basin Forum. "Adverse" "same" or "favorable" are defined with respect to a particular perspective, either that of fish and wildlife, or human. The human perspective is meant to capture the human concerns—health, economic and social—that are beyond and separate from the human interest in fish and wildlife.

⁵ Charles Alton, Roger Mann, Steve Mader, John Pizzimenti, Jean Edwards, Ben Underwood, Kathy Pierce. See List of Preparers for backgrounds.

Environmental conditions under the Status Quo Policy Direction are briefly described, and other Policy Directions are compared to the Status Quo. The objective of this analysis is to describe the expected environmental conditions under the possible range of implementing actions for the fish and wildlife recovery effort under each Policy Direction. The comparisons of the five Policy Directions to Status Quo are meant to show how the environmental consequences of each Policy Direction may differ from conditions in the Status Quo Policy Direction. This analysis *does not* try to make a value judgment on whether Status Quo or the current state of the environmental variables is good or bad.

The analysis in this DEIS is, by design, more qualitative than quantitative; this is a policy-level evaluation, not a site-specific one. Therefore, the analysis is based upon predictable *relationships* between changes to the environmental elements (land, air, water) and the consequence to fish, wildlife, and humans. Need more information on individual components to make analysis of relationships meaningful. The overall intent is to align the level of decisionmaking with the appropriate level of analytical detail so that the public and decisionmakers can better understand the range of potential effects at each stage of decisionmaking. This intent is achievable without minute level of detail, but cannot be accomplished credibly without more detail than has been incorporated to date. There is a minimum threshold of detail needed to make the environmental analysis meaningful. The Draft EIS is, at this point, too sketchy to provide true analysis of impacts. Any necessary site-specific analysis will be carried out when the actual implementation actions for the chosen Policy Direction are known. For many actions, this step would be too little too late. More information is needed now, BEFORE selecting a policy direction. This clarifying information and the decision for the site-specific projects will then be tiered to the overall Policy Direction decision, as appropriate.

The Policy Directions include the full range of reasonably foreseeable future directions for fish and wildlife policy in the region. This range includes Policy Directions that may be perceived as more favorable for fish and wildlife as well as those that may be perceived as more favorable to economic and social well-being. Therefore, for any Policy Direction, the same environmental consequences may be both beneficial and adverse, depending entirely upon whether the perspective is one of fish and wildlife or economics and social well-being. The reader is provided with a description of these trade-offs associated with each Policy Direction.

5.3.1 Source for Analysis

Over the last several years, an enormous database of environmental analysis (some more useful and credible than other) has been created. In our analysis, we sought to maximize the use of this existing database. Some of the most important sources are the Columbia River SOR EIS [SOR was flawed as to cultural resources analysis, and not thorough as to fish, wildlife, water and the environment. SOR should not be relied upon. Conditions and management strategies have changed significantly since SOR RODs were entered.], the Lower Snake River Juvenile Migration Feasibility Study, and reports from the Multi-Species Framework Process and Federal Caucus. Other important sources include each

#82
#83
#84

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#81

#85

of the relevant BiOps prepared by NMFS and USFWS in the region, BPA's Business Plan EIS, and the Forest Service/BLM's ICBEMP. Many environmental documents are incorporated by reference and are listed in Section 1.3.3 and in the bibliography. Tribal participation in these NEPA processes was minimal. The Spokane Tribe's/UCUT's interests were not protected in these processes and the NEPA documents do not adequately represent the range of environmental and cultural resource impacts.

#86

This DEIS is a compilation of recent processes, each aimed at different facet of fish and wildlife conservation and recovery efforts, with the goal of placing relevant information before the public and decisionmakers in a structured manner to facilitate analyzing it together. For example, the Columbia River SOR FEIS considered alternatives to Columbia River system hydro operations and the effect of those changes on users of the system and the environment.⁶ The SOR described the effects of each alternative system operations by resource or subject area (e.g., air quality, water quality etc.). A more quantitative analysis of each alternative and its anticipated effects can be found in SOR Appendices A through O, separated by subject area. This analysis was instrumental in identifying the hydrosystem activities and potential effects for each subject area in this policy-level analysis. This DEIS is not designed to replace the SOR, but merely to incorporate its data in the consideration of a new Policy Direction that also includes an assessment of additional hydro-related actions outside the scope of the SOR, including habitat, harvest and hatchery actions. THIS IS CONFUSING. Do the federal agencies want to dispense with SOR as NEPA coverage? Or retain it? Or retain what's useful to agency decision-making, but discard the remainder? With adoption of new Biological Opinions, the hydrosystem operating regime is changed. SOR environmental analysis was inadequate even for the times and operations SOR encompassed. We question the tiering of any current and future fish and wildlife decision-making based on SOR NEPA coverage.

#87

The qualitative effects analysis below was provided by an informal panel of experts who are familiar with the existing database of environmental analysis. The experts reviewed the sample implementation actions, developed qualitative ratings, and met formally and informally with other experts to develop the ratings and the qualitative descriptions of how each rating was developed.

The use of multiple sources has been critical to the qualitative analysis used in this DEIS. It is recognized that comparison across the many studies and processes that have occurred in the last 10 years is somewhat ambiguous and subjective. Complexity arises because studies differ in the kinds of models and assumptions they use, e.g., different baseline conditions such as base years, biological and economic assumptions, and different hydrologic periods. We believe that the qualitative rankings will serve as a realistic if imprecise reflection of the results from these other sources. This belief may be flawed.

#88

Some environmental effects are described and labeled as "better" and "worse." These terms are equivalent to the NEPA terms "beneficial" and "adverse." They describe

⁶ USDOE/BPA, corps, and Bureau, 1995

environmental consequences in the conventional terms as defined by NEPA. The use of these terms is not intended to place a value judgment on the outcome.

5.3.3 Social and Economic Environment

This discussion is focused on commercial activities and social consequences most directly associated with fish and wildlife concerns. The shading used to indicate adverse and beneficial effects is based completely on a human perspective, exclusive of human values related to fish and wildlife populations or habitat recovery. Broad categories of effects that are evaluated in this DEIS include commerce, tribes, funding, cultural/historical resources, and aesthetics. Where possible, the environmental effects were evaluated and described for subcategories of effects where the analysis allowed. These effects are evaluated, respectively, from the perspective of economics, tribal concerns, people who pay for fish and wildlife restoration, cultural and historical resource protection, and human aesthetic values.

In hard-copy Table 5.3-5B, the claim in the first row labeled "Existing Conditions," should be clarified or expanded in a footnote. The complex formula used to derive annual losses from F&W actions should be summarized to raise readers' awareness.

} #89

The brief text on pp. Draft/249-250 should be expanded to highlight that an assumption of no negative effects from environmental degradation (under Commerce Policy Direction) would be a ludicrous assumption.

} #90

5.3.3.2 Tribes

The table below shows how tribal concerns would be affected by the Policy Directions. All tribal effects are above and beyond, and independent of, economic and social values tribal members experience in their roles in the larger society. Concern for effects include those on the ability to harvest fish, as well as on human-centered tribal concerns such as health, spirituality, and tradition. Tribal health is associated with consumption of traditional foods such as salmon, and additional income from fishing that enables better life style and health care. Spirituality is associated with the quality and opportunities for ceremonial harvest that have religious significance, and the ability to sustain religious and cultural traditions. Traditions include ability to use traditional resources and places at traditional times in traditional ways.

Potential changes are shown, by shading, to indicate whether a given Policy Direction would tend to have effects in the identified subcategory that are the same as, greater than, or less than, existing conditions from the perspective of tribal members.

Table 5.3-6A: Tribal Effects across the Policy Directions

Effects Subcategory	Status Quo	Natural Focus	Weak Stocks	Sustained Use	Strong Stocks	Com. Focus
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Effects Subcategory	Status Quo	Natural Focus	Weak Stocks	Sustained Use	Strong Stocks	Com. Focus
Fish Harvest						
Health						
Spirituality						
Tradition						

Much Better Better Same Worse Much Worse

The following section is better than previous sections in getting to the heart of Tribal issues:

Summary of Effects: Tribal fish harvest is associated with the non-commercial realization of treaty harvest rights and historical harvest practices. Tribal health, spirituality, and tradition are all positively associated with subsistence harvest, restoration of habitat, diversity of native fish and wildlife species and recovery of lands made available for tribal use.

Natural Focus and Weak Stock provide the more diversified fish harvest and land restoration. Sustained Use Focus could provide increased harvest and utilization, but some upriver stocks, especially Snake River and other severely depressed stocks, would not recover as much. Strong Stock and Commerce Focus are designed to provide more fish through greater use of hatcheries, but some observers believe tribes would be made worse off because of changes that would be required in traditional practices (such as fishing locations defined by treaties). The Effect Area table below expands on this reasoning.

Table 5.3-6B: Tribal Effects across the Policy Directions (Detail)

EFFECT AREA: TRIBES (1): Fish Harvest less - worse	
Existing Conditions	Tribal harvest substantially reduced from historic levels. Most upriver opportunities lost.
POLICY DIRECTION	
Status Quo	Harvest and utilization opportunities expected to continue at about the same as existing conditions.
Effect in Comparison to the Status Quo Condition:	
Natural Focus	Until stocks recover, ceremonial and subsistence fishing levels only. Then, more diversified harvest would occur, but be limited to surpluses above naturally sustaining populations. Long-run effects would be beneficial as fish runs recover and return to numerous rivers.
Weak Stock Focus	Similar to Natural Focus. Tribes would adopt more selective harvest methods to avoid weak stocks. Fishing would occur as long as weak stocks were not negatively affected. Long-run effects might be beneficial (more harvest opportunities in more locations).
Sustained Use Focus	Tribal harvest would be allowed as long as weak stocks were not negatively affected. However, benefits for some tribes might be less than Natural Focus or Weak Stock because upriver stocks would not be recovered as much. Upriver stocks about the same as Status Quo, overall effects about the same as Status Quo.
Strong Stock Focus	Tribal fishing would occur as long as healthy stocks were not negatively affected. Hatchery-supplemented stocks would be used to meet mainstem and tributary tribal harvest objectives. Overall, about the same as Status Quo.
Commerce Focus	Some tribal fishing opportunities would be created with artificial production and fish farming, but some upriver opportunities are reduced. Overall, worse than under Status Quo.

EFFECT AREA: TRIBES (2): Health, Spirituality and Tradition	
Existing Conditions	Health, spirituality, and tradition impaired by loss of subsistence and ceremonial harvest, loss of wildlife, and loss of traditional lands.
POLICY DIRECTION	
Status Quo	Similar to existing conditions except spirituality and tradition further impaired by increasing non-Indian population and competition for resources.
Effect in Comparison to the Status Quo Condition:	
Natural Focus	Relative to Status Quo, tribes would benefit by increasing subsistence and ceremonial harvest and access to hunting and riverside lands once used for cultural, material, and spiritual purposes. ⁷
Weak Stock Focus	Similar to Natural Focus, although certainty of fish restoration would be less than for Natural Focus. Tribes would benefit by regaining access to restored lands and resources once used for cultural, material, and spiritual purposes. Reservation employment opportunities, income and health associated with active restoration might increase.
Sustained Use Focus	Some tribes would benefit from increased utilization opportunities, especially downriver. Upriver stocks may not be improved as much, but upriver fish and

⁷ Draft Summary, Corps, 1999a, p. 27.

EFFECT AREA: TRIBES (2): Health, Spirituality and Tradition	
	downriver. Upriver stocks may not be improved as much, but upriver fish and wildlife opportunities should increase overall. Reservation employment opportunities associated with active restoration might increase. Overall, more opportunities than under Status Quo.
Strong Stock Focus	Further loss of weak stocks would be damaging to tribal culture and well-being. However, healthy stocks would increase, and associated tribal health and well-being may also increase. Some tribes would benefit from increased fishing opportunities, especially downriver. Reservation employment opportunities associated with active restoration might increase. Overall, however, the same or slightly fewer opportunities than under Status Quo.
Commerce Focus	Tribal health and spirituality would be adversely affected by loss of traditional fishing practices and locations (defined by treaties), change in fishing techniques and increased competition from non-Indian use of resources and population growth. Worse to much worse than under Status Quo.

The hard-copy document inserts Section 5.3.3.3 "Costs and Funding" here. Probably better to have Cultural/Historical Resources follow directly after TRIBES: Health, Spirituality and Tradition.

#92

5.3.3.4 Cultural/Historical Resources

The table below shows how cultural and historical resources might be affected by the Policy Directions. Cultural concerns include archaeological resources that may be exposed or hidden beneath the surface of water or land. Historical resources include historical and prehistoric and other structures built within written history. Changes are shown, by shading, to indicate whether a given Policy Direction would tend to have effects that are the same as, greater than, or less than under Status Quo. Changes that cause increased losses of cultural resources are worse. Changes that save cultural resources are better.

Table 5.3-8A: Cultural/Historical Effects across the Policy Directions

	Status Quo	Natural Focus	Weak Stocks	Sustained Use	Strong Stocks	Com. Focus
Cultural/Historical Resources						

Much Better	Better	Same	Worse	Much Worse

Summary of Effects: The most important sources of effects are exposure of inundated archeological sites and destruction of historical structures. The Effect Area table below expands on this reasoning.

Table 5.3-8B: Cultural/Historical Effects across the Policy Directions (Detail)

EFFECT AREA: SOCIAL (1): Cultural Historical Resources loss of resources – worse	
Existing Conditions	Some cultural resources have been inundated by reservoirs and buried by sediment. Many historical structures exist throughout the region.
POLICY DIRECTION	
Status Quo	Same as existing conditions. Some loss of historical and cultural resources over time.
Effect in Comparison to the Status Quo Condition:	
Natural Focus	Sites that have been covered and protected by water for years would be exposed. There would be some benefit from documenting the resources, but there would be greater adverse impact on the exposed sites from vandalism. Some historical structures abandoned or removed. The effects would worse than under Status Quo.
Weak Stock Focus	The effects would be nearly the same as for Natural Focus, except fewer reservoirs would be drawn down. The overall impact would be more adverse than under Status Quo.
Sustained Use Focus	Similar to Status Quo. Some historical structures might be removed.
Strong Stock Focus	Less exposure than under Status Quo, as reservoirs would remain more constant.

5.4 ENVIRONMENTAL CONSEQUENCES OF RESERVE OPTIONS

Again, the "moving target" of this environmental analysis raises concerns about the scope and breadth of NEPA coverage. The validity of such a broad-sweep NEPA "analysis" is questionable.

} # 92

Just as certain potential actions within the scope of this DEIS would have been considered unreasonable 5-10 years ago, actions currently dismissed as unreasonable may become viable 5-10 years from now. Such actions, representing the more extreme approaches to the fish and wildlife recovery, are characterized in this DEIS as Reserve Options (please see Chapter 4). Undoubtedly, fish and wildlife policy will adjust to accommodate the advancement of science or a material change in circumstances. The Reserve Options may provide future decisionmakers with the ability to extend or intensify a Policy Direction to fit future circumstances. For example, these sharply divergent actions could be implemented in response to a drastically lower regional priority for fish and wildlife recovery; the successful recovery of a listed species of fish and wildlife; or the continued collapse and further listings of fish and wildlife due to unsatisfactory recovery efforts.

Extreme measures at a given point in time are usually imprudent measures, and fish and wildlife policy is no exception to this rule. However, the relationship methodology provides the analytical flexibility to assess, at least preliminarily, the range of actions and degree of the impacts associated with extreme circumstances. As demonstrated in Table

5.4-1, these extreme actions produce some unwanted and unexpected results under existing circumstances.

For example, the Reserve Options RO-1 through RO-6 push the concept or theme of the Natural Focus Policy Direction to extremes. These Options would include the following actions:

- Restore pre-dam habitat (RO-1) and/or preserve all existing habitat (RO-2).
- Ban all harvest (RO-3).
- No hatcheries (RO-4).
- Operate the existing hydrosystem entirely for fish and wildlife (RO-5) or breach/remove all of the mainstem dams (RO-6).

Reserve Options RO-7 through RO-12 push the theme of a more extreme Commerce Focus Policy Direction. These Options would include the following actions:

- Restore habitat only if most cost-effective (RO-7), or maximize commercial use of habitat resources (RO-8).
- Allow unrestricted harvest (RO-9).
- Maximize artificial production (RO-10).
- Operate existing hydrosystem entirely for commercial purposes (RO-11), or build new dams if cost-effective (RO-12).

The following is an illustration of the possible long-term environmental consequences of these extreme measures compared to Status Quo. Keep in mind that in the short-term, certain impacts could be extraordinary; however, the long-term impacts would be the objective of a future decisionmaker and, therefore, are the basis for the assessments in Table 5.4-1.

Table 5.4-1: Comparison of the Main Sets of Reserve Options Against Baseline Conditions* and Summary of Effects

<i>Effect Category</i>	<i>Status Quo*</i>	<i>Reserve Options 1-6 Extending Natural Focus</i>	<i>Reserve Options 7-12 Extending Commerce Focus</i>
NATURAL ENVIRONMENT			
Land Habitat			
Upland			
Riparian/Wetland			
Water Habitat:			
Nitrogen Supersaturation			
In-Stream Water Quality			
Non-Thermal Pollution			
Sedimentation			
Temperature/Dissolved Gas			
Amount of River Habitat			
Reservoir Habitat			
Fish & Wildlife			
Anadromous Fish			
Resident Fish			
Wildlife			
Air Quality			
SOCIAL and ECONOMIC			
Commerce			
Commercial Interests			
Recreation (including fishing & hunting)			
Economic Development			
Tribes			
Fishing Harvest			
Health, Spirituality, & Tradition			
Costs and Funding			
Cultural/Historical Resources			
Aesthetics			

* Status Quo = Baseline conditions. For more information on existing conditions, please see Section 2.4.

Much Better	Better	Same	Worse	Much Worse

EFFECT AREA: LAND More habitat = better	
Reserve Options	Effect in Comparison to the Status Quo Condition:
Reserve Options (1-6) Extending Natural Focus	In the short term, riparian habitat would be eliminated as river boundaries change due to breaching. New riparian habitat would gradually and naturally re-establish along new river banks. Emphasis on passive restoration and preservation following a natural progression of fish and wildlife recovery without a specific target species. Terrestrial/riparian restoration by ceasing human land-use activities such as farming, grazing, mining, and development in or encroaching upon pristine wilderness areas. Periodic natural disturbance events would reset restoration trajectories. Overall natural habitat improvement is much greater than under Status Quo.
Reserve Options (7-12) Extending Commerce Focus	Land not preserved for habitat unless benefits exceed costs. Some existing terrestrial habitat would be developed for commercial interests. Federal, regional and state programs for habitat restoration would be limited and focused on the land most valuable for species and less valuable for commercial interests. Emphasis on private, cost-effective, and efficient habitat preservation and creation. Use market incentives, such as tradable mitigation credits. Increase in artificial habitat or preservation as a trade against new development. Provide incentives (start-up grants, tax breaks, etc.) and technical assistance to encourage local landowners, businesses, corporations, and trustee agencies to improve and protect wetland, riparian and terrestrial areas. The amount of fish and wildlife habitat would likely be less than under Status Quo.

EFFECT AREA: WATER (1) Nitrogen Super Nitrogen supersaturation More = worse	
Reserve Options	Effect in Comparison to the Status Quo Condition:
Reserve Options (1-6) Extending Natural Focus	Several dams would be breached. The closer the return to a natural river, the less nitrogen supersaturation would remain a problem. A completely natural river (no dams anywhere) would return nitrogen supersaturation levels to those that would have occurred as a result of flow dynamics experienced for the given natural structures (e.g., water falls, rapids, etc.). Those dams that remained might elevate TDG locally per Status Quo situation.
Reserve Options (7-12) Extending Commerce Focus	Except in instances of flood control releases or large flows, spill would be minimized with a commercial focus. Therefore, saturated gas problems would be the same or less than under Status Quo.

EFFECT AREA: WATER (2) In-Stream Water Quantity More = better	
Reserve Options	Effect in Comparison to the Status Quo Condition:
Reserve Options (1-6) Extending Natural Focus	Substantially reduce existing surface water withdrawal through land retirement. Improve instream flows, reduce water temperature, and improve water quality relative to Status Quo. Surface water screening and irrigation management would be used on many remaining diversions. Increase water conservation. Municipal withdrawals would continue, but with intense efforts to meet increased conservation standards. Remaining storage would be managed to mimic natural flow conditions. In the short term, sedimentation could significantly impair downstream river quality.

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EFFECT AREA: WATER (2): In-Stream Water Quantity More - better	
Reserve Options (7-12) Extending Commerce Focus	Irrigation, industrial, and municipal water withdrawals would increase more than under Status Quo to accommodate growing population, commercial, and residential needs. Cost-effective and efficient screening might be used to avoid direct mortality of listed stocks. Non-thermal pollution levels are likely to increase (see below). Use of storage and flows for fish would decrease in comparison to Status Quo.

EFFECT AREA: WATER (3): Non-thermal pollution More - worse	
Reserve Options	Effect in Comparison to the Status Quo Condition:
Reserve Options (1-6) Extending Natural Focus	Improve water quality by eliminating sources of pollution overall. Eliminate discharges of other contaminants to meet more stringent water quality criteria. Strong new controls on wastewater and other point and non-point sources. Increased water quality standards along with stronger enforcement. Drafting reservoirs or breaching dams could stir up contaminants, which would be adverse for humans, fish, and wildlife in the short term. In the long term, however, on-thermal pollution would be less than under Status Quo.
Reserve Options (7-12) Extending Commerce Focus	Existing water quality standards may be eased. Emphasize voluntary compliance rather than regulation. Some use of positive incentives, some additional pollution allowed, trading of pollution credits allowed to accommodate industrial growth. Pollution controls must be efficient. Non-thermal pollution may become somewhat worse than under Status Quo.

EFFECT AREA: WATER (4): Sedimentation More - worse	
Reserve Options	Effect in Comparison to the Status Quo Condition:
Reserve Options (1-6) Extending Natural Focus	Sediment increase downstream from breached facilities for 5-10 years as accumulated reservoir sediments are flushed downstream. Agricultural land retirement and reduction in other human uses reduces sediment loads over the long term relative to Status Quo.
Reserve Options (7-12) Extending Commerce Focus	Sedimentation will increase as urbanization, agricultural and commercial development increase, but minimally would comply with water quality standards. Prime watersheds probably would improve. Sediment controls must be efficient (benefits exceed costs). The overall sedimentation may get worse than under Status Quo due to development.

EFFECT AREA: WATER (5): Temperature Dissolved Oxygen higher - worse	
Reserve Options	Effect in Comparison to the Status Quo Condition:
Reserve Options (1-6) Extending Natural Focus	A return to a natural river, natural tributaries, land retirement and strong thermal pollution controls could gradually help recreate presettlement water temperature ranges, including normal fluctuations for the rivers affected. Upstream reservoirs (upper Columbia, upper Snake, Clearwater) would have to be managed for flow in dry years to avoid downstream problems. Less opportunity for solar heating. Fewer opportunities to control temperature through controlled releases. Overall, both temperature and dissolved oxygen would be somewhat better than under

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EFFECT AREA: WATER (5): Temperature Dissolved Oxygen higher worse	
	Status Quo, but conditions would be worse or not improved in very dry conditions.
Reserve Options (7-12) Extending Commerce Focus	Manage thermal pollution to insure health and safety of human needs and consumption. Any temperature or gas control must be cost-effective, and much would be regulatory driven. Temperature in prime watersheds might improve. Overall, temperatures and dissolved oxygen may be slightly worse than under Status Quo. If more dams are built, more reservoirs would be created, which would likely increase water temperature.

EFFECT AREA: WATER (6): Amount of Stream/River Habitat more better	
Reserve Options	Effect in Comparison to the Status Quo Condition:
Reserve Options (1-6) Extending Natural Focus	Much more stream and river habitat created by breaching or drawdown of up to six reservoirs and removal of some dams on tributaries.
Reserve Options (7-12) Extending Commerce Focus	About the same as or less than under Status Quo because only cost-effective actions would be taken. Also, if more dams were built, some river habitat would be converted to reservoir habitat.

EFFECT AREA: WATER (7): Amount of Reservoir Habitat more better	
Reserve Options	Effect in Comparison to the Status Quo Condition:
Reserve Options (1-6) Extending Natural Focus	Reservoir habitat would be eliminated as storage dams are breached. If all dams were removed, reservoir habitat would be limited to that created by natural reservoirs. Amount of reservoir habitat would be much less than under Status Quo.
Reserve Options (7-12) Extending Commerce Focus	The existing reservoir system would be preserved for commercial purposes. If more dams are built (if cost-effective), more reservoir habitat would be created. The amount of habitat would be the same or more than the Status Quo.

EFFECT AREA: FISH AND WILDLIFE (1): Anadromous Fish More better	
Reserve Options	Effect in Comparison to the Status Quo Condition:
Reserve Options (1-6) Extending Natural Focus	Restoration to natural land and water conditions, and elimination of all harvest. Would likely recover natural spawning anadromous fish and lamprey in the long run, with several caveats. Natural conditions may not be attainable in decades or ever, and harvest may not be completely controllable (other nations may continue to allow harvest). Because hatcheries would be completely eliminated, the abundance of anadromous fish (natural and hatchery populations combined) would dramatically decrease in the short run, and some populations might become so small that they cannot recover. Even with maximum actions, it is unlikely that fish populations would approach pre-European immigration levels. However,

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EFFECT AREA: FISH AND WILDLIFE (2): Anadromous Fish More better	
	over the long term, abundance of natural spawning fish should be better than under Status Quo.
Reserve Options (7-12) Extending Commerce Focus	De-emphasize importance of native stocks. Some weak stocks may become extinct. Focus on producing a commercially viable salmon harvest and related industries using least-cost production, primarily hatcheries and fish farming. Mainstem species focus (fall chinook). Total run size might increase even if natural spawning runs decrease. Overall numbers less than under Status Quo.
EFFECT AREA: FISH AND WILDLIFE (2): Resident Fish More better	
Reserve Options	Effect in Comparison to the Status Quo Condition:
Reserve Options (1-6) Extending Natural Focus	Restoration to natural land and water conditions, phase-out of hatcheries, and elimination of most harvest. As more dams are breached, less habitat will be available for resident fish and some populations would be completely lost. There is an inherent tradeoff between preserving anadromous fish and preserving resident fish. Even if the existing hydrosystem is operated entirely for fish and wildlife, resident fish would likely be sacrificed in favor of anadromous fish. Those naturally spawning resident fish that are able to survive in a free-flowing river may increase in the long run as habitat improvements are made. But the total resident fish population (naturally spawning plus hatchery fish) would be dramatically reduced in the short run as hatcheries are eliminated. In the long term, as the river returns toward pre-European settlement conditions, resident fish populations would be much less than under Status Quo.
Reserve Options (7-12) Extending Commerce Focus	De-emphasize importance of native stocks. Some weak stocks may become extinct. Focus on maintaining resident fish harvest for recreation using least-cost production, primarily hatcheries supported by recreation fees. Overall numbers similar to Status Quo.
EFFECT AREA: FISH AND WILDLIFE (3): Wildlife More better	
Reserve Options	Effect in Comparison to the Status Quo Condition:
Reserve Options (1-6) Extending Natural Focus	The goal of extending the Natural Focus Policy Direction is not to increase particular species, but rather to let the river and the land return to natural balance. Some species may benefit from these conditions, while others may not. Passive restoration to natural land conditions and elimination of harvest would likely increase native wildlife populations. However, non-native species may also benefit from an increase in available habitat, and may out-compete native species. Species dependent upon reservoir habitat would decrease as this habitat is eliminated (as storage dams are breached). Over the long term, abundance of wildlife should be much better than under Status Quo.
Reserve Options (7-12) Extending Commerce Focus	De-emphasize importance of native populations. Some weak populations may become extinct. Focus on managing wildlife for fee-based recreation (i.e. hunting, zoos, nature parks) or other purposes (food or clothing production), assuming fees or sales are sufficient to cover the costs of management. Wildlife habitat would become more scarce. Overall numbers less than under Status Quo.

EFFECT AREA: AIR QUALITY More pollution = worse	
Reserve Options	Effect in Comparison to the Status Quo Condition:
Reserve Options (1-6) Extending Natural Focus	Requires a large increase in replacement of hydropower from breaching or drawdown of up to six dams, mainly from new combustion turbines and prolonging use of existing coal facilities over Status Quo. Air pollutants would increase substantially under this Policy Direction. Increased coal generation would dramatically increase PM10, CO, CO2, SOX and NOX emissions. Additional combustion turbine plants would produce NOX and CO2 (but much less than coal because of their greater efficiency) and some PM10. In addition, emissions would increase considerably from the new truck and train traffic needed to replace current barging. Dam deconstruction would result in more airborne particulate matter, and as reservoirs empty, dust would rise from newly exposed land. As new vegetation then covers the land, dust would decrease, so those effects would be temporary.
Reserve Options (7-12) Extending Commerce Focus	Maximizes use of existing hydro system, indefinitely delays the need for replacement resources beyond Status Quo. Regional commercial competitiveness, however, could attract new industry, increasing PM10 and CO2air emissions slightly. More dams could be built if cost-effective. Overall, air emissions are likely less than under Status Quo.

EFFECT AREA: COMMERCE Commercial Interests less = worse	
Reserve Options	Effect in Comparison to the Status Quo Condition:
Reserve Options (1-6) Extending Natural Focus	Hydropower taken off-line, replaced with non-hydro power generation. Commercial activity would dramatically decrease from current levels, as electricity costs go up and. Very large adverse effects compared to Status Quo.
Reserve Options (7-12) Extending Commerce Focus	Law of supply and demand would dictate power mix; however, hydropower generation would likely be increased compared to Status Quo. New dams could be built, if cost-effective. Industry-friendly approach to air- and water-quality standards would likely result in lower costs of compliance. Commercial interests would likely prosper and expand more than under Status Quo.

EFFECT AREA: COMMERCE Recreation (including fishing & hunting) less = worse	
Reserve Options	Effect in Comparison to the Status Quo Condition:
Reserve Options (1-6) Extending Natural Focus	Harvest of both fish and wildlife would be banned. Reservoir recreation (boating, waterskiing) would be greatly diminished as storage dams are breached, and most other recreation would be restricted so that riparian, wetland, and upland areas can return to pre-dam conditions. In the long term, tourism and recreation may increase as natural rivers are restored, but access to these sites would be restricted. Recreation opportunities would be much less than Status Quo.
Reserve Options (7-12) Extending Commerce Focus	Because unrestricted harvest would be allowed, fishing and hunting opportunities would dramatically increase in the short term. An absence of regulation may result in some populations being harvested to extinction. Recreation resources (hiking trails, lakes) would be managed on a fee-for-service basis through user fees and licenses, with prices reflecting the costs of maintaining those resources.

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	For fishing and hunting, the costs for sustaining those populations targeted for harvest (through production hatcheries, habitat enhancement, etc.) would be borne by user groups. Over the long term, recreation would likely be more expensive, and less accessible to users, than under Status Quo.
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EFFECT AREA: COMMERCE: Economic Development less worse	
Reserve Options	Effect in Comparison to the Status Quo Condition:
Reserve Options (1-6) Extending Natural Focus	Economic development would be restricted, and in some cases relocated, as existing habitat is protected and pre-dam habitat is restored. Very large adverse effects compared to Status Quo.
Reserve Options (7-12) Extending Commerce Focus	Economic development would be largely unrestricted, compared to Status Quo, and electricity costs would be less. Therefore, more development would be expected.

EFFECT AREA: TRIBES (1): Fish Harvest less worse	
Reserve Options	Effect in Comparison to the Status Quo Condition:
Reserve Options (1-6) Extending Natural Focus	No harvest. Very large adverse effects compared to Status Quo.
Reserve Options (7-12) Extending Commerce Focus	Lifting of restrictions on harvest would increase tribal harvest opportunities in the short term. In the long term, populations targeted for harvest might be diminished. Costs associated with maintaining harvest opportunities would be borne by tribes as well as other user groups. Like other fish and wildlife resource managers, tribes could generate income by offering harvest opportunities to the public on a fee-for-service basis. Overall, worse than under Status Quo.

EFFECT AREA: TRIBES (2): Health, Spirituality and Tradition	
Reserve Options	Effect in Comparison to the Status Quo Condition:
Reserve Options (1-6) Extending Natural Focus	Relative to Status Quo, tribes would benefit by increasing subsistence and ceremonial harvest and access to hunting and riverside lands once used for cultural, material, and spiritual purposes. ⁸
Reserve Options (7-12) Extending Commerce Focus	Tribal health and spirituality would be adversely affected by loss of traditional fishing practices and locations (defined by treaties), change in fishing techniques and increased competition from non-Indian use of resources and population growth. Worse to much worse than under Status Quo.

⁸ Draft Summary, Corps, 1999a, p. 27.

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EFFECT AREA - SOCIAL (1) Costs and Funding <i>(paying more - worse)</i>	
Reserve Options	Effect in Comparison to the Status Quo Condition:
Reserve Options (1-6) Extending Natural Focus	Removing additional dams and increased habitat acquisition will further deplete the hydro-system and dramatically increase energy costs.
Reserve Options (7-12) Extending Commerce Focus	Maximizing hydro-operations would drop energy costs for the region even further. However, the cost to compensate for the heavy toll of such practices on fish and wildlife would allay much of the cost savings. Overall costs would decrease, but the environmental impact would be substantial.

EFFECT AREA - SOCIAL (1) Cultural/Historical Resources <i>(loss of resources - worse)</i>	
Reserve Options	Effect in Comparison to the Status Quo Condition:
Reserve Options (1-6) Extending Natural Focus	Sites that have been covered and protected by water for years would be exposed. Access to these sites would be restricted, which would result in less vandalism, but also less use and enjoyment of the sites. Overall, the effects would be about the same as Status Quo.
Reserve Options (7-12) Extending Commerce Focus	There would likely be less exposure of inundated cultural sites than under Status Quo, as flow and spill regimes would be abandoned. However, restrictions on economic development would be eased, so it is likely that development would proceed in culturally sensitive areas. Also, funding for cultural resource protection would be cut back or eliminated. The effects on cultural resources would be worse than under Status Quo.

EFFECT AREA - SOCIAL (2) Aesthetics (More natural features - better)	
Reserve Options	Effect in Comparison to the Status Quo Condition:
Reserve Options (1-6) Extending Natural Focus	Riverbeds exposed until re-vegetated. Eventually re-establishing a free-flowing river. Limited access by humans, less economic activity such as logging. More land in wild vegetation, more recovery to natural state. Less developed features. Much better than under Status Quo in the long term; worse than under Status Quo in the short term.
Reserve Options (7-12) Extending Commerce Focus	Increased urbanization and industrialization would typically result in negative visual effects. Adverse effects compared to Status Quo.

*COMMENTS SUBMITTED BY THE
SPOKANE TRIBE OF INDIANS
TO BONNEVILLE POWER ADMINISTRATION*

*RE: FISH AND WILDLIFE IMPLEMENTATION DEIS
APPENDIX I*

Due to the inadequate time frame in which to consider and respond to this Appendix, no comments can be submitted at this time. There has been no opportunity to fully brief the Tribal Council, with appropriate levels of input from technical staff. Also, overly simplistic assumptions underlying the development of alternatives can lead to seriously flawed analysis.

#94

RECEIVED BY BPA PUBLIC INVOLVEMENT LOG#: FWIP-040 RECEIPT DATE: SEP 10 2001
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Kuehn, Ginny -KC-7

From: Alton, Charles - KEC-4
Sent: Monday, September 10, 2001 7:48 AM
To: Kuehn, Ginny -KC-7; Ben Underwood (E-mail); Judy Montgomery; KEY, PHILIP; MORELAND, MOLLY; MUIR, Jean; PIERCE, KATHERINE; Roger Mann
Subject: FW: Comments of Fish & Wildlife Implementation Plan DEIS (DOE/EIS-0312)

FYI

-----Original Message-----

From: David Shaw [mailto:dshaw@erresources.com]
Sent: Friday, September 07, 2001 3:33 PM
To: ccalton@bpa.gov
Cc: Norm Semanko; John Simpson; DBS; Craig Sommers
Subject: Comments of Fish & Wildlife Implementation Plan DEIS (DOE/EIS-0312)

9/10/01

September 7, 2001

Charles Alton, Project Manager – KEC-4
Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208

e-mail: ccalton@bpa.gov

RE: Comments on Fish & Wildlife Implementation Plan Draft Environmental Impact Statement (DOE/EIS-0312)

Dear Mr. Alton:

These comments are submitted on behalf of the Committee of Nine and the Idaho Water Users Association (hereinafter "Idaho water users"). The Committee of Nine is the official advisory committee for Water District 1, the largest water district in the State of Idaho. Water District 1 is responsible for the distribution of water among appropriators within the water district from the natural flow of the Snake River and storage from U.S. Bureau of Reclamation reservoirs on the Snake River above Milner Dam. The Committee of Nine is also a designated rental pool committee that has facilitated the rental of stored water to the Bureau of Reclamation to provide water for flow augmentation pursuant to the 1995 and subsequent Biological Opinions. The Idaho Water Users Association was formed in 1938 and represents about 300 canal companies, irrigation districts, water districts, agri-business and professional organizations, municipal and public water suppliers, and others.

Enclosed is a document titled "The Fallacy of Upper Snake Flow Augmentation – There Is No Need To Drain Idaho for Salmon" prepared by the Idaho water users. Idaho water users support salmon recovery but believe, as set out in the enclosed document, the use of water from the Upper Snake River basin for flow augmentation is not a viable alternative to aid the listed species.

Upper Snake flow augmentation water is taken from that portion of the basin upstream from Hells Canyon that is neither within the area inhabited by the listed salmonids nor is it within that portion of the basin with FCRPS facilities. We believe science does not support continuing, or increasing, the demand for augmentation water from the Upper Snake River basin in the name of recovery of listed species or mitigation for impacts of the FCRPS on the listed species.

We recognize you are relying on the work of others as the basis for development of your Implementation Plan EIS. We ask that you consider the analysis provided in the enclosed document as you prepare your final EIS and take the opportunity to reject continued demands for Upper Snake flow augmentation because of its ineffectiveness as a means to aid the listed species and its high societal cost and divisiveness.

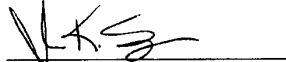
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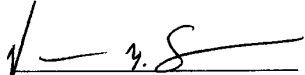
Charles Alton
September 7, 2001
Page 2

We appreciate the opportunity to comment on the DEIS. Please let us know if we can provide you with any additional information to facilitate the preparation of your final EIS.

Respectfully submitted by,



John Simpson
Barker, Rosholt, & Simpson
P.O. Box 2139
Boise, ID 83701-2139
On behalf of the Committee of Nine



Norm Semanko, Executive Director and
General Counsel
Idaho Water Users Association
410 South Orchard, Suite 144
Boise, ID 83705

Enc.

Charles Alton
September 7, 2001
Page 3

cc: w/o Enclosure*

Governor Kempthorne
Idaho Congressional Delegation
Sen. Laird Noh
Rep. Cameron Wheeler
Sen. Pro-Tem Robert L. Geddes
Speaker Bruce Newcomb
Rep. Dell Raybould
Northwest Power Planning Council Members:
Jim Kempton
Judi Danielson
Leo A. Giacometto
Eric J. Bloch
Stan Grace
John Brogoitti
Frank L. Cassidy, Jr.
Tom Karier
Donna Darm
John Palensky
Brian Brown
James Caswell
Rodney W. Sando
Jim Yost
Karl Dreher
Virgil Moore
Dan Daley
J. William McDonald
Witt Anderson
Clive Strong
Bob Lohn
Roger Fuhrman
Chris Randolph
Richard Rigby
Bruce Lovelin
Tom Donnelly
Doug P. Arndt

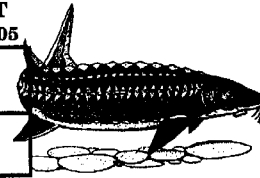
* Enclosure was previously distributed with Idaho water users June 15, 2001 recommendations for the Northwest Power Planning Council's Mainstem Plan.



KOOTENAI TRIBE OF IDAHO

FISH AND WILDLIFE DEPARTMENT
P.O. Box 1269 Bonners Ferry, Idaho 83805
(208) 267-3621 (208) 267-1181

RECEIVED BY: [Signature]
PUBLIC INVOLVEMENT
LOG#: FWIP-041
RECEIPT DATE: SEP 13 2001



Mr. Charles Alton
Project Manager – KEC-4
Bonneville Power Administration
P.O. Box 3621
Portland, OR 97208

RE: Fish & Wildlife Implementation Plan Draft Environmental Impact Statement

Dear Mr. Alton:

Thank you for the opportunity to comment on the *Fish & Wildlife Implementation Plan Draft Environmental Impact Statement*. The Tribe recognizes the enormous task placed upon the federal agencies in managing the Federal Columbia River Power System and restoring the Columbia River Basin.

The Kootenai Tribe of Idaho appreciates its partnership with the Tribes, federal agencies and state governments and citizens working for restoration of the Basin. The Tribe unfortunately does not have sufficient resources to enable it to fully analyze the Plan's impacts on its rights. Thus, the Tribal Council requests and invites the BPA to schedule a government-to-government meeting pursuant to its trust responsibility and duty to consult on matters affecting the Tribe. Specifically, the Tribal Council requests the BPA to explain the Plan and how it will affect the Tribe and its members.

We look forward to meeting with BPA's policy and technical level staff as part of ongoing government-to-government consultation. Please contact Sue Ireland to arrange a meeting time and place.

Sincerely yours,

Chairperson Velma Bahe
Kootenai Tribe of Idaho

cc: Mr. Steve Wright, BPA Administrator (sjwright@bpa.gov)
Ms. Alex Smith, BPA VP for F&W (absmith@bpa.gov)
Mr. John Smith, BPA Tribal Liaison (jasmith@bpa.gov)
Mr. Bob Shank, BPA Tribal Liaison (rlshank@bpa.gov)

#1



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

PUBLIC INVOLVEMENT LOG#: FWIP-042
RECEIPT DATE: SEP 13 2001

SEP -7 2001

00-009-BPA

Reply To
Attn Of: ECO-088

Charles Alton
Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208

Dear Mr. Alton:

We have reviewed the draft Environmental Impact Statement (EIS) for the proposed *Bonneville Power Administration (BPA) Fish & Wildlife Implementation Plan* (CEQ #010246) in accordance with our responsibilities under the National Environmental Policy Act (NEPA) and §309 of the Clean Air Act. The draft EIS analyzes policy directions in order to expeditiously address declining populations of fish and wildlife species in the Pacific Northwest.

The draft EIS is an informative document which describes past activities affecting fish and wildlife populations in the Pacific Northwest and possible policy outcomes to mitigate for and recover these populations. EPA applauds the innovative approach that BPA used to 1) describe cumulative impacts and 2) identify alternative policy directions as culminations of decisions made by numerous key players in the Columbia River Basin.

The draft EIS, however, states that BPA will not select one of the policy directions presented in the EIS for fish and wildlife mitigation and recovery because this decision is largely outside of its jurisdiction. EPA believes that the information in this document should not be presented in an EIS because BPA does not intend to select a policy direction presented as an alternative. NEPA at 40 CFR 1502.1 states that the purpose of an EIS is more than a disclosure document. An EIS shall be used by Federal officials in conjunction with other relevant material to plan actions and make decisions [emphasis added]. Because the EIS states that it is not a vehicle for decision-making, EPA recommends that BPA consider presenting this information in a white paper. In addition, the non-decisional nature of the document forces us to conclude that the Bureau of Reclamation and other agencies with jurisdiction in the Columbia River Basin should not tier subbasin fish and wildlife recovery plans to this EIS in order to comply with the 2000 Biological Opinion for the Federal Columbia River Power System.

#1

#2

Some broad policy directions presented as alternatives in the EIS might be inconsistent with the Clean Water Act, the Endangered Species Act, or other environmental laws and policies. The EIS, to comply with 40 CFR 1502.2(d), should state how [emphasis added] alternatives considered will or will not achieve the requirements of environmental laws and policies. Moreover, EPA will raise environmental objections to any final EIS that identifies a preferred alternative that is inconsistent with environmental laws

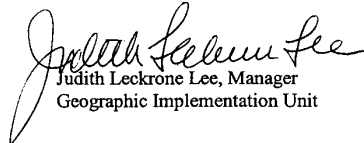
#3

EPA Detailed Comments on the Bonneville Power Administration (BPA)
Fish & Wildlife Implementation Plan Draft EIS

Finally, EPA is also concerned that the proposed BPA Plan would largely duplicate the Northwest Power Planning Council's Fish and Wildlife Plan. Having competing plans for fish and wildlife conservation may contribute to the problem that the proposed BPA Plan is trying to address, namely no agreed-upon regional plan for coordinating mitigation and recovery efforts resulting in significant duplication and delay. EPA favors the broader ecosystem protection mandate associated with the Northwest Power Planning Council's Fish and Wildlife Plan (versus that found with the proposed BPA Plan) because it includes unlisted as well as listed fish and wildlife species. The EIS should therefore clearly state why the proposed BPA Plan is necessary when the Northwest Power Planning Council's Fish and Wildlife Plan is already up and running.

We have rated this draft EIS, LO (Lack of Objections), because no action will result from this document, thereby precluding us from having environmental concerns or objections. Our rating and a summary of our comments will be published in the *Federal Register*. We have enclosed a copy of the rating system that we used to conduct our review as well as our detailed comment letter which contains suggestions for improving the document. Thank you for the opportunity to review this draft EIS. If you would like to discuss these issues, please contact Chris Gebhardt at (206) 553-0253.

Sincerely,


Judith Leckrone Lee, Manager
Geographic Implementation Unit

Enclosures

S-ii: The draft EIS discusses BPA's responsibility regarding fish and wildlife under the Endangered Species Act (ESA). The EIS should also discuss BPA's Clean Water Act (CWA) responsibilities which indirectly support fish by protecting beneficial uses such as cold water biota. The EIS should list BPA's responsibilities under CWA. #5

S-ii: The ESA defines conserving listed species as bringing the species back to the point where measures described in the ESA are no longer necessary. We are, therefore, pleased that the next page uses the phrase "mitigation and recovery" when describing BPA's responsibility for listed fish and wildlife.

S-iii: The title of the EIS is vague. What do you mean by implementation? The EIS should be renamed "Fish and Wildlife Mitigation and Recovery Plan" to more accurately reflect the plan's purpose and need. #6

S-iii: The draft EIS states that hydrosystem operation requirements for salmon recovery efforts have reduced power generation in the region by about 1,000 megawatts. Is this statement true today? We are aware that fish protection measures have recently been scaled back in response to the March 14, 2001, Federal Energy Regulatory Commission order entitled *Removing Obstacles to Increased Electric Generation and Natural Gas Supply in the Western United States* and that the amount of power generation given up to protect fish might be less than it has been historically. #7

S-iv: The draft EIS states that BPA is preparing the document because (1) many species of fish and wildlife are in serious condition now and (2) BPA wants to be ready to respond promptly when a regional Policy Direction(s) is ripe for decision. We agree with the pressing need to address imperiled fish and wildlife species, but question how accurate predictions about future mitigation and recovery can be prior to developing recovery plans. The EIS should explain why it is analyzing and planning mitigation and recovery options in the absence of recovery plans. #8

S-v: The draft EIS describes the functions of the EIS: 1) evaluate the range of potential policy directions, 2) identify a specific path, and 3) determine environmental consequences. We recommend that the EIS use the more conventional framework described in NEPA regulations at 40 CFR 1502.10. Using this framework, the functions of the EIS can be described as follows: #9

- 1) Describe the need for a coherent, unified policy for fish and wildlife mitigation and recovery.
- 2) List alternative policy directions for fish and wildlife mitigation and recovery.
- 3) Describe the current condition of fish and wildlife species.
- 4) Predict the effects of alternative policy directions on fish and wildlife species.

S-vi and page 4: The draft EIS states that BPA sells surplus power to California and the southwestern U.S. We believe limiting exports of power to regions outside the northwest would help meet the goals described on page S-vi of the draft EIS. Limiting exports of power would help avoid or minimize impacts to fish and wildlife species from dam operations and the #10

construction and operation of more extensive electrical grid systems while keeping affordable power available for customers inside the Pacific Northwest.

#10

S-xii: The draft EIS describes the Council's Multi-Species Framework Project as a more balanced, comprehensive approach. The EIS should define "balanced" in this context. It should also identify what the Project is being compared to. In other words, the Council's Multi-Species Framework Project is more balanced and comprehensive approach than what?

#11

S-xii: The draft EIS should quantify the increase in in-river juvenile salmonid survival and increases in resident fish populations commensurate with the stated and quantified monetary amounts spent on fish and wildlife conservation and the percentage breakdown of money spent on anadromous fish.

#12

S-xv: The draft EIS states that BPA will not identify a preferred alternative until it prepares the final EIS. This is consistent with NEPA at 40 CFR 1502.14, but seems in conflict with a stated function of the EIS on page S-v which is to identify a specific path that will most likely be taken.

#13

S-xvii: We recommend that the EIS list dam removal as a mitigation measure for hydro generation for the status quo alternative since it might be necessary to meet water quality standards for total dissolved gas and temperature. We are pleased that the potential to remove dams is identified as an element of other action alternatives.

#14

S-xvii: Mitigation for terrestrial habitat may now also include finding lands to replace habitat lost to recent transmission line and thermal power plant construction.

#15

Tables S-2 and S-3: The EIS should identify the criteria and information that the data and Tables S-2 and S-3 are based upon.

#16

Page 6: The draft EIS states that the Regional Act (creating the Northwest Power Planning Council) extended BPA's responsibilities to include development of energy conservation resources and enhancement of Northwest fish and wildlife affected by dams. The EIS should incorporate the energy conservation component into this EIS if possible, perhaps by describing how energy conservation reduces the need to produce power or provides more flexibility in operating the hydro system which in turn, enhances fish and wildlife mitigation and recovery.

#17

Page 8: We are concerned about a purpose of the draft EIS stated on page 8 of adopting a flexible fish and wildlife strategy. We are concerned that this wording might allow a curtailment of fish and wildlife protection. EPA believes that the power production should accommodate fish and wildlife protection because power can be imported from other sources more easily than transplanting fish, wildlife, and their habitats. Moreover, the protection and recovery of listed species and their habitats is ensured under ESA.

#18

Figure 1-4: We recommend that the EIS date documents incorporated by reference to indicate how current is the information found within them.

#19

RECEIVED BY BPA PUBLIC INVOLVEMENT LOG#: FWIP-043
RECEIPT DATE: SEP 18 2001

September 14, 2001

To: Bonneville Power Administration
Re: Draft Environmental Impact Statement Comments

The Shoshone-Paiute Tribes wish to make the following comments on the Fish and Wildlife Implementation Plan Draft Environmental Impact Statement (DOE/EIS-0312 May 2001) and have these comments become part of the record.

Page 36...

The effects of dam construction discuss the Hells Canyon Complex, Chief Joseph, and Grand Coulee. However, there is no mention of the Owyhee Dam which completely blocked anadromous runs up the Owyhee River system. The Owyhee Dam is a Federal project (BOR), which should be mentioned and mitigated for, especially due to the hydropower activity on this project (DEIS, Appendix E regional energy generation resources, page 15). There needs to be discussion of private and federal agencies that are doing irreparable damage to the system (i.e. Idaho Power Company, Federal Energy Regulatory Commission). These agencies need to be held accountable for their actions that have detrimental impacts on the system.

} #1

} #2

Page 87...

“Tribal Conditions” section discusses hunting and fishing rights of the Tribes in the region. To our knowledge the Shoshone-Paiute Tribes do not have fishing and hunting rights, nor have we been compensated for those lost rights.

} #3

Page 88...

The statement...“Some upriver Tribes have less of an interest in salmon than they once did....”. This statement is false. The Shoshone-Paiute Tribes have a great interest in salmon and steelhead. Anadromous fish are an important part of our culture, which has been taken away from us.

} #4

Page 202...

“Cultural Resources” section

Cultural resources are more than specific places. Cultural resources to the Shoshone-Paiute Tribes includes land, water, air, birds, fish, everything that mother earth has produced and provided for our Tribes are Culturally important to the Shoshone-Paiute Tribes. Also, many sacred sites of ancestor’s burial locations, ceremony locations, and hunting and fishing areas are also very important to our Tribes.

} #5

Draft Appendix F

What is the intention of this article in the Draft EIS? The article discusses how there needs to be a natural cycle for salmon and steelhead, however, there is no such thing as “Natural” anymore. Man has altered the system to such an extent that people don’t even know what is natural or native anymore. Maybe there needs to be discussion on how to put things back to natural or how to work with what the environment is currently. We are not sure of the reasoning behind this article.

} #6

Appendix G

The Shoshone-Paiute Tribes would like to see a list of the species produced along with list of hatcheries. Also, the hatchery list is incomplete, because it does not include private and non-Federal hatcheries. It lists hatcheries that are no longer operating and fails to mention hatcheries in the planning and construction phases.

} #7
#8

What is meant by BPA Funds major or minor? How much is major funds from BPA? The following are comments regarding the ESA Implementation Plan for the Columbia River Power System.

} #9

In closing we have the following general comments to make on the DEIS.

The most important comment the Shoshone-Paiute Tribes can make is this document seems to end at the Hells Canyon Complex and does not include the Owyhee Dam.

#1
(cont.)

This document, like many others completely excludes much of the historic spawning areas for native anadromous fish. The document talks about wanting water from the Upper Snake River Basin however there is no talk of compensation, restoration of historic fish runs, dam modifications, consultation, or collaboration with the entities in the Upper Snake to help the dwindling fish runs downstream.

#10
#11

According to BPA document DOE/EIS-0312 (May 2001) the Owyhee Dam has hydropower capacity as of the late 1980's. This fact should be mentioned as well as the fact that this dam completely blocked the anadromous fish runs up the Owyhee River.

The Shoshone-Paiute Tribes also are very concerned about consultation on both this document and the Draft EIS. The Federal Government has a trust responsibility to our Tribes to consult with our elected officials concerning any actions that may take place under these two documents. As of September 2001 this has not taken place with our Tribes.

#12

The Tribes would also like to see highest priority given to areas above "blockages" as was the original intent in the 1994 Power Act amendment. These are the areas that have suffered the greatest losses.

#13

The Shoshone-Paiute Tribes want to thank Bonneville Power Administration for the opportunity to provide comments on this document. We are appreciative of our relationship with BPA and hope we can continue this partnership to help protect fish and wildlife resources in the Columbia River Basin and on the Duck Valley Indian Reservation.

Sincerely

Marvin Cota
Chairman Shoshone-Paiute Tribes
Duck Valley Indian Reservation

RECEIVED BY BPA PUBLIC INVOLVEMENT LOG#: FWIP-044
RECEIPT DATE: SEP 18 2001

OFFICE OF SPECIES CONSERVATION

DIRK KEMPTHORNE
Governor



JAMES L. CASWELL
Administrator

300 North 6th Street
P.O. Box 83720
BOISE, IDAHO 83720-0195
(208) 334-2189
(208) 334-2172 FAX

September 7, 2001

BPA Administrator
Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208-3621

Dear Administrator:

Enclosed is the State of Idaho formal comment to the Bonneville Power Administration (BPA) Fish and Wildlife Implementation Plan Draft Environmental Impact Statement (DEIS).

These comments have been coordinated with all appropriate State of Idaho agencies through my Office of Species Conservation. We appreciate this opportunity to provide comments on the DEIS.

Sincerely,


DIRK KEMPTHORNE
Governor

September 7, 2001

BPA Administrator
Bonneville Power Administration
P.O. Box 3621
Portland, OR 97208-3621

Dear Administrator:

This letter is the State of Idaho's formal comment on the Bonneville Power Administration (BPA) Fish and Wildlife Implementation Plan Draft Environmental Impact Statement (DEIS). The DEIS was released June 12, 2001, with formal comment due September 7, 2001, and this comment is therefore timely filed. Idaho appreciates the opportunity to comment and the willingness on behalf of BPA to consider State concerns.

The Bonneville Power Administration (BPA) has undertaken a challenging task to attempt to characterize and contrast current and alternative future Policy Directions to guide its implementation and funding of fish and wildlife mitigation and recovery efforts in the DEIS. Key to this task is first classifying alternatives developed by existing policy initiatives within the region into consistent themes, termed the "Policy Directions." The theme of implementing recovery actions broadly and comprehensively is common among many existing Columbia Basin recovery reviews and plans. However, many of the plans differ in their emphasis on the approach to recovery deemed most important. This underlies the challenge of the DEIS.

The DEIS has three main functions: 1) to evaluate the range of potential Policy Directions, 2) to identify what specific path the region most likely will take as a unified planning approach or as a series of independent actions for fish and wildlife mitigation and recovery efforts, and 3) to determine the environmental consequences of BPA's implementation and funding of actions that could emerge from that path (termed Policy Direction). The document encompasses funding and implementation decisions by BPA for several regional initiatives including the Provincial Review (an element of the Northwest Power Planning Council's Fish and Wildlife Program), the Wildlife Mitigation

Program, the Federal Columbia River Power System (FCRPS) Biological Opinion and the Federal Caucus "All-H" Recovery Strategy. Because of the importance of these mitigation and recovery programs to the Columbia Region and its fish and wildlife resources, it is important that the DEIS be accurate and objective. The following comments by the State of Idaho, in coordination with the Idaho Department of Fish and Game (IDFG), address areas where we believe the DEIS should be improved to provide a more accurate assessment of potential effectiveness of alternative policy options in implementation and of the funding of fish and wildlife mitigation and recovery efforts.

GENERAL COMMENTS

Idaho appreciates the somewhat precarious position in which BPA finds itself with respect to policy direction for BPA's participation in state, federal, regional and tribal fish and wildlife recovery efforts. The "Recommendations of the Governors of Idaho, Montana, Oregon and Washington for the Protection and Restoration of Fish in the Columbia River Basin," (or "Four Governors' Agreement") is an unprecedented regional effort intended to provide BPA, as well as others possessing recovery responsibilities, with consistent direction from affected Northwest States. The Four Governors' Agreement (2000) states: "[T]he regional approach must include a clear goal so that the region can understand what constitutes success. Accordingly, the goal we suggest is protection and restoration of salmonids and other aquatic species to sustainable and harvestable levels meeting the requirements of the Endangered Species Act, the Clean Water Act, the Northwest Power Act and tribal rights under treaties and executive orders while taking into account the need to preserve a strong economy in the Pacific Northwest." The Four Governors' Agreement is hereby incorporated in the State's comment by reference.

] #1

At the outset, Idaho takes issue with the use of the term "status quo" as it connotes that nothing has been done to promote recovery in the FCRPS or the other H's. There have been improvements in all human mortality sectors through the last two decades, but they have not resulted in recovered populations. Perhaps "status quo" is more appropriate only relative to the 1995 and the 1998 FCRPS Biological Opinion.

] #2

Idaho can sympathize with BPA's cry for help inasmuch as BPA is criticized for the perceived lack of a clear policy "theme." There is tremendous diversity among the fish and wildlife populations in the Columbia River basin, including their current status and degree of impact from the FCRPS. Therefore, a one-size-fits all approach may be ill advised. Idaho supports the subbasin planning approach to identify priorities on a smaller and more informed scale. The Fish and Wildlife Implementation Plan should account for existing State fish and wildlife agency laws and policies. The IDFG policy direction for anadromous fish and resident fish and wildlife affected by the FCRPS is spelled out in the IDFG Report to the Director, *Idaho's Anadromous Fish Stocks: Their Status and Recovery Options* (IDFG 1998); in fisheries management plans (IDFG 1992, 2001a); and in subbasin summaries. IDFG's overall fisheries goal is to restore and maintain wild native populations and habitats of resident and anadromous fish to preserve genetic

] #3

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] #5

integrity, ensure species and population viability, and provide sport fishing and aesthetic benefits (draft Salmon Subbasin Summary, 2001). The anadromous fish goal is to recover wild Snake River salmon and steelhead populations and restore productive salmon and steelhead fisheries (IDFG 1998).

#5

The State is keenly aware of the National Environmental Policy Act concerns which underlie this DEIS. BPA's fish and wildlife responsibilities (ES-ii) include those under the Pacific Northwest Electric Power Planning and Conservation Act of 1980 ("Regional Act") and the Endangered Species Act (ESA), as well as the Clean Water Act and federal tribal trust responsibilities. The DEIS summary recognizes that alternatives must meet certain laws to be viable (ES-xv). Fish and wildlife protection, mitigation and enhancement responsibilities are broader under the Regional Act than under ESA (IDFG 2001).

However, given the current status of the law, choosing amongst and implementing the varying policy themes as they are described in the DEIS is prohibited. BPA cannot adopt any one of the five policy directions in its pure form. As a result, BPA is necessarily forced to mix and match elements of each of the different policy directions, which is precisely what has been done in the past under the "status quo" alternative (also referred to as the "no action" alternative). Hence, the State does not anticipate a major policy shift resulting from finalization of the DEIS.

#6

A major criticism of the DEIS is that alternative Policy Directions were artificially constructed by grouping actions according to "themes" to define directions (ES-xvi), rather than by first defining goals/objectives and then selecting actions to achieve them. The comparisons of relative effectiveness of Policy Directions are also questionable or premature, because the actions and intensity of the actions are generally not established at this time (ES-xvi). Many of the actions are being formulated through the Provincial Review and the federal ESA implementation plan for the FCRPS. Until the actions and their intensity are better defined, it is unlikely that decision makers can "readily compare effects and likely outcomes/consequences" of the alternative Policy Directions (ES-xxii).

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#8

The DEIS is only partially successful in grouping actions according to themes as Policy Directions, and we note important inconsistencies and shortcomings in the comparisons. The Policy Directions are Natural Focus, Weak Stock Focus, Sustainable Use Focus, Status Quo, Strong Stock Focus and Commerce Focus (ES-xvi). Actions in the hydrosystem, harvest, habitat and hatchery areas are not necessarily consistent with a theme's title, or the general effects projected. For example, actions grouped under the Weak Stock Focus include a four dam breach, (temporary) harvest restrictions to protect weak stocks and decreased hatchery activities.

#9

Some purported "trade-offs" among alternatives are counter-intuitive because the tables fail to show projected response of natural and hatchery anadromous stocks or resident native and non-native fish separately. For example, Table ES-2 shows the effects on anadromous fish would be the same as Status Quo for Natural Focus and Commerce Focus. A footnote then explains there are sharp differences in numbers of hatchery and

#10

naturally produced anadromous fish, and native and non-native resident fish. The comparison tables contain seven categories for water habitat (including reservoir habitat) and only three for fish and wildlife combined. It would be appropriate to include more detail about fish and wildlife trade-offs among the alternatives given this is a Fish and Wildlife Implementation Plan.

#10

Finally, two general comments concerning the DEIS's data analysis are warranted. First, Idaho noted that several figures were either incomplete or inaccurate. Figures 2.6, 2.10, 2.13 and 2.14 do not show the correct information in relation to Idaho. They misrepresent impacts and status related to fish and wildlife, threatened and endangered species, hydro project impacts and development, transmission lines and water quality. These figures and the affiliated text should be corrected to more accurately portray these subjects in Idaho. These inaccuracies may be indicative of other oversights in the document. We suggest a thorough review of Idaho-related information in the DEIS to ensure it is accurate and representative. Second, Idaho believes that the Plan for Analyzing and Testing Hypotheses (PATH) is one example of a useful process for testing hypotheses. Idaho anticipates that, as more information is gathered and processed, technical analysis will be updated to reflect new knowledge and information.

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SPECIFIC COMMENTS

Spill. Idaho has expressed concern about the mass spill program in the past. This concern remains about spill as a long-term primary recovery action. The Four Governors' Agreement recognized the importance of spill within the context of improving the riverine character of the mainstem Columbia and Snake Rivers to enhance fish survival (Four Governors' Agreement 2000 p. 8). However, the use of spill should be improved, experiments testing spill benefits should be expanded and the effects to juvenile fish survival should be monitored and evaluated. Spill should also be considered within the context of proposed hydro-dam facilities, such as raised spillway weirs.

#14

Resident Fish. BPA's analysis of resident fish problems is inadequate. The problem of introduction of non-native predators and competitors with salmon has not been adequately described. Programs need to be developed to institute measures to reduce or eliminate non-native fish that compete or prey upon salmon. In this regard, carp are not predators or competitors. Reservoir fisheries management, moreover, has not been shown to be a significant problem with survival; reservoir environment is the problem.

#15

Hydro - Dam Facilities. There is little mention of the new surface bypass technology, behavioral guidance structures or raised spillway weirs. Such potential modifications should be included in any analysis.

#16

Hydro Operations. There appears to be a conflict between Libby Dam operations for the Kootenai River Population of endangered white sturgeon and Libby operations for salmon flow augmentation. IDFG research indicates that flow augmentation for salmon may be producing conditions counterproductive to early (year 1 and 2) rearing for white

#17

sturgeon. The negligible benefits of flow augmentation from Libby for anadromous fish are not justified given the negative effect on juvenile white sturgeon.

#17

Flow Augmentation. There is controversy regarding flow augmentation as a strategy to moderate the effect of the FCRPS on fish survival. Idaho reiterates the six elements identified in the Four Governors' Agreement as needed to reduce the controversy in the future. Prior to the FCRPS completion and even after development of the upper Snake River storage projects, Snake River populations were productive under a range of natural runoff and environmental conditions (State of Idaho 2000, IDFG 2001). Idaho has consistently pointed out that flow augmentation cannot recreate more normative river conditions and that incremental flow augmentation is insufficient for recovery. Over the long-term, the region's goal should be to phase out the flow objective approach at dams for spring and summer migrants, as long-term measures are developed to address water velocity and temperature concerns. There is relative survival and spawner-recruit evidence indicating that incremental benefits from flow augmentation and spill can provide a buffer to help moderate risk evident at low flows during the smolt migration (IDFG 2001b). The State would like to take this opportunity to advocate that further evaluation and study be done to document what the benefits of incremental flow augmentation may be before adoption.

#18

#19

Risk Assessment. The DEIS summary (ES-i) notes that "[t]he region has sought to stem and even reverse the species decline [of fish and wildlife species listed under the Endangered Species Act]. Unfortunately, after a decade of good intentions, there has been less progress than is necessary to reverse species declines. Here are the most important reasons:

- (1) Different groups often have different value judgments about priorities, leading to different (and often conflicting) ideas about what recovery and mitigation should be.
- (2) There is no clear scientific answer to the problem.
- (3) Conflicting directives and jurisdictions of regional authorities have meant that funds dedicated to the fish and wildlife recovery efforts have often been used less efficiently and effectively than they otherwise could have been.

#20

The summary conclusion indicates that status quo actions have been inadequate to recover listed species. Reasons (1) and (3) are undoubtedly true, especially considering that many actions have been taken to mitigate, rather than change, population limiting factors. However, the above summary conclusion also imposes an unfair burden on science to provide an "answer" to the policy direction questions posed later in the DEIS. A more accurate statement than Reason (2) is found on page 107 of the DEIS, "In fish and wildlife mitigation and recovery efforts, where there are still many biological and political unknowns, it is better to be generally correct than precisely wrong." There is scientific agreement through a decision analysis approach that some options are more

robust and likely to lead to recovery with lower risk than other options (Marmorek et al. 1998; NMFS 2000; State of Idaho 2000; Budy 2001).

#20

Science has and does use objective information and a basis to test hypotheses and provide probabilities of outcome but does not define risk policy. Actions necessary for fish and wildlife protection in the basin are related less to lack of scientific conclusion (or robustness) and more to conflicting risk policies. Scientific uncertainties include both the relative effectiveness of the options, given alternative hypotheses, and which options are more likely to succeed. The policy questions are thus related to how much potential risk decision makers are willing to take, recognizing that a decision to delay implementing lower risk actions is actually a decision to continue the current risk to the fish and wildlife resources. The DEIS does not address risk policy to meet BPA's obligations to fish and wildlife affected by the FCRPS. Identifying a risk policy for implementation and funding would strengthen BPA's decision-making process to better align implementation with the broad policy direction and allows decision-makers to make a conscience effort to incorporate risk to fish and wildlife into funding policies and decisions. The issue is not whether decision-makers should specifically choose a risk prone approach; the issue is that they should be objectively aware of the associated potential risk of any of the Policy Directions and use a scientific approach to determine the effects of an informed decision. This requires BPA use an adaptive management approach in funding its fish and wildlife program. We urge BPA to include this premise as an alternative within the DEIS and within the governance sections.

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Associated Environmental Effects, Chapter 5, 5.1.2 p. 152. The example of breaching a dam (p. 152) is intended to show that a given implementation action may have an effect of limiting the potential for other actions, but is misleading if applied to removal of mainstem lower Snake dams, which is currently the primary dam removal option being considered (NMFS 2000). The *intended* option is to support improved habitat for fish. The example states "the *associated* outcome, however, is that the dam can no longer be used to control operations of the river: a hydro system option has been eliminated." This statement is misleading if meant to apply to mainstem lower Snake projects, which have little active storage and are not used to alter river flow volumes. If BPA is not referring to mainstem dams (which will be the common perception), it should clearly state this in the final document or replace this example with one reflecting a more realistic potential trade-off.

#23

Other Comments, Chapter 2, p. 56. The DEIS discusses costs related to the fish and wildlife program. These costs, detailed on pages 56-60, are not provided within the context of the income or proportion of total revenue and obligations of BPA. Therefore, we believe this information and discussion of the costs of the fish and wildlife program and its relatively recent increases in expenses due to direct costs and system operation costs are without merit. We recommend this section be revised with the appropriate information related to BPA revenues, income, and budget coinciding with Fish and Wildlife expenses and costs.

#24

Chapter 2, Discussion, p. 70. The DEIS specifies that the Idaho Office of Species Conservation (OSC) was created to work on subbasin planning and coordinate efforts on natural resource issues. The legislation establishing the Office of Species Conservation states the office shall oversee implementation of federal recovery plans, coordinate state departments and divisions related to endangered, threatened, and petitioned species, provide input and comment related to endangered species and provide an ombudsman for the citizens of Idaho harmed or hindered by regulations related to ESA. These responsibilities should be reflected in the DEIS.

#25

The OSC functions as a coordinating agency for subbasin planning in Idaho. In Idaho, action agencies include state agencies with implementation authorities, Tribes and local governments.

The IDFG also has a large and active wildlife mitigation program funded through BPA and approved by recommendation of the Northwest Power Planning Council. The State supports the Northwest Power Planning Council's Columbia River Basin Fish and Wildlife Program. Documents outlining wildlife impacts and the goals and objectives of the Idaho mitigation program include: The Idaho Department of Fish and Game Policy Plan and Strategic Plan. Please make changes to the DEIS to reflect this and the importance of the federal hydro wildlife mitigation program.

#26

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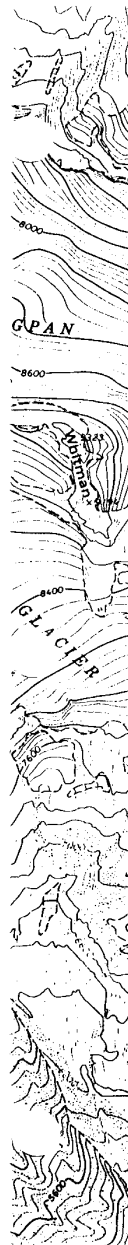
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RECEIPT DATE: AUG 13 2001



*Founded in 1906
to Explore, Study,
Preserve, and Enjoy
the Natural Beauty
of the Outdoors*

August 8, 2001

Mr. Charles Alton
Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208

Re: Fish and Wildlife Implementation Plan-DEIS

Dear Mr. Alton:

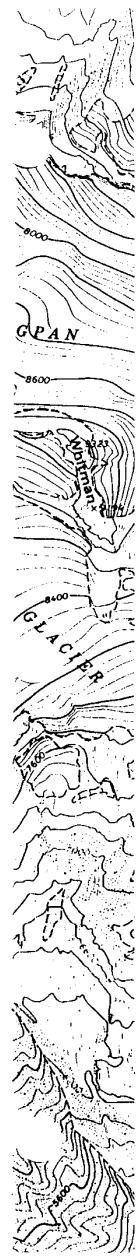
The Mountaineers is one of the oldest and one of the largest conservation and recreation organizations in the Northwest, with about 15,000 members. We have been involved in issues involving wildlife, fisheries, and power generation for many years and have previously submitted comments on BPA programs and fish and wildlife programs. We appreciate the opportunity to comment on the Proposed Fish and Wildlife Implementation Plan.

The DEIS points out that there are many key regional issues that are involved in the implementation plan, including habitat, fisheries resources, wildlife, hydro projects, transportation, navigation, agriculture, land use planning, hatcheries, and commercial fisheries. Any plan that will be adapted will cause pain and curtailment for some of those resources. However, it is clear that the status quo policy direction is in violation of numerous state and federal laws and does not comply with the wishes of many segments of the public. #1

The Natural Focus policy direction emphasizes protection of areas considered pristine, especially those areas untouched by previous human development. High value is placed on ecosystems that function without human interference, whatever species they maintain.

For ecosystems already altered by human activities, efforts would focus on minimizing further degradation, and restoration would emphasize regeneration through natural processes. This policy differs from the current implementation action in that it restores habitat, emphasizes passive techniques, decreases harvest, discontinues hatcheries, removes six dams on the Columbia River, decreases some commercial activity, and allows tribal harvest of healthy fish and wildlife populations. Protection of pristine ecosystems is the most effective way to protect fisheries and wildlife. It is much cheaper and more effective to maintain existing functioning ecosystems than to restore degraded ecosystems. #2

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The Mountaineers supports many aspects of this policy direction. However, there are other programs from other policy directions which we also support. The Weak Stock policy direction would decrease commercial activity that affect weak stocks and use selected techniques for harvesting by tribes to assist weak stocks. It would also decrease commercial fisheries harvest. We support those proposals.

#3

The Strong Stock policy direction asserts that there are inadequate resources to protect all the fisheries species, and therefore activities and funds should be concentrated on maintaining viable stocks and ecosystems to avoid broader collapse of fish and wildlife populations. We disagree with many implementation aspects of this program, such as decreasing restrictions on hydro operations, increasing commercial activity, and increasing harvesting while maintaining strong stocks. All of those implementation actions are ones that we oppose. However, we believe that the policy is correct in emphasizing protection first of the ecosystems and fisheries stocks which are in the best condition and can be preserved and protected with the least amount of effort and funds. In other words, assign limited resources first to those runs that have the best chance of maintenance and recovery and the ecosystems which are best able to sustain those runs. After those ecosystems and runs are maintained, then move down the chain to other runs and other ecosystems which have more problems and will take more effort and more funding to restore. This means, for example, that in the state of Washington priority would be given to protecting the Skagit, Stillaguamish, and the Skykomish rivers, their watersheds, and the healthy fisheries runs in those rivers, together with certain rivers in the Olympic Peninsula which flow from Olympic National Park and likewise have healthy fish runs. Spending large amounts of resources to protect rivers in urban areas such as the City of Seattle is much less cost effective in protecting habitat and fisheries and wildlife resources.

#4

#5

Table ES2 points out that the Natural Focus Alternative is by far the best alternative in terms of protecting and improving the natural environment. However, it would have adverse impacts on commerce and federal and state costs and funding. For these reasons it is likely that the policy cannot be fully implemented. However, we believe that this is the overall direction to go in terms of BPA policy.

#6

The DEIS points out at page 55 the many problems associated with existing water policy. Most waters in the Pacific Northwest are over appropriated. Most waters fail to meet total maximum daily load levels for water quality established by the EPA.

#7

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Most rivers and streams have inadequate instream flows to protect fisheries runs. Washington includes in-stream flows for fish and wildlife as a statutory beneficial use. Other states such as Idaho do not. The doctrine of prior appropriation of water rights, which has been in force for more than 100 years, creates massive misallocation of water resources and leaves those with the earliest recognized water rights largely in control of how that water will be used. (55) As a result, there is massive waste and inefficient use of water resources by some users, and inadequate resources for lower level water users and for in-stream flows.

#7

Nine federal agencies have joined in the Federal Caucus and have adopted a series of goals for a basin wide strategy. These goals include:

- Conserve species.
- Conserve ecosystems.
- Balance the needs of other species.
- Protect tribal rights.
- Minimize adverse affect on humans.

We support these goals but recognize that there are conflicts among these various goals. One of the biological objectives of the Federal Caucus is to halt declining population trends within 10 years. (64) To reach this objective will require substantial change from existing policies and changes in commercial fishing, hatcheries production, protection of natural ecosystems, improvement of in-stream flows, and improvement of water quality, especially protection from non point pollution. In fact, National Marine Fisheries Service has concluded that proposed federal operations are likely to jeopardize the continued existence of 8 of the 12 endangered species units (the Jeopardy Assessment).

#8

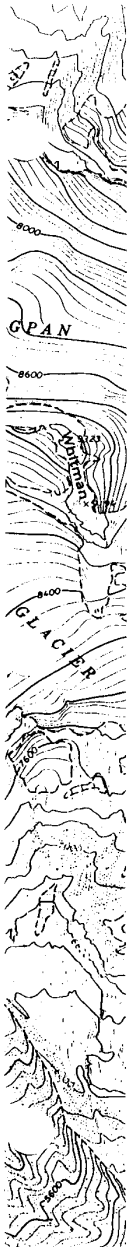
#9

The Governors of the four Northwest states have also released a statement outlining their preferred strategy for recovery efforts. Their recommendations include designation of priority watersheds for salmon and steelhead, use of more selective fishing techniques, a license buy back program, restrictions of harvest rates, gear, and timing for commercial and non treaty sports fisheries, hatchery reform, and increased funding for activities designed to improve ecosystem health and fish and wildlife health protection. (68-69) The Mountaineers supports all of those recommendations.

#10

The need for concerted and energetic action is documented by the poor condition of waters in the state of Washington. A 1992 survey of Washington Rivers classified

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54% of them as not supporting designated beneficial uses because of various types of pollution and degradation. (77) The Columbia River and its tributaries do not meet clean water standards, and the degraded condition is directly related to declining fish populations throughout the basin. (77) Vigorous proactive measures are needed to restore water quality throughout the state of Washington.

Native salmon and steelhead and many resident fish species are in decline throughout the Columbia River basin. Eight out of twelve salmon and steelhead ESU are threatened or endangered. A large part of this is because of impoundments behind dams on the Columbia. (79-80) The widespread removal of large woody debris, and increased sedimentation from logging, agriculture, and other uses has reduced the structural diversity of in stream habitats necessary for fisheries. A long history of mining, logging, and grazing has badly degraded substantial portions of rivers east of the Cascades. (82)

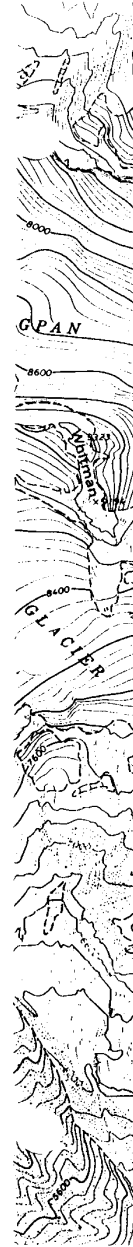
Further, estuary conditions have also been substantially affected, and many wetlands along the shores and inner tidal marshes and swamps have been converted to other uses since 1948. Dam construction has impacted seasonal patterns and volumes of discharge into the estuaries, and dredging has also impacted estuaries. (82) As a result of development and the impacts of agriculture, forestry, mining, and other activities, many stocks of fish and wildlife are already in serious condition. (100)

We also agree with the Natural Focus implementation action to decrease harvest. Many ESU's are dangerously below sustainable levels. Restoration of habitat is not enough when the current ESU's are further endangered by continued harvesting. Actions by federal agencies to curtail harvesting of commercial fisheries on the East Coast have shown that fisheries can come back if harvesting is curtailed for a period of years. Once the fisheries resources return to sustainable levels, then increased harvesting can gradually be reintroduced, subject to careful monitoring and evaluation.

We also concur with the recommendation that hatcheries be curtailed and in some instances discontinued. There is substantial evidence that hatchery runs are crowding out natural runs and severely impacting natural runs through disease. In many cases hatcheries are located on prime fisheries streams, but the streams above the hatcheries are closed to natural fish runs. In this way the hatcheries close off prime habitat for natural fish runs. Many hatchery managers are still driven by the old policy of pumping out the maximum number of fish, regardless the impact on wild fish stocks or the habitat or sustainability of the overall fisheries resource.

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Page Five

Curtailment of hatcheries will have an impact on commercial fisheries and on the tribes, and these economic impacts should be recognized and appropriate adjustments made. We recognize the important treaty rights of tribes to their "natural and accustomed" fisheries resources, but these treaty rights should not require continued hatcheries policies and other policies which will drive natural fish runs into extinction.

The Mountaineers has previously supported removal of the four lower dams on the Snake River. Breaching of the dams is the best way to insure restoration of the Columbia River ecosystem and the return of healthy fish runs. Breaching of the four dams would have an impact on power supply that would cost some economic dislocation. However, these dams provide less than 5% of the energy for the region, and customers most affected would see the power bills increase by only \$1-3 per month. The amount of power that would be lost as a result of breaching those dams is not significant when considered in the context of the greatly increased amount of power demand, which will come from growth in the next 20 or 30 years. The BPA and this region must recognize that additional sources of power must be developed and that energy conservation must be greatly increased, regardless of what happens to the four dams on the Snake. Only 13 farms would be affected by removal of the four dams, and they could continue to get irrigation water by extending the pipes to river levels and adding a booster pump.

The Mountaineers supports implementation of the various tribes' treaty rights. However, those rights can and should be implemented in a way that do not jeopardize continued health of endangered fisheries runs. For example, putting nets across the mouth of a river and capturing almost an entire run of endangered fisheries is not an appropriate harvest technique. The tribes can harvest endangered runs by spearing, hook and line, hand nets, and other traditional techniques which do not endanger entire runs.

Although the Mountaineers disagrees with many of the implementation actions of the Strong Stock policy, we do concur that there is merit on focusing on viable stocks and ecosystems to avoid a broader collapse of fish and wildlife populations. (114) We also concur that protecting endangered species can be accomplished in part by using economic incentives to promote conservation. (115) Most rivers and streams flow through private property during some part of their journey. Providing incentives to private property owners, such as by providing grants to fence off streams, is an excellent idea. Requiring private property owners to incur enormous

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expense to protect fisheries resources, which are public resources and of no direct economic benefit to the private property owner, naturally results in antagonism.

#19

The DEIS points out at 122 that the Natural Focus policy direction may significantly change social and economic patterns and may be perceived as an extreme position. The Mountaineers agrees that the Northwest cannot be returned to the condition that it was in 1850. However, we do feel that attempting to protect existing natural ecosystems has great merit and should be a strong leg of any policy that is eventually adopted. BPA asserts that this policy would dramatically reduce its role as a major contributor to electric power in the region and would impact its ability to contribute to fish and wildlife recovery efforts. However, the BPA and other power agencies are going to have to look at alternative energy sources for the future in any event, because the future increased demand will outstrip the ability of the dams on the Columbia system to produce the required power. Therefore, development of alternative sources of energy and a strong energy conservation program are essential in any event for the economic health of the region.

#20

#21

We recognize that these ideas may be controversial and that there may be strong opposition to implementation of this policy direction. However, we believe that there are important public policy issues involved, and we look forward to seeing these issues addressed in the final DEIS.

Sincerely,

The Mountaineers

Edward M. Henderson, Jr.
President

EMH/kle