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Don B. Miller

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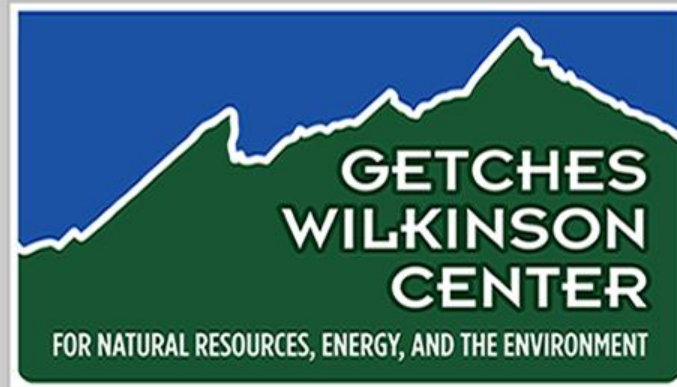
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**OF DAMS AND SALMON IN THE COLUMBIA/SNAKE BASIN:
DID YOU EVER HAVE TO MAKE UP YOUR MIND?**

Don B. Miller
Senior Staff Attorney
Native American Rights Fund

DAMS: WATER AND POWER IN THE NEW WEST

June 2-4, 1997

Natural Resources Law Center
University of Colorado
School of Law
Boulder, Colorado



Of Dams and Salmon in the Columbia/Snake Basin; Did You Ever Have to Make Up Your Mind?

by Don B. Miller¹

ABSTRACT:

The surviving anadromous fish populations of the Columbia/Snake Basin will likely cross the threshold of an irreversible "extinction vortex" within the next decade unless the system of dams and reservoirs is significantly modified together with the system's governance and operations. Existing efforts under the Endangered Species Act and Indian treaty rights will likely prove inadequate to spur the region and the Federal Government beyond the gridlock that has existed for decades. While the possibility of a full-frontal, Indian-treaty-rights attack on the dam system is increasing, it is more likely that Congressional deregulation of the electric-power-generating industry will, for the next two years, create the most additional risk and uncertainty for both power and fish interests by virtue of its Jekyll-and-Hyde potential for either hastening extinction by drying up recovery funding or providing a vehicle for implementation of an effective recovery effort. The ultimate resolution of the salmon crisis, including extinction by default to status-quo, will be the result of a political decision that pits the region's desire to retain the benefits of the nation's cheapest electricity against the survival and restoration of the region's principal cultural icon -- the salmon. Salmon recovery implicates a broad range of national issues, including: 1) energy policy (deregulation & FERC relicensing); 2) environmental policy (ESA & NEPA); and, 3) treaty rights and obligations (Indian fishing & water and international). Although the uncertainty created by ESA processes and environmental and Indian litigation has thus far been insufficient to move the region beyond gridlock, the added uncertainty arising from energy deregulation may have the potential to encourage the region to avail itself of a final opportunity to avoid the intrusive effects of national-level decision making. To maximize its influence in power-industry restructuring, the region must expand its Comprehensive Energy Review process to be a truly comprehensive and inclusive regional settlement forum. Unless stalemate is to continue, the "regional-fix" forum must: 1) address each of the above-listed major national policy areas; 2) be voluntary and include the federal, state, and tribal sovereigns, and fish and power interests; and 3) maintain a firm commitment to following the most current science. It would appear, therefore, that an effective regional agreement would address energy deregulation issues, settlement of major Indian treaty water rights litigation over instream flows for fish, settlement of ESA litigation of flow and passage issues, FERC relicensing, and mitigation for existing uses affected by likely major structural reconfiguration of the dam and reservoir system (e.g., removal or natural-river drawdown of the four lower-Snake-River dams and drawdown or removal of John Day Dam).

¹The views presented herein are the author's and do not represent those of the Native American Rights Fund or any of its clients.

I. Of Dams and Salmon

Once upon a time, the salmon runs of the Columbia River Basin and the commercial fishery they supported were the world's largest. Many people alive today in the Pacific Northwest remember a time when salmon and steelhead were plentiful in the Columbia and Snake Rivers. Among those who remember are the Nez Perce, the Umatilla, the Warm Springs, and the Yakima. These Columbia River Treaty Tribes, together with other aboriginal inhabitants of the region, harvested anadromous fish for thousands of years. That their economies, their cultures, their religions, indeed the very essence of their beings, were, and continue to be, inseparable from the salmon was reflected in the contracts they made with the United States in the 19th century. These contracts, or treaties, which permitted the peaceful settlement of the region by whites, provided that in return for the relinquishment of vast amounts of territory, the Government would, among other things, recognize and protect in perpetuity the Indians' rights to harvest fish both within the lands the Indians reserved for themselves (an exclusive right) as well as at their "usual and accustomed places" off the reservations (a right to half the harvest held in common with non-Indians).

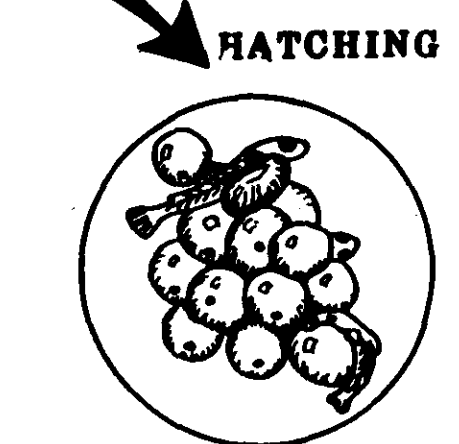
Today, Columbia-Basin salmon populations have declined from an estimated 10 to 20 million fish to between one-half to 2 million, of which only 10 to 20% are wild (the majority being hatchery fish). There are only 4 stocks in the Columbia Basin classified as healthy: Lewis River (WA) and Hanford Reach (WA) fall chinook, Wenatchee River (WA) sockeye, and five summer steelhead stocks in the John Day River (OR). All Snake River salmon and steelhead stocks will be listed soon, added to the presently-listed runs of spring and summer chinook, fall chinook, and sockeye. Snake River Coho are now extinct, together with an estimated 60 other stocks in the Columbia Basin.

A. The Anadromous Life Cycle

Anadromous fish are defined as those which migrate from freshwater to the ocean and return when mature to spawn. After hatching and emerging from the spawning gravel of inland rivers and streams, fry may linger up to 18 months before beginning their journey to the ocean. Spring and summer migration to the sea is spurred by the fast-moving spring runoff and triggers the process of smoltification, a transformation that enables the juveniles to adapt to salt water. To reach the ocean, the smolts drift and swim downstream for distances as long as one thousand miles, feeding along the way. Once in the ocean, they spend from one to five years maturing before returning to the freshwater streams of their birth to spawn and die. (Salmon die, steelhead may repeat the cycle).

Recent scientific reports, most notably that of the Independent Science Group (ISG) of the Northwest Power Planning Council, confirm the common-sense proposition that "fish need a river." This means that in addition to water, habitat diversity is critical to maintaining healthy populations. To supply the resiliency necessary to both avoid extinction and recover to harvestable levels, stable core populations in prime habitat must be strong enough to support more transient satellite populations in less-ideal habitat. Migrating juveniles thus require, for example, not a canal or a slow-moving slack-water reservoir, but a complex system of back water slews and channels in which they can rest and feed.

This "normative river" concept does not envision a return to completely natural rivers, but rather decision making that uses norms or standards that are based on those ecological attributes and processes characteristic of productive salmonid-bearing large river systems throughout the world.



**CHINOOK SALMON
LIFE CYCLE**

B. Dam Passage To and From the Ocean

Over the last 5 decades, the proliferation of dams and reservoirs have made the salmon's remarkable journey to and from the ocean almost impossible. The strength and endurance of salmon and steelhead commanded man's deep respect and awe long before the Columbia-Basin dams transformed one of the world's wildest river systems to a series of deadly lakes. Today's man-made environment is far more challenging than nature's own rigorous gauntlet. Over 50 large dams presently block the Basin's major rivers. If the dams on smaller tributaries are included, the number soars to over 500. The Columbia Basin is the most dammed river system in the world.

In order to pass the dams on their upstream migration, returning adults must find and use fish ladders, a series of pools constructed at ascending levels. These structures utilize the salmon's extraordinary jumping ability to provide passage. However, because dams are especially lethal to outmigrating juveniles, most of the study and operations to facilitate dam passage is focused on downstream migration.

To reach the ocean, smolts reared below the impenetrable man-made barriers, *i.e.*, dams without fish ladders (Hells Canyon on the middle Snake, Chief Joseph Dam on the middle Columbia, and Dworshak Dam on the Clearwater) must pass the dams by either spilling over the top, surviving a trip through the power-generating turbines, catching a ride on a barge or a truck (surface transportation), or by entering a bypass facility. Passage is often facilitated by releases of water from upstream storage reservoirs (flow augmentation). Although the benefits and problems that attend these methods are exceedingly complex and have themselves "spawned" the creation of an entire techno-legal industry, they can be broadly summarized as follows.



MONTANA

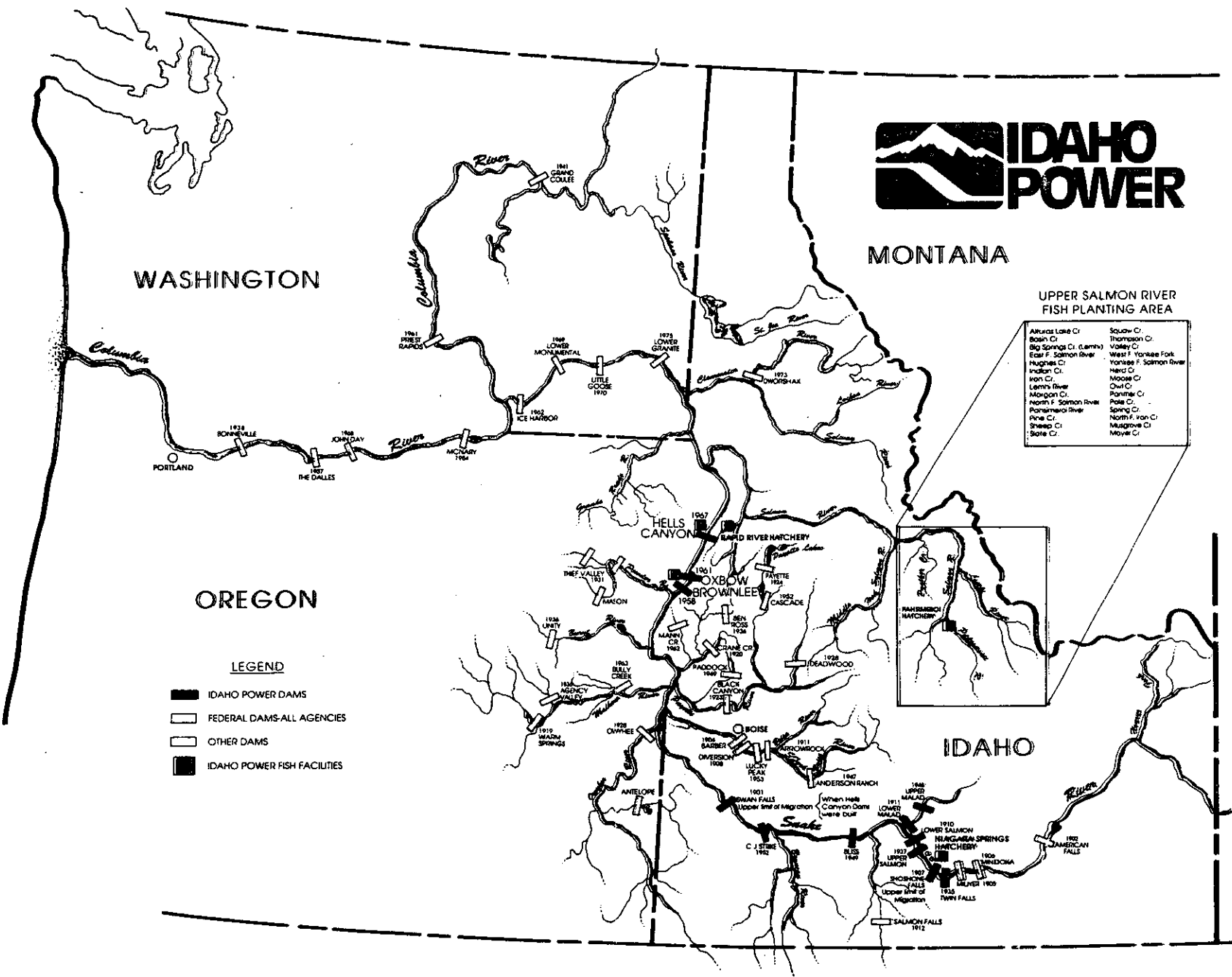
UPPER SALMON RIVER
FISH PLANTING AREA

Alford Lake Cr.	Squaw Cr.
Basin Cr.	Thompson Cr.
Big Springs Cr. (Lemhi)	Volley Cr.
East F. Salmon River	West F. Yankee Fork
Hughes Cr.	Yankee F. Salmon River
Indian Cr.	Hard Cr.
Iron Cr.	Moose Cr.
Lemhi River	Owl Cr.
Margan Cr.	Parma Cr.
North F. Salmon River	Pole Cr.
Parma Cr.	Spring Cr.
Pine Cr.	North F. Iron Cr.
Shoop Cr.	Mudgrove Cr.
Sole Cr.	Mayer Cr.

OREGON

LEGEND

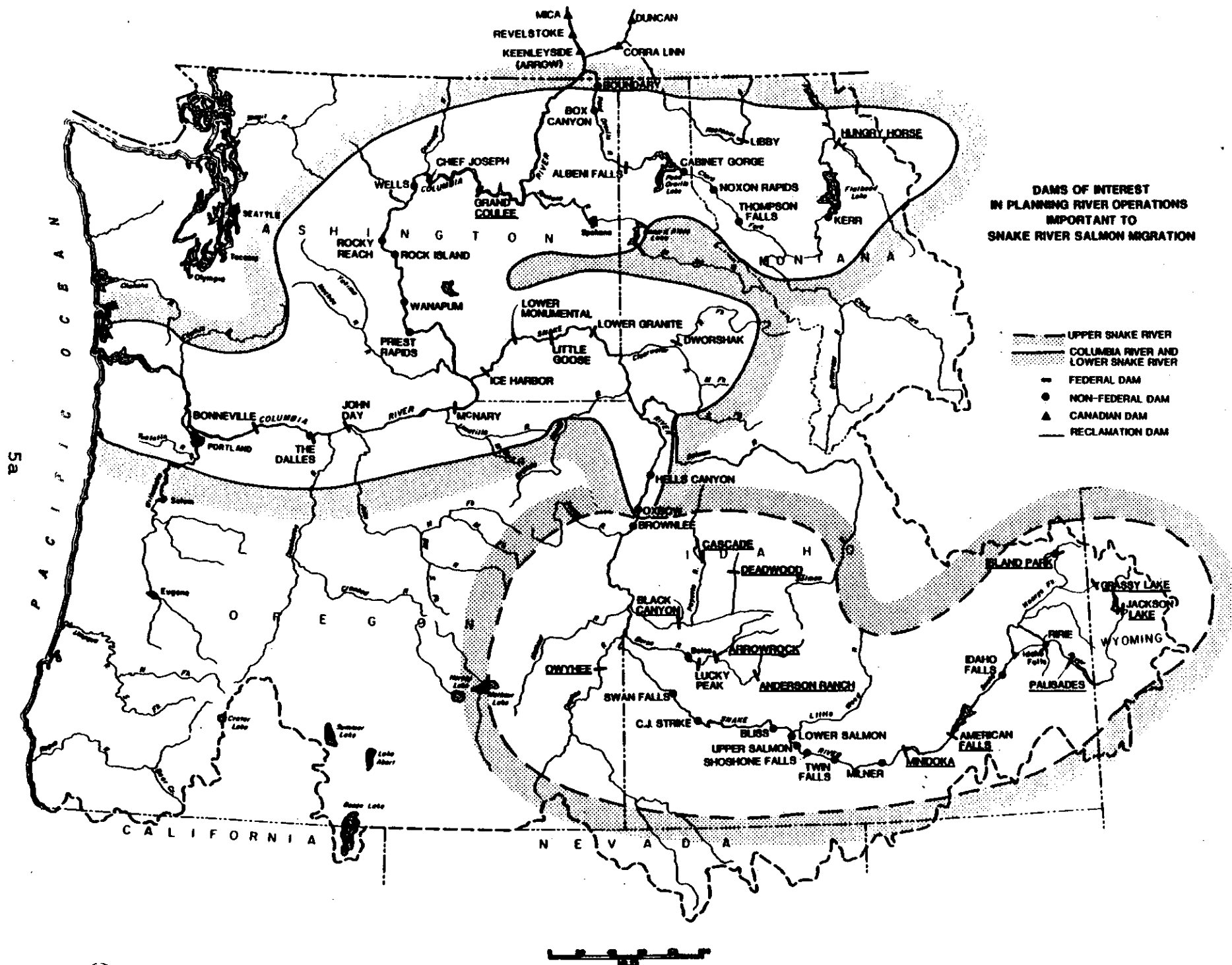
- IDAHO POWER DAMS
- FEDERAL DAMS-ALL AGENCIES
- OTHER DAMS
- IDAHO POWER FISH FACILITIES



Flow augmentation helps anadromous fish by lowering water temperature and decreasing juvenile migration time, thereby reducing exposure to predators and the disease, disorientation, and possible genetic alteration associated with the warmer slackwater of reservoir pools. But because the salmon require spring and summer peak flows for juvenile migration, use of stored water to augment flows reduces the amount available for irrigation in critical times during the growing season. And, water used for flow augmentation will not be available to generate electricity in the winter when the utilities' peak demand arises.

Spilling more water over the dams' spillways is an effective method of decreasing the number of juveniles blown up, descaled or disoriented by the pressure of the dams' turbines. Spill must be carefully controlled, however, as it can cause the river to become supersaturated with nitrogen, resulting in gas bubble disease which, if it does not prove fatal, frequently causes disorientation and lethargy. However, following several gas-bubble catastrophes in earlier decades, the Corps of Engineers has improved its spill methods and, at least in its lower Columbia operations, now experiences near-zero spill mortality. Depending on the water year, spilling can still be expensive, however, as spilled water cannot be used for power production.

Much of the money spent on facilitating juvenile passage is devoted to a program of barging and trucking fish around the dams. Fish are collected at Lower Granite, Little Goose, and Lower Monumental Dams on the lower Snake and at McNary Dam on the mainstem Columbia, placed in barges or trucks, and transported below Bonneville Dam where they are released to continue their downstream migration to the ocean. The mechanical collection and handling processes frequently cause injury and stress to the smolts, subject them to predation and disease during holding and transport, and impair their homing processes as returning adults.



C. Human Activities, and Particularly Dams, Have Killed the Fish

The near destruction of one of the world's most plentiful food sources, which reached crisis proportions in the 1970s and continues to this day, is the result of human development unaccompanied by ecosystem management. The demise of the fish is attributable to many different human activities, including deforestation, irrigation, over-fishing, grazing, mining, urbanization, and hydro-electric power development and operations. The proliferation of hatchery fish is often added to the list, and the human factors are frequently referred to as the "four H's," for habitat degradation, hydropower operations, hatcheries, and harvest.





Much like tobacco industry executives, some beneficiaries of the current system continue to argue that there is insufficient "proof" that dams kill fish in sufficient numbers to require major reconfiguration of the dam/hydro system. They point to other factors such as harvest, predation, and natural conditions. Although it is true that anadromous fish populations have generally waxed and waned with natural conditions, there is no question that human activities are responsible for the extinction or degradation of the Pacific Northwest's anadromous fish runs within the last 150 years. Thus, while over-harvest significantly reduced salmonid populations during the late 19th and early 20th centuries, fish were so plentiful that most races and stocks remained viable. In contrast, the development of the hydroelectric system over the last six decades, together with logging and irrigation, is now on the verge of accomplishing one of mankind's major extinctions, with the hydroelectric system presently accounting for an estimated 80 to 90 percent of anadromous fish mortality.

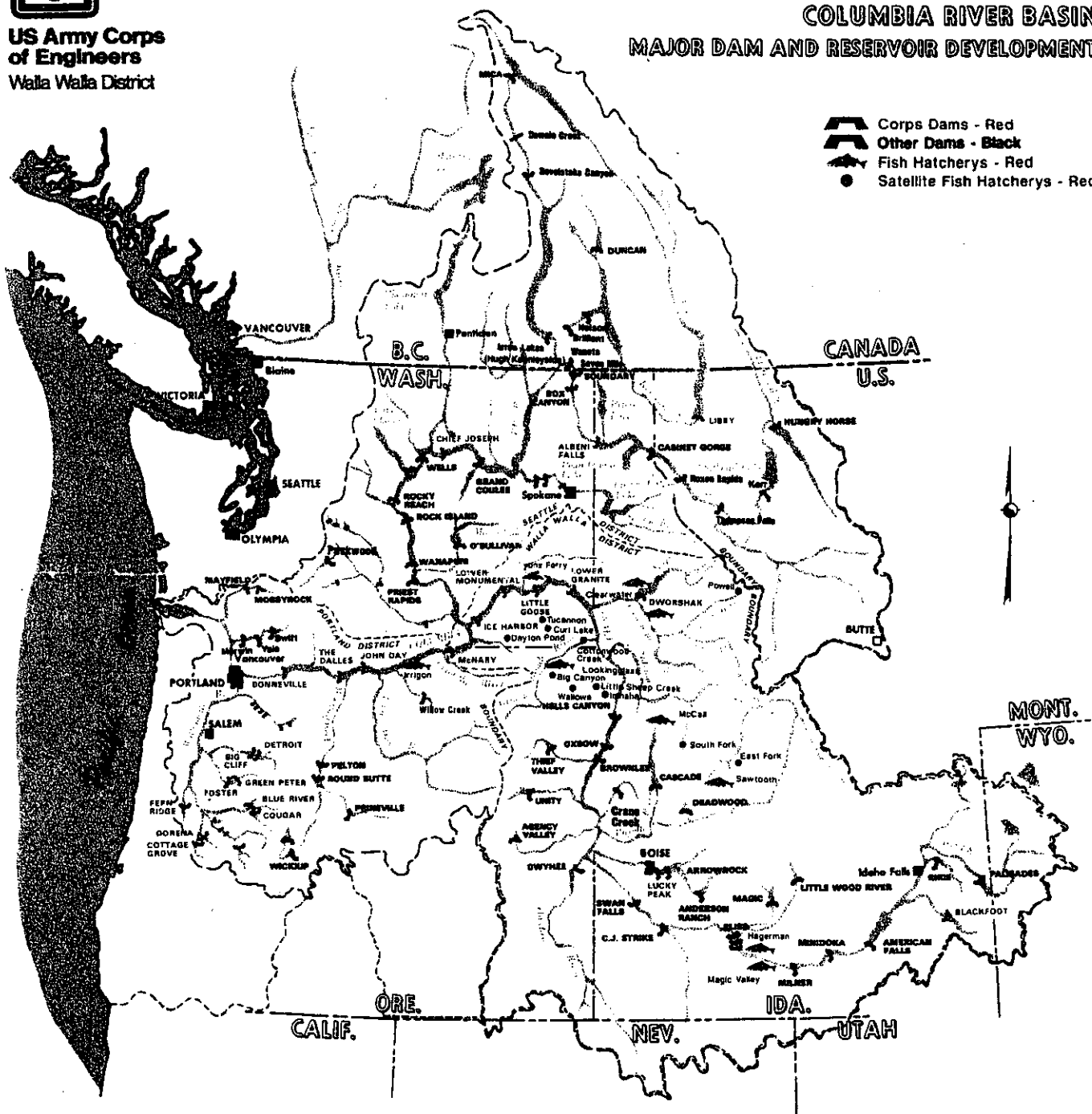
While the cost in natural devastation has been immense, basin development has produced the world's largest hydroelectric system. Its 150 power-producing dams generate about half of the electricity used in the Pacific Northwest and permit ocean-going barges to navigate to and from Lewiston, Idaho, 450 miles inland. Hydroelectric and other development around the rivers has been the economic mainstay of the Pacific Northwest, bringing phenomenal



US Army Corps
of Engineers
Walla Walla District

COLUMBIA RIVER BASIN MAJOR DAM AND RESERVOIR DEVELOPMENT

-  Corps Dams - Red
-  Other Dams - Black
-  Fish Hatcheries - Red
-  Satellite Fish Hatcheries - Red



economic growth and prosperity to the region in the years following World War II. Columbia Basin dams were generally constructed for multiple purposes, including; hydroelectric power generation, flood control, irrigation, navigation (commercial barging), and recreation.

While small dam building began in the region in the 19th century, the era of major dam building on the Columbia system began in 1938 with the Army Corps of Engineers' Bonneville Dam on the lower Columbia River near Portland. Bonneville Dam had fish ladders, albeit hastily and poorly designed, but the Bureau of Reclamation's Grand Coulee Dam on the mid-Columbia went on line in 1941 without any fish passage capability. Grand Coulee destroyed Canada's and Montana's theretofore bountiful Columbia River salmon runs. Since that time, each additional dam has drawn salmon and steelhead further into the spiral toward extinction.

With the construction of each successive dam and reservoir, the fish faced a new obstacle that could itself kill anywhere from 15 to 30 percent of the juveniles reaching that dam in their migration to the ocean. After Bonneville, the Corps built three more dams upstream on the lower Columbia; McNary (1954); The Dalles (1957); and John Day, with its 76-mile-long pool of lethal slackwater, (1968). On the middle Snake River, the construction of Idaho Power Company's 3-dam Hells Canyon complex, completed in 1967, completely blocked upstream migration into the upper Snake and its tributaries. (Salmon and steelhead had previously migrated upstream nearly as far as Twin Falls, Idaho.)

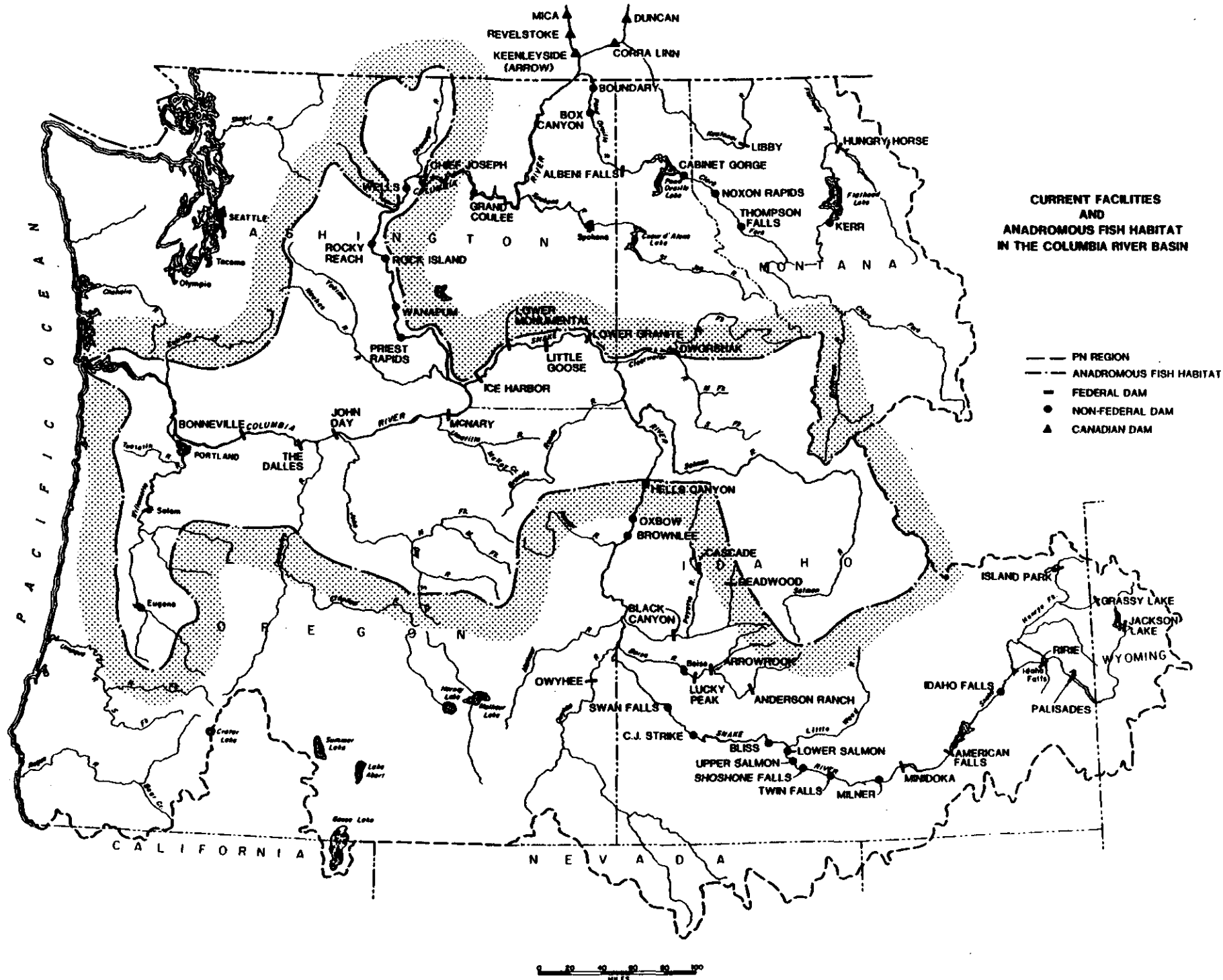
But through the mid-1960s, the salmon still seemed to have some chance of surviving, at least within their newly-constricted habitat. The Hanford Reach (below Priest Rapids) and the Salmon and Clearwater River Basins in Idaho still provided excellent spawning and rearing habitat for those fish that could make it by the four Corps dams on the lower Columbia. The value of Idaho habitat is illustrated by the fact that Idaho's Salmon River alone once produced

forty to forty-five percent of the of the entire spring and summer chinook run in the Columbia/Snake Basin.

Although conservationists had hoped that the Hells Canyon complex and additional dams in the middle Columbia might satiate the region's desire for additional dams and thereby spare the lower-Snake gateway to Idaho's relatively unspoiled nursery, the end of the nation's dam-building era did not arrive quite soon enough for the fish. The region's development forces had the muscle to fend off the environmentalists one last time and extend the dam-building era just long enough to block the lower Snake River. The year 1975 witnessed the completion of the last in a series of four major hydroelectric/navigation dams on the lower Snake River in southeastern Washington. With the commissioning that year of Lower Granite Dam, the era of major dam building in this country came to a close. Lewiston, Idaho became a seaport, and passage to and from one of the last remaining areas of pristine anadromous fish habitat was severely diminished.

Although some fish have continued to pass the lower Snake dams, most scientists and policy makers now realize that these last four dams (Ice Harbor (1961), Lower Monumental (1969), Little Goose (1970), and Lower Granite (1975)), coupled with the deadly effects of John Day Reservoir and upriver impoundments, will, if they remain in place, lead soon to the extinction of Snake River salmon and steelhead and may eventually result in the salmon's extinction throughout the Basin.

It is these four lower Snake dams, together with John Day Dam, that are currently the focus of system reconfiguration studies. In essence, most acknowledge that the "plumbing" has to change quite soon if we are to avoid further major extinctions. While fish advocates (tribes, environmentalists, commercial and sports fishers, fish and wildlife agencies, *etc.*) generally recognize that the river system cannot be restored to its pre-dam natural state, most agree that



the dam-building frenzy resulted in an extravagance that the region, or the planet, for that matter, could not afford. In order to strike a balance that fosters both a working river and healthy salmon populations, it has become clear to many, including some power interests, that the four lower Snake dams must be either breached or removed. In order to preserve Hanford Reach runs and restore other Columbia River stocks, John Day Reservoir must be considerably drawndown or eliminated. It is believed by many that these measures, together with other plumbing changes and modified operations, are the minimum necessary to allow that long-term recovery of salmon to harvestable levels.

II. Did You Ever Have to Make Up Your Mind?

A. Current recovery efforts have been ineffective

At least since Bonneville Dam was completed in 1938, the Federal Government has managed the Columbia and Snake Rivers under the assumption that dams, timber harvest, and other development activities could proceed while salmon and other species were propped up with technology. However, despite increasing investments in mitigation technology, salmon populations continued to decline over the decades, contributing to major Indian treaty litigation during the 1970s. *See, e.g., Washington v. Washington State Commercial Passenger Fishing Vessel Association*, 443 U.S. 658 (1979).

In response, during the 1980s the region initiated what has been called the largest biological restoration program on the planet. Congress enacted the Northwest Power Act in 1980, ratifying an interstate compact among the four states of the Pacific Northwest creating the Northwest Power Planning Council (NPPC or Council), an interstate agency comprised of members appointed by the governors of Washington, Oregon, Idaho, and Montana. The Council is charged with the exceedingly difficult task of promoting an adequate, economic

and efficient power supply for the region while protecting fish and wildlife from the effects of the hydroelectric power system. It must provide equitable treatment for both missions.

Yet, despite the expenditure of billions of federal dollars, the declines have continued, with the 1990s witnessing dramatically worsening salmon runs as fish populations, already weakened by decades of human impacts, were devastated by poor environmental conditions (a lengthy drought and adverse ocean conditions caused by El Niño.)

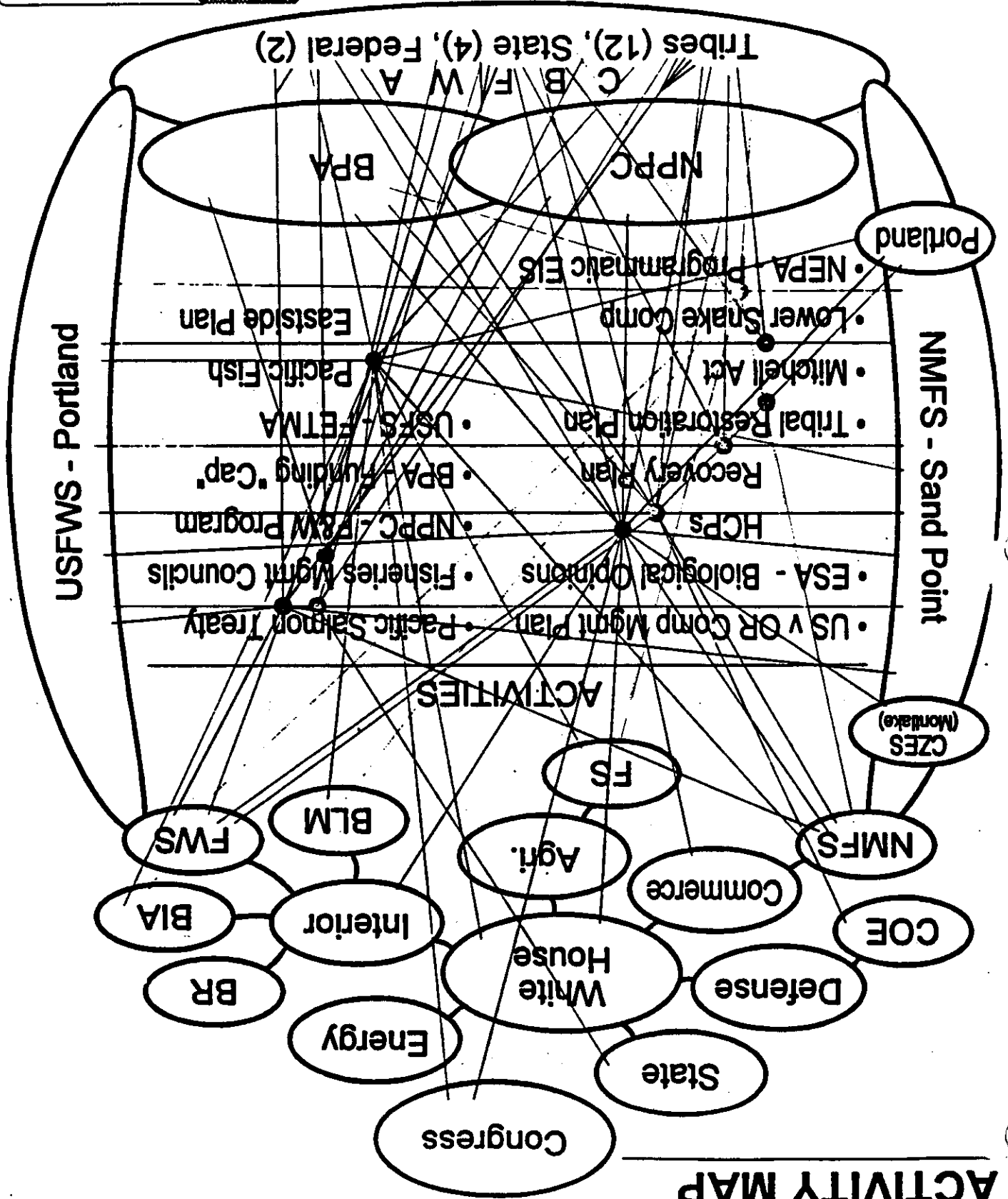
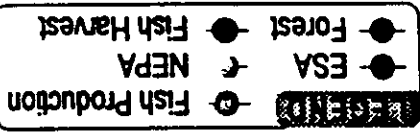
In the early 1990s, the Endangered Species Act, through the federal agency charged with protection of marine life, the National Marine Fisheries Service (an agency within the National Oceanic and Atmospheric Administration within the Department of Commerce), moved to center stage. NMFS listed Snake River spring, summer, and fall chinook and sockeye salmon under the Endangered Species Act. Snake River steelhead have declined 90% over 30 years and are now proposed to be added to the list. The 1990s have also seen a dramatic increase in environmental litigation under the Endangered Species Act.

The National Marine Fisheries Service, through Biological Opinions and Recovery Plans, is required to seek the compliance of the federal agencies that operate the Federal Columbia River Power System (FCRPS). These agencies, the Bonneville Power Administration (BPA), the Army Corps of Engineers, and the Bureau of Reclamation, face greater risks by acting inconsistently with NMFS' directives than they do if they fail to implement the Council's Fish and Wildlife Program in their operations. They must simply give heightened consideration to the Council's Fish and Wildlife Program, with the exception that BPA's funding allocations for fish and wildlife must be consistent with the Council's Program. This circumstance, coupled with recent court decisions affirming NMFS' interpretation and implementation of its ESA duties, has led one waggish observer to quip that the NPPC's Fish and Wildlife Program has been "highjacked" by NMFS and the ESA.

The developments and studies of the last decade have called into question the basic assumptions upon which fish management policies have been based. With the extinction of many salmon runs and the precipitous decline of most others, the notion that technology - fish hatcheries, barges to transport fish past dams, mechanical devices to avoid the dams' turbines, *etc.* - could make up for the loss of free-flowing rivers and extensive habitat degradation has drawn increasingly damaging criticism from the scientific community. There is a rapidly developing consensus among scientists, documented most recently by the ISG Report (Executive Summary attached), that wild salmon need a functioning ecosystem. Salmon recovery thus requires us not to manage the river system, but to un-manage it, at least in part, to allow the river system to move more toward a natural condition.

Although current federal policy appears for the time being to continue to rely on the chimerical proposition that man's technology can substitute for nature, it is plain that the assumptions that underlie existing federal policies are no longer viable. Much has been written on the failures of the existing management policies and programs, their failure to incorporate science into their processes, and the seemingly hopeless complexity created by the numerous competing interests and overlapping and conflicting jurisdictions. Rather than attempt to summarize them here, and without attempting to minimize their importance in any way, the reader is referred to the ISG Report, Angus Duncan's materials in this notebook, the excellent materials provided at this conference last year by Professor Mary Wood and John Volkman, and other sources referenced at the end of this paper.

FISH & WILDLIFE ACTIVITY MAP



B. Will the region find a political will to resolve the salmon crisis?

1. Not just yet: chaos reigns for now.

Decision makers are presently faced with this question: can a working riverine ecosystem be restored, and if so can it be done without unacceptable impacts to the people who rely on the river? Although that question poses major challenges for a region that relies on the Columbia River dams for much of its economic vitality, recent developments in the hydroelectric power industry, together with rapidly changing scientific and political views, compel the region and the federal government to move quickly to revisit the assumptions upon which current river-management policies and options are based.

The legal/political framework within which these issues must be resolved is exceedingly complex and can change rapidly as a result of elections, new scientific reports, or decisions by agencies and courts. However, that characterization simply describes the state of affairs that has prevailed for several decades. And it illustrates the basic point that further litigation or negotiation under existing processes are likely to only continue the stalemate. No doubt these processes must continue - and their scientific/technical studies will contribute to the foundation for needed change - but it is unlikely that they will deliver to either side the kind of stunning setback that could lead to a timely (for the salmon) resolution.

Perhaps because the stakes are so high, the combatants in the decades old "fish wars" have dug their trenches and apparently settled in for the long haul. As noted, a mind-numbing array of advisory committees, steering committees, technical committees, agencies, councils, and courts with overlapping and conflicting jurisdictions continue to debate, study, litigate, and otherwise spend hundreds of millions of dollars annually on operations and techno-fixes that have failed to reverse the salmon's decline.

We are on the brink of studying the salmon to death, and the argument that status quo should be preserved while additional studies are completed is increasingly viewed by some as a thinly-veiled argument for extinction. True, completion of additional studies would add increments to the existing knowledge base. As a general matter, however, for the foreseeable future the biological sciences are unlikely to provide the degree of certainty which engineers and other linear thinkers generally require. Thus, most scientists in the region "know" now, with about as much certainty as they will have three years hence, what needs to be done to save the fish. And they "know" that it must be done fairly soon.

The scientific consensus emerging around the necessity of returning to a more natural river and the futility of techno-fixes has shifted the focus of the debate to economics. As might be expected, the clarification of the science, in narrowing recovery options, has exacerbated fears that the solution may require additional economic sacrifices beyond the hundreds of millions currently expended annually. And, while there has apparently been little open discussion to date, it no doubt has caused some power advocates to silently wonder whether all Snake River stocks should simply be sacrificed in favor of cheap electricity, thereby allowing the diminishing recovery dollars to be focused on the remaining Columbia River stocks.

Therefore, the real question continues to be whether the region or the nation has will to implement the best-available scientific knowledge and save the salmon. That is a political question. Whether the cumbersome federally-sponsored ESA and Northwest Power Planning Council processes can ultimately set the stage for the development of a political consensus remains unclear, although recent experience does not lend hope. In abstract process terms, it would seem that a voluntary settlement process jointly designed and convened by the participants would be more likely to result in the regional consensus necessary to support a comprehensive legislative resolution. But to adequately address the problem under consideration, any regional process would require a good-faith commitment to solve the

problem by relying on the best available science. Thus, no doubt due in part to the direction in which the studies are pointing, the mere establishment of such a regional settlement table itself becomes a very political act. So far, the requisite will has been lacking on part of policy-level federal and state officials, river users, and some of the other fish-war litigants. Stated differently, the region has learned to live with the expense and uncertainty created by the enforcement of the ESA and Indian treaties. If a regional consensus is to be reached, incentives to compromise must become even greater.

Recent developments suggest strongly that additional litigation and study may be necessary before a political will to act can manifest itself within the region. On April 2, 1997, the Ninth Circuit Court of Appeals rejected an American Rivers challenge to the National Marine Fisheries Service's (NMFS) use of barge and truck transportation to avoid a jeopardy finding on the operations of the FCRPS. *American Rivers v. NMFS*, 1997 WL 149314 (9th Cir.(Or.)). On April 3, 1997, the federal district court in Oregon, discussing at length the lack of unity among the plaintiffs (states and environmental groups) and amici and intervenors (tribes, states, and user groups), rejected challenges to the jeopardy standard and implementation of NMFS' 1995-1998 Biological Opinion (BiOp). *American Rivers v. National Marine Fisheries Service*, No. 96-384-MA (April 3, 1997). Two weeks prior, the *American Rivers* plaintiffs filed sixty-day notices of intent to challenge NMFS' failure to initiate ESA consultations on upper-Snake Bureau of Reclamation operations and middle-Snake Idaho Power operations under existing FERC licenses (attached). Also in March, shortly after the Supreme Court's decision in *Bennet v. Spear*, No. 95-813 (March 19, 1997), industry groups signaled their attack on NMFS for doing too much for fish, filing a sixty-day notice challenging the same 1995 BiOp (notice attached). At about the same time, the State of Montana withdrew from further participation in the NMFS' implementation process under the 1995 BiOp, and on May 2, 1997, the Umatilla Tribe likewise withdrew for different reasons. (NMFS had determined in the 1995 BiOp that federal agencies' operations of the FCRPS jeopardized listed species and required modifications in the system's operation: the

process from which Montana and Umatilla withdrew is the ongoing NMFS regional consultative process among federal agencies, states, and tribes to improve coordination of recovery efforts, analyze system reconfiguration options, and adaptively implement the BiOp.)

In Idaho, negotiations concerning the federal/tribal instream flow claims to most of the Snake River's water stalled in March, due principally to the lack of leadership and will on the part of several key players to continue the attempt to convene a regional settlement forum. The Nez Perce Tribe's instream flow claims were filed by the Tribe and the United States on its behalf in the State's general stream adjudication of all rights to water in the Snake River and its tributaries within Idaho. The Snake River Basin Adjudication (SRBA) is perhaps the largest general stream adjudication ever undertaken in this country, with over 170,000 claims now filed. In April, the state water court placed the parties on an expedited discovery schedule with an obvious intent of moving as quickly as possible toward trial.

The SRBA provides a vivid illustration of the obstacles to implementation of basin-wide management: while neither the headwaters nor the downstream reach of the Snake River lies within Idaho or the state court's jurisdiction, Idaho is proceeding to fully allocate the river within Idaho on a schedule dramatically at odds with the regional salmon processes. Indeed, the list of major processes and initiatives that are now proceeding on their own timelines with very little, if any, coordination between them includes at least the following:

- * the SRBA;
- * the regional Comprehensive Energy Review & national energy deregulation;
- * ESA processes (including implementation of the existing BiOp and recovery plan, adoption of the new one for 1999 operations, and evaluation of options for system reconfiguration);
- * relicensing of major privately owned dams operated under FERC licenses, (including Idaho Power Company's Hells Canyon complex);

- * proposed revision of the NPPC's Fish and Wildlife Program; and,
- * the Interior Columbia Basin Ecosystem Management Project (*see* attached press release).

While the prospect for negotiated solutions appears bleak for the near future, further court decisions or the products of the current round of ESA study under the 1995 Biological Opinion, scheduled for completion in 1999, may eventually assist in rekindling a regional political will. Both the Corps of Engineers and the NPPC are re-evaluating the economic costs of lower-Snake dam removal or natural river drawdown. Partial reservoir drawdown has been removed from consideration, and the remaining options under evaluation are: a) four-dam removal or natural-river drawdown; and, b) transportation of fish by barge or truck. Flow augmentation from upstream storage facilities continues to be studied by NMFS as part of its process for issuance of a new Biological Opinion governing operations beginning in 1999. In addition, energy deregulation will undoubtedly play a pivotal role in any regional effort.

2. Energy deregulation may prod the region toward a regional forum.

Of emerging critical importance is the Northwest Governors' ongoing Comprehensive Energy Review process. This process is attempting to arrive at a regional consensus that might help protect the economic benefits of the nation's least expensive electricity from Congressional action, anticipated in the near future in the form of amendments to the Northwest Power Act, to further deregulate the electric-energy-generation industry. The region now enjoys energy rates estimated to be 40% below the national average. However, because the entire system is heavily subsidized by federal dollars, including not only power generation and transmission, but also barge transportation, irrigation, grazing, and logging, all of which contribute to the salmon's decline, the region is concerned that its low electric rates may be jeopardized by deregulation.

Likewise, fish proponents are concerned that deregulation may result in greatly diminished salmon restoration funding. Currently, recovery efforts and the complex river governance programs are financed by Federal Columbia River Power System (FCRPS) revenues. BPA, the Federal agency that markets the power produced by the Government dams on the System, often states that it devotes \$435 million per year to fish and wildlife programs, with direct expenditures limited to \$252 million. But in 1996, BPA expended \$175.4 million and valued its BiOp operations at \$102 million. In addition, it is also required to repay to the Department of the Treasury the enormous stranded debt created by the failure of several nuclear power plants built by Washington Public Power Supply System (WPPSS). WPPSS debt totals roughly \$7 billion plus interest, and amounts to a yearly drain on BPA of \$500 to 700 million. By forcing BPA to become competitive, energy deregulation may reduce the amount of salmon recovery funding. Moreover, it is certain that even BPA's current level of fish funding would be insufficient to accomplish what will be necessary to restore salmon, *i.e.*, reconfigure the Basin's plumbing and implement a revised river-governance regime.

The question thus prefaced becomes one of "who will pay?" Will Treasury, under specified circumstances, temporarily forbear for the purpose of saving salmon? Will it forbear for the purpose of preserving low power rates in the region? Will some or all of the cost of the failed nuclear power plants be shifted back to the utilities and investors who stood to benefit if the plants had been successful? If transmission operations are separated from power generation operations, as has been proposed, will transmission operations be required to share the obligation to fund recovery efforts? Will the region's consumers of electricity be asked to pay through one device or another?

Many regional observers believe that Congress will not be interested in continuing to subsidize the region's inadequate efforts to make the power system pay its way for salmon

and other environmental costs, nor will it be likely to bail the region out of its stranded-debt predicament. A member of the Northwest Power Planning Council recently opined that there were three options; look to the Treasury, look to the system's historic customers, or let salmon go extinct. It does not appear that Treasury or Congress will be a likely source of additional funds anytime in the foreseeable future. That would seem to leave the region's fish and power interests to work it out.

If fish advocates and power interests alike wish to minimize the possibilities of salmon extinction and increased power rates, the region must present a unified, well-reasoned plan to Congress. Plainly, no regional accord will be reached without first resolving the question of continued future funding for salmon restoration and river governance. Indeed, if regional power interests approach Congress with a plan that does not provide adequately for restoration and governance, they will likely be opposed by regional Tribes and environmentalists. They, in turn, might be joined by other states or countries anxious to see the Pacific Northwest fulfill its treaty and environmental obligations. Representatives from other regions of the country might inquire why their ratepayers should be required to pay higher rates covering the environmental costs of their energy consumption, while the Pacific Northwest continues to have cheap power by avoiding those costs. Obviously, the Pacific Northwest will be in a weak position if it cannot present a unified plan to Congress. Default to national-level decision making carries with it very substantial risks of both increased regional power costs and insufficient salmon recovery and governance funding.

The Energy Review Steering Committee's Final Report was released in December, 1996 and immediately attracted strong criticism from regional Indian tribes and other fish advocates. Noting that the Report failed to adequately address recovery funding or recognize the role of Indian Tribes and environmental issues in energy restructuring, critics charged that it represented almost exclusively the interests and views of the utilities and energy-intensive industries. Following the Final Report's release, the Governors have established a Transition

Board charged with attempting to build the regional consensus that the Final Report briefly acknowledged was necessary.

The possibility of strong national influence over regional power operations may spur renewed interest in a regional salmon resolution. If it does not, or perhaps either way, the nationalization of issues fundamental to the operation of the hydroelectric system may provide fish advocates an opportunity to nationalize resolution of the salmon crisis as well. It has been observed that the fate of the salmon will no more be left solely to the Pacific Northwest than will the survival of the Everglades be left solely to Florida. Regardless of the analogy's validity, it would seem that the plight of BPA and the desire for less expensive power, both regionally and nationally, makes putting the question to Congress in the absence of a regional consensus a risky undertaking.

Thus, while there appears to be little near-term chance of convening a voluntary regional forum, energy deregulation may provide a nucleus around which a regional settlement effort might take form. But regardless of the source of the incentive, an inclusive, voluntary regional forum continues to offer the best hope for resolution of the intertwined problems facing salmon and hydropower.

3. Some random observations regarding the shape of the table and principles for a regional forum

The scientific, economic, legal and political developments of the past few years point toward the necessity of and increasing desire for a successful basin-wide salmon restoration effort. As discussed above, however, any regional effort will be hampered, if not neutered, by the conflicting missions and processes of the various decision-making entities. All, including non-decision making entities such as some influential development interests and

environmentalists, are compelled to some extent by law or policy to attempt to impose their will upon other interests in the region, although the degrees of evangelistic zeal and aggressiveness tend to vary by mission and entity. But by the very nature of our legal and political systems themselves, which have in recent years expanded the range of interests with legal standing, these various efforts to devise and implement a resolution independent of other key interests will likely be ineffective.

It has been observed that this is not France, that this country has no history of unified government, and that the system of fragmented, overlapping, and conflicting authorities is the American way. Regardless of the accuracy of that particular observation, the region's experience of worsening legal and policy gridlock over the last two decades calls into serious question the ability of any decision-making entity to utilize its authority as a means of mandating either a resolution or a process for achieving a resolution. All sides would appear to have the political or legal muscle to derail any effort to arrive at a resolution that does not meet their needs. None would appear to possess the ability to devise and implement a solution. And while a long-term war of attrition might eventually produce a "winner" and a resolution, it seems clear that within the time the salmon have left, further litigation and imposed processes and solutions will not result in either fish interests or power interests gaining an "upper hand" sufficient to permit them to impose their view of the world on the other.

Moreover, the matter will ultimately be decided by Congress, and perhaps on a more expedited time schedule than some in the region would prefer. The solution will almost certainly be a political one, and the region is running out time. The sheer complexity of the problem demands that all decision-making entities and other interests in the region accept the proposition that the safeguards and restraints traditionally afforded by legal and bureaucratic process will, in these circumstances, produce further gridlock or delay resolution beyond the time that remains for the salmon. For settlement purposes only, such acceptance will require

a *de facto* surrender of some degree of control, to be replaced by a recognition that the nature of the political process itself, *i.e.*, that any proposed resolution must be enacted by Congress and state legislatures possessing the power to change existing law, will operate to restrain excess and obstinance.

At such time as the region is prepared to move forward, it appears that the only realistic option will be to convene a broadly-representative, voluntary settlement forum. Presently, the Northwest Governors' Comprehensive Energy Review process appears to offer the best possibility for convening such a forum, although it would have to be carefully structured to be effective. To avoid the pitfalls of past unsuccessful regional-consensus efforts, such a forum would have to meet and decide its own ground rules. Beyond that, any proposal regarding principles governing negotiations or their structure, as well as proposals for solutions that entail system reconfiguration and modification of river governance, must be offered for catalytic purposes only. Other than requiring recognition of the fundamental proposition that any resolution proposed by the regional forum must be enacted by Congress, state legislatures, and secure tribal approval, there appears to be very little the individual entities could mandate at the beginning of the regional-forum process.

Strictly for deliberative purposes only, therefore, the following partial list of basic principles and guidelines might be considered.

a. Co-equal participation

First, all decision-making entities would need to recognize that at a political bargaining table, their views and legal/policy mandates are entitled to more or less the same weight as those of other participating interests, including those who wield "big-enough" political or legal clubs. Thus, participants are entitled to one seat at the big table.

This one-seat rule will present special difficulties for the "federal family." But its application must include the Federal Government, as the participation of several federal agencies would quickly drive result-oriented participants "round the bend" and undermine the entire process. Federal participation would thus need to be coordinated through a specially appointed representative with the imprimatur of the highest office in the land. Such a person would "ramrod" a flexible federal coordinative effort, probably through the White House's Council on Environmental Quality. He or she must not be saddled with the burden of formal process in the form of yet another layer of steering committees and advisory groups. Rather, he or she must have the discretion to assemble and disassemble advisors at will.

The principle of an equal voice for all will require each participant, and particularly those of the sovereigns, to negotiate based on their interests rather than on their frequently non-negotiable legal or policy mandates. This in turn will require the settlement process to be structured to facilitate small group discussions that are informal, off-the-record, and exploratory in nature. It would be understood that at the small-group level, negotiators would not have the authority to bind their principals.

b. A single individual, not a group, must have authority to actively direct the process.

For many of the same reasons that the federal effort must be coordinated through a strong leader, any overall regional process must also be firmly directed by an individual. This individual must have, at the very least, regional stature and be respected by a broad cross section of interests. The facilitator must have broad latitude and authority to move the process forward. Rather than select this individual, it would appear to be preferable for the Governors, at least initially, to permit the forum participants to settle on a suitable individual.

- c. **There must be a commitment to be guided by the best available scientific opinion.**

Participants in any regional forum must be required to commit to using the best available science. The scientific opinions and conclusions utilized by the regional forum must be the product of independent scientific peer review panels. Processes must be agreed upon that will assure the fair allocation of the burdens of scientific proof and prevent marginally legitimate or bad-faith hypotheses from consuming limited time and resources.

- d. **The forum must be comprehensive and Basin-wide.**

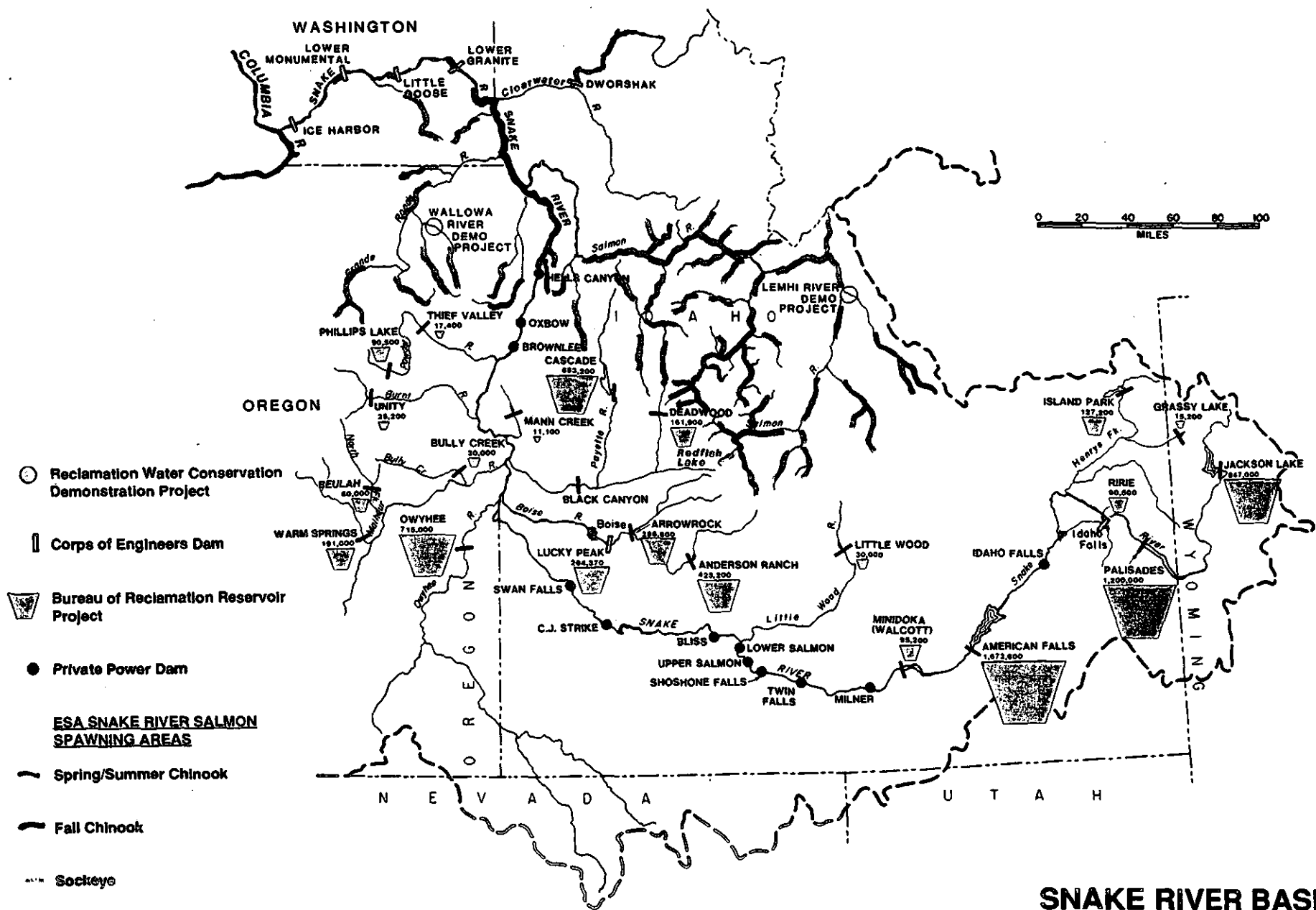
A partial or piecemeal approach would, by definition, not resolve issues that are truly Basin-wide in scope. To ensure enactment of the final agreement, major interests cannot be excluded. The "four H's" must each be addressed as they relate to each broad issue.

III. Conclusion

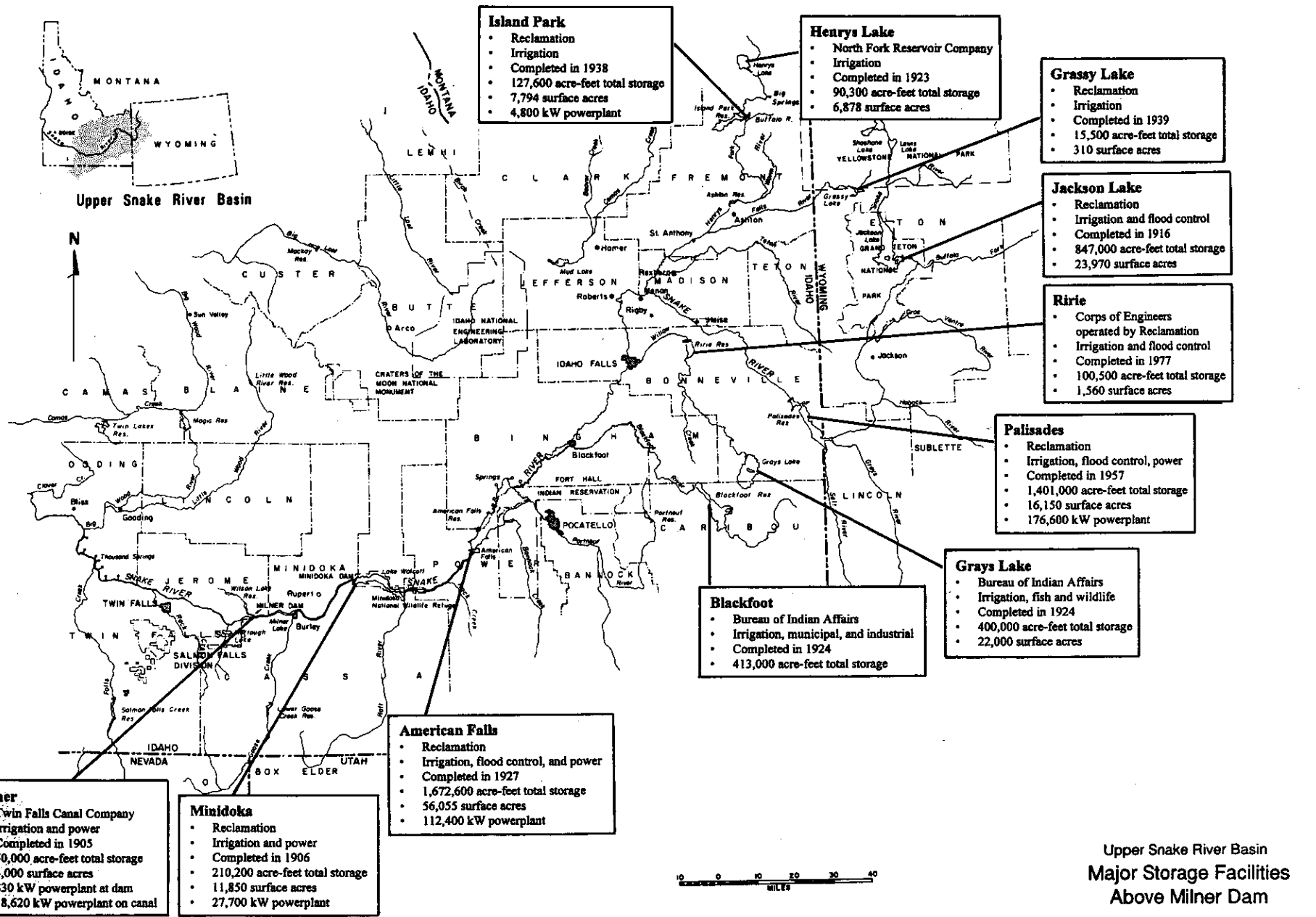
A regional settlement forum will hold true potential only when the issues are ripe for resolution. This is understood to mean that there exists sufficient pressure on all parties to reach agreement. A premature push for a comprehensive settlement carries the risk of jeopardizing such a process when its time finally does arrive, in that it may conjure up memories of the frustration attending past unsuccessful regional settlement conferences. It appears that past efforts to arrive at a regional settlement, as well as current settlements efforts under the ESA through NMFS' Executive Committee processes and its ADR effort to expand litigation settlement discussions, have suffered from a top-down approach that tends to keep certain sovereign entities in charge while at least appearing to marginalize the participation and interests of other key players in the region. Thus, the principles of broad and voluntary participation with an equal voice become critical to the success of any effort to achieve regional consensus.

Therefore, it would appear that the proper roles for a sovereign or group of sovereigns interested in fostering consensus regarding the region's power and fish problems would be those of catalyst and sponsor. Following some preliminary "shape-of-the-table" understandings among regional-forum participants, they might undertake, or be encouraged to undertake, consideration of existing or yet-to-be-developed proposals for modified river governance and system reconfiguration. Beyond simply maintaining status quo, which at least some interests are apparently still seriously proposing, extant proposals for overhauling river-governance structures include: 1) vest authority in the states, acting through the Northwest Power Planning Council; 2) defer to the federal agencies [query: how would such deference be different from today's status quo?]; 3) implement the utilities' proposed "Customer Governing Board and River Governing Board;" 4) vest authority in the NMFS Executive Committee processes; and, 5) create a new "Board of Sovereigns/Columbia Basin Watershed Planning Council." (Angus Duncan, January 31, 1997 Memorandum to interested parties.)

For the present, in order to be prepared to avail themselves of the opportunity for regional consensus, should it present itself, all interests must continue to give serious study and consideration to the river governance and reconfiguration issues and continue their efforts to devise new and creative options for the future. The likelihood of Congressional deregulation of the electric power industry appears to carry the potential for creating sufficient pressure on the parties to settle their differences. As a result, the Northwest Governor's Comprehensive Energy Review process may have the potential to evolve into a voluntary basin-wide effort if the Governors so desire. But for at least the next several months, it appears that the regions' widely divergent interests will escalate their adversarial efforts in attempts to either deepen the status-quo quagmire or create more favorable settlement conditions. Because such efforts are likely to simply extend the existing stalemate while salmon continue to decline, strong leadership on the part of the Northwest Governors and the Federal Government is called for immediately. In exercising this leadership role, however, the Governors and particularly the Federal Government, must adopt the role of sponsors described above and proceed in a manner that is radically different in tone and tenor from past top-down, bureaucratic efforts.



SNAKE RIVER BASIN



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INDEPENDENT SCIENTIFIC GROUP

851 SW 6th Avenue, Suite 1100, Portland, OR 97204

Mr. John Etchart, Chair
Northwest Power Planning Council
851 S.W. 6th Avenue
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September 18, 1996

Dear Mr. Etchart,

On behalf of the Independent Scientific Group, I am pleased to transmit to you the prepublication version of our report, *Return to the River*. This draft has been subject to scientific peer review. We consider it to be in nearly final form. Over the next two months, we plan to do final editing of the report, and we expect to provide a final version to the Council in November 1996.

This report responds to three directives given to the group by the Council:

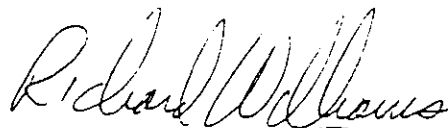
- 1) The first biennial scientific review of the Council's Fish and Wildlife Program called for in measure 3.2B.1 of the December 1994 rule.
- 2) Development and description of an explicit, scientifically based conceptual foundation for the Council's program as called for in section 5.0F.2 of the December 1994 rule.
- 3) A review of the science behind underlying the Council's December 1994 rule as called for in a statement from the Council dated May 1995.

This report represents a major work that has consumed the attention of the group over the last 14 months. It provides the scientific rationale for a redirection of the region's efforts to rebuild the natural resources of the Columbia River Basin. This new direction is based on the premise that restoring salmon, steelhead and other species of interest, can only occur by restoring the Columbia River ecosystem to a state that is compatible with their biological needs. While we recognize that the Council's charge is to address the impacts of the hydroelectric system, we feel that the Council's goals can be met only by addressing restoration at the ecosystem level. Efforts to date have tended to separate species from their ecosystems; the lack of success of this strategy is evident.

What we have provided is a scientific rationale for the Council's efforts. We have not provided a prescription for action, nor have we attempted to craft a new plan. Any successful program must have a sound scientific basis, but will take into account social and economic factors as well. Our job has been to provide the scientific basis, while the Council and other regional decision makers must develop the regional program.

I speak for all the group in saying that preparation of this report has been a professionally rewarding experience. We commend the Council for the courage and foresight to seek explicit scientific direction. We stand ready, along with our colleagues in the new Independent Scientific Advisory Board, to assist the Council in further development of the Fish and Wildlife Program.

Sincerely yours,



Richard N. Williams, Ph.D.
Chair, Independent Scientific Group

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-- PREPUBLICATION COPY --

Return to the River:
Restoration of Salmonid Fishes
in the Columbia River Ecosystem

Development of an Alternative Conceptual Foundation
and
Review and Synthesis of Science
underlying the Fish and Wildlife Program
of the Northwest Power Planning Council

by
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EXECUTIVE SUMMARY

BACKGROUND

In the December 1994 amendments to the Columbia River Basin Fish and Wildlife Program (Section 3.2B), the Northwest Power Planning Council called on the Bonneville Power Administration to fund the Independent Scientific Group to conduct a biennial review of the science underlying salmon and steelhead recovery efforts and Columbia River Basin ecosystem health. The Council's objective was to provide the region, to the greatest extent possible, clear and authoritative analysis conducted by impartial experts.

The Council also asked that the independent scientists develop a conceptual foundation for the fish and wildlife program (Section 5.0F), to provide an overall set of scientific principles and assumptions on which the program and fish and wildlife management activities basinwide could be based and against which they could be evaluated.

On September 18, 1996, we delivered to the Council this report, which contains the first biennial review and a proposed conceptual foundation for the Fish and Wildlife Program. This report has been peer reviewed by additional scientists, whose comments, where appropriate, are reflected in this report. Appendix A, contains a history of the Independent Scientific Group and brief biographies of its members.

After an introductory chapter, this report is divided into four main components: Chapter 2 contains the proposed conceptual foundation for the Fish and Wildlife Program; Chapter 3 contains the review of the scientific basis for measures included in the current Fish and Wildlife Program, using the conceptual foundation as a template for this evaluation; Chapters 4 through 10 contain the detailed technical data and documentation on which Chapters 2 and 3 are based; Chapter 11 describes general conclusions from our review.

It must be noted at the outset that we were not asked to carry on original research. Nor were we asked to provide specific recommendations for revising the Council's Fish and Wildlife Program. Our charge was to analyze existing data and measures currently in the program, and draw conclusions based on that analysis. The relevant scientific literature we reviewed and cited in this analysis is listed at the end of each chapter.

In submitting this report, the Independent Scientific Group hopes that it will be a valuable resource for decision-makers. The findings should enable fishery managers to focus future research activities on areas that still are not thoroughly understood. However, the review does not include policy recommendations for recovery and restoration. Nor does it recommend specific measures or strategies or deal with institutional structures. It is not an implementation plan. Instead, the conceptual foundation proposed in this report should provide the scientific foundation for public policy to be developed by the Council and other decision-making bodies. It

can be used to guide salmon restoration activities in general, as well as future development of the Columbia River Basin Fish and Wildlife Program.

AN ALTERNATIVE CONCEPTUAL FOUNDATION

Defining a Conceptual Foundation

A conceptual foundation is a set of scientific principles and assumptions that can give direction to management activities, including biological restoration programs. It is the filter through which information is viewed and interpreted. Recovery measures and research findings will take on different meanings when viewed through different filters.

Because ecosystems that have been disrupted over several decades, such as the Columbia River Basin, have scarce evidence left of thriving natural ecologies, scientists must rely on the best available information and remnant populations to assemble as complete a picture as possible. In these instances, the conceptual foundation is designed to be changed over time as new information, about the problems *or* the solutions, becomes available.

Conceptual Foundations in the Current Fish and Wildlife Program

As we began our development of this conceptual foundation, we looked first to the Columbia River Basin Fish and Wildlife Program to determine whether such a foundation already exists in that document. Our answer is yes and no. The Fish and Wildlife Program actually has several implied conceptual foundations. This is likely a result of the process through which it is created, in which recommendations from fish and wildlife managers and others are reviewed and adopted. Each participating agency or individual brings to the process some version of a conceptual foundation on which their recommendations are based. In nearly every instance, these conceptual foundations are not stated outright, but are only implied. In some cases, the foundations that make their way into the program through the adoption of specific measures are in conflict.

In our review of the Fish and Wildlife Program, we analyzed the general assumptions that seem to determine the direction of program activities. The most fundamental assumption appears to be that the natural ecological processes that result in a healthy salmon population can be, to a large degree, circumvented, simplified and controlled by humans. Out of this context, we drew three further assumptions:

1. The number of adult salmon made available to spawn is primarily a direct response to the number of smolts produced. (More young fish will automatically result in more adult spawners.)

2. Salmon production can be increased by actions taken within the river without accounting for conditions in the estuary or ocean.
3. Management actions will not compromise environmental attributes of the ecosystem that supports salmon.

The assumptions above drive management toward actions that are best characterized as technological substitutes for ecological processes. They are often measures that respond to individual problems and they may be credible scientific approaches to those problems if they are viewed in isolation: hatcheries and mechanisms for improving salmon survival at hydroelectric projects, for example, rather than actions that look at the broader context of salmon life history, behavior and habitat. They reflect a good faith effort by the Council and the region's fisheries managers to recover salmon populations. However, the continuing decline of the basin's salmon populations indicates that the conceptual foundations in the current fish and wildlife program and the actions based on those foundations are inadequate.

Our Proposed Conceptual Foundation

The conceptual foundation we propose departs from some of those in the current program. It is not intended to validate existing measures in the program, nor does it derive out of those measures. It is instead designed to form a framework into which recovery measures can be integrated, when they are appropriate. It can provide a template against which recovery actions can be measured and evaluated.

In this proposed conceptual foundation, we treat the Columbia River and its tributaries as both a natural *and* a cultural system. A natural-cultural ecosystem encompasses all the ecological and social processes that link organisms, including humans, with their environments. This approach integrates the habitat of salmon and other wildlife, as well as human habitat, with land use and other cultural developments.

We draw our conceptual foundation from established ecological principles, based on what we understand about the decline of salmon populations and their habitat in the Columbia River Basin.

There are three critical elements of our conceptual foundation:

1. Restoration of Columbia River salmon must address the entire natural and cultural ecosystem, which encompasses the continuum of freshwater, estuarine and ocean habitats where salmon complete their life histories. This consideration includes human developments, as well as natural habitats.
2. Sustained salmon productivity requires a network of complex and interconnected habitats, which are created, altered and maintained by natural physical processes in freshwater, the estuary and the ocean. These diverse and high-quality habitats are crucial for salmon spawning, rearing, migration, maintenance of food webs and predator avoidance.

3. Life history diversity, genetic diversity and metapopulation organization are ways salmon adapt to their complex and connected habitats. This biodiversity and its organization contribute to the ability of salmon to cope with the environmental variation that is typical of freshwater and saltwater environments.

1. The Natural-Cultural Ecosystem

We believe an ecosystem with a mix of natural and cultural features can still sustain a broad diversity of salmon populations in the Columbia River Basin. We call this ecosystem "normative," by which we mean an ecosystem where specific functional norms or standards that are essential to maintain diverse and productive populations are provided. In developing our definition of normative, we looked at what conditions lead to high levels of salmon productivity in less-constrained river systems, as well as in the historic Columbia River Basin.

Key among the conditions we define as normative is the availability of a continuum of high-quality habitat throughout the salmon life cycle, from freshwater streams along the entire migratory path into and back out of the Pacific Ocean. This habitat varies from freshwater to saltwater, from fast-moving, gravel-bottom streams to deep pools and deeper seas. We assume that this habitat is dynamic, responding to daily, seasonal, annual or longer life-cycle changes. We also assume that a diverse array of salmon populations and other occupants of this habitat have adapted over time to the majority of these natural changes. Under some circumstances, salmon in mainstem reaches and adjacent subbasins of the Columbia formed groups of interconnected populations, which we refer to as metapopulations.

Development of the Columbia River for hydropower, irrigation, navigation and other purposes has led to a reduction in both the quantity and quality of salmon habitat, and most critical, a disruption in the continuum of that habitat. Depleted salmon populations cannot rebuild if any habitat that is critical during any of their life stages is seriously compromised.

Consequently, we believe that the most promising way to help salmon populations rebuild is to reduce or remove conditions that limit the restoration of high-quality salmon habitat at each of their life history stages. Our intent in describing a normative ecosystem for salmon is to point out key characteristics that are critical to their survival and productivity. Our description is necessarily general. Specific prescriptions, such as flow regimes, levels of stock diversity, etc., will need to be developed through a process that includes policy development and trade-offs between the natural and cultural elements of the ecosystem. Our normative ecosystem is also dynamic. Conditions in the normative ecosystem will vary, progressing from the current state of the river toward historic conditions, based on the region's decisions and actions.

2. Productivity and the Network of Habitats

The Columbia River is a complex network of habitat types from the headwaters to the estuary. Populations of salmon, as well as other fauna and flora, are distributed throughout this network, thriving wherever there are sufficient resources to sustain their growth and reproduction. Some species are relatively localized, finding adequate resources within a narrow geographic range. These include resident fish. Others, such as anadromous salmon, require vast migrations and specific conditions at each "post" in those migrations, if they are to thrive.

The system of hydropower dams on the Columbia has greatly diminished the diversity of habitat once characteristic of this watershed. The dams severed the continuum of habitat, leaving very little riverine habitat left in the mainstem and isolating other types of habitat. Dams also altered flooding and draining patterns, which further reduced available habitat types and food webs in those habitats. Two key consequences of this loss of habitat diversity have been a reduction in the biodiversity of native salmon stocks and the proliferation of non-native species. Certain species have been able to adapt to conditions created by the dams, while others have not. For example, invertebrates, fish and plants that are not native to the Columbia have proliferated in the impounded river reaches rather than in free-flowing reaches, generally because impounded habitat is more homogeneous.

Normative river conditions are re-expressed at some distance downstream from dams – the further from the dam, the more habitat recovery occurs. This has been demonstrated on the Flathead and Clearwater rivers, for example. However, the mainstem dams on the Columbia and Snake rivers, for the most part, preclude such resetting of habitat conditions because water released from each dam pours directly into the reservoir behind the next downstream dam. The exception is the Hanford Reach on the mid-Columbia, the last free-flowing stretch of the river. The Hanford Reach provides a model of the productivity possible in river reaches that are not fully regulated by dams. It supports a healthy population of fall chinook capable of surviving downstream migration, harvest in the ocean and return upstream to spawn.

Our study has led us to the further conclusion that ocean conditions, which are variable, also are important in determining the overall productivity of salmon populations. Fluctuations in atmospheric and oceanic processes change the physical environment of the ocean, including food webs, water temperatures and other conditions.

Traditionally, fishery managers did not account for ocean conditions in their management decisions. This was largely for two reasons: they assumed the ocean environment and its food webs were substantially in equilibrium, and they recognized that it is impossible to control the climatic patterns and physical factors that influence ocean productivity.

While we agree that the ocean itself is uncontrollable, our management decisions in response to ocean conditions *can* be altered. What we need is a better understanding of and more attention

paid to the linkages between freshwater and marine environments and the processes in the ocean that influence production of salmon. For example, conservation programs designed to address one set of ocean conditions may not be appropriate for another set. Furthermore, river-based management programs and dependence on hatcheries for production have led to a significant reduction in salmon diversity, potentially eliminating those salmon that have adapted to the greatest variety of ocean conditions.

3. Life History Diversity and Metapopulation Organization

In a natural river system, the availability of complex and connected habitats is a critical contributor to salmon productivity. These habitats, whether riverine, estuarine or oceanic, are dynamic. They change daily, annually and sometimes over decades. They change in response to cyclic events, such as the annual spring runoff, and to major non-cyclic events, such as volcanic eruptions, droughts or landslides. How effectively salmon populations survive these changes, or fail to survive them, is influenced by their life history characteristics.

Life history characteristics of salmonids include such traits as: age and size at juvenile migration; growth and maturity during migrations; spawning habitat preferences; migration patterns; and age and timing of spawning migration. These are the characteristics that enable salmon to survive and reproduce within the range of their interconnected habitats. But it is the diversity of habitats that is the template for this diversity of life history characteristics. Salmonids evolved over time in response to their diverse and ever-changing environment.

In the salmon ecosystem of the Columbia River Basin, the variety of habitat types was vast. The loss of much of the habitat and degradation of even more, as well as the loss of connectivity, have constrained salmonid production and reduced life history diversity.

In their 1996 review of the status of Pacific salmon, the National Research Council recommended that salmon be viewed as metapopulations rather than as isolated stocks. This application of metapopulation concepts to natural populations is still being debated among scientists, so our inclusion of the metapopulation structure as it applies to salmon should be viewed as a hypothesis that requires further study and confirmation.

Metapopulations are groups of local populations that are linked by individuals that stray among the populations. Metapopulations persist through the mechanism of straying. When local populations become extinct, they can be re-established through colonization by strays from neighboring local populations. We believe that metapopulation structure is likely in salmon because these fish display both a high degree of homing to their natal streams, which establishes the groups of local populations, and a variable level of straying, which provides the dispersal of genetic traits needed to successfully recolonize habitat vacated by lost populations.

Salmonid metapopulations appear to structure themselves into core and satellite groups. The core populations are generally large productive populations that occupy high-quality habitat. Such large, core populations tend to be less susceptible to extinction than are satellite populations, which have fewer numbers and may occupy lower-quality habitat. Core populations appear to be important as sources for re-colonizing habitat following extinction of local populations.

Studies indicate that the most abundant salmon spawning populations likely occurred in river segments with well-developed floodplains and gravel bars, where habitat complexity was high, including areas suitable to spawning, egg incubation and juvenile rearing. We conclude that salmon populations spawning in large alluvial mainstem reaches of the Columbia may have served as core populations and, as such, may have played critical roles in sustaining salmonid populations in the basin.

Loss of prime mainstem spawning habitat for core populations, and further losses from fragmentation, isolation and degradation of habitats in tributary systems, could have significantly reduced the long-term persistence and stability of regional salmon production. For example, most fall chinook that spawned in the mainstem Columbia and Snake rivers are now extinct.

One of the only surviving mainstem populations of fall chinook spawns in the Hanford Reach in the mid-Columbia. This is the largest naturally spawning population of chinook salmon above Bonneville Dam, and it has been stable during the years when salmon in other parts of the basin have undergone severe decline. It is possible that fall chinook in the Hanford Reach now function as a core population, which might serve as a source for colonization of adjacent habitats if normative conditions were restored in those areas.

Isolated populations of salmon are less likely to be recolonized should they be driven toward extinction because they may lack adjacent populations with similar genetic traits. For the same reason, surviving isolated populations also have less likelihood of successfully contributing to efforts to replenish declining populations elsewhere in the basin. As populations become isolated, local extinctions become permanent, and the entire metapopulation moves toward extinction. Therefore, we believe that restoring salmon populations in this basin will require both the restoration of more diverse habitat conditions and the reconnecting of habitats into the continuum necessary to support salmonids at every stage of their life histories. If this continuum can be restored, we believe that metapopulations will re-emerge to help stabilize regional salmon populations against environmental fluctuations.

REVIEW OF THE SCIENCE UNDERLYING THE FISH AND WILDLIFE PROGRAM

Using our proposed conceptual foundation as the template, we examined the scientific assumptions underlying the Council's Fish and Wildlife Program. However, while our conceptual foundation addresses the continuum of salmon habitat from freshwater streams, through the

estuary and into the ocean, the Council's program is only required to address salmon habitat within the Columbia River Basin. Furthermore, while we looked at all causes of salmon decline and sought ways to reduce and reverse losses from all causes, the Council is mandated to respond only to hydropower-related losses. Consequently, the Fish and Wildlife Program addresses only a subset of the factors contained in our conceptual foundation, and we believe it is fundamentally limited in its effectiveness by these constraints.

Our approach to reviewing the scientific basis for the fish and wildlife program was to examine general principles and specific assumptions implied by the measures in the program and then assess the validity of those assumptions. We did not evaluate individual measures, but looked instead at the biological rationale for measures or groups of related measures. For example, the large number of program measures that relate to flow augmentation in the mainstem river suggests an assumption that flow rates, altered by the hydroelectric system, contributed to the decline in salmon populations. Once stated, that assumption can be analyzed scientifically, while the individual measures may be more difficult to analyze.

On the other hand, it is possible that individual measures or groups of measures may have solid scientific justification, but combined with other measures or strategies the outcome may be inadequate for recovery or inappropriate. In our analysis, we looked at the program, the process through which it is developed and the validity of assumptions reflected in it, based on existing scientific data.

Development of the Fish and Wildlife Program

The Northwest Power Act requires that the Columbia River Basin Fish and Wildlife Program be assembled from recommendations submitted to the Council by the region's fish and wildlife managers, including Indian tribes from the basin. The recommendations are proposed by these managers and other interested parties, reviewed by members of the public throughout the Northwest and adopted by the Council. The measures that are approved for inclusion in the program do not necessarily spring from or respond to a common understanding of the basin or its fish and wildlife resources. They are not necessarily based on a common conceptual foundation. In fact, as we noted above, there appears to be some conflict among implied conceptual foundations in the program.

We argue in Chapter 3 that there are three major problems with this approach to building a recovery program and incorporating new information as it is learned. First, the program becomes a "list" of measures, with advocates for various measures competing for recognition rather than working together to build the most cohesive and comprehensive effort. Second, measures are not prioritized based on overall goals or objectives. There are no overall schedules, nor is there an integrated means to monitor and evaluate measures. Third, the emphasis on individual measures

immerses the Council and implementors in endless details rather than an attention to the broader picture.

Our recommendation is to incorporate an integrated approach with measures based on the conceptual foundation we propose in Chapter 2. Measures could then be evaluated against that framework. They could be judged on how they contribute to the protection, mitigation and enhancement of ecosystem characteristics that are consistent with the biological needs of salmon, while providing for environmentally responsible energy production.

In addition, we suggest that credible, scientific review is needed of projects proposed for funding. We have prepared guidelines for research proposals, for proposal review and for peer review of projects, which can help the Council design a peer review process for the program.

Adaptive Management in the Fish and Wildlife Program

The Council incorporated the concept of adaptive management in the Fish and Wildlife Program in 1987, as a means of moving forward with recovery actions while the region continued to debate questions of biology and hydrology. In our view, adaptive management has since been used to justify a variety of actions on the premise that they may provide new information. We contend that adaptive management is intended as a much more rigorous scientific approach. The term should only be used in reference to explicit management experiments that include hypotheses, test conditions and a detailed experimental design. The concept of adaptive management should not be used as justification for every action about which the outcome is uncertain.

Assessment of the Fish and Wildlife Program

In our review of the scientific basis of the fish and wildlife program, we assigned a qualitative rating that summarized our assessment of the scientific support for various assumptions. Our numeric rating ranked assumptions and principles based on what we deem the "level of proof." A "level one" would apply to an assumption for which there is solid peer-reviewed empirical evidence. A "level two" would be backed by strong evidence, but not conclusive evidence. "Level three" assumptions have theoretical support with some evidence. "Level four" assumptions are speculative, with little empirical evidence to support them. Finally, "level five" assumptions are contradicted by good evidence to the contrary. Chapters 4 through 10 contain our analysis of the data we reviewed to establish these conclusions.

We first reviewed three general principles that appear in both the Council's program and in the Northwest Power Act.

1. *The salmon bearing ecosystem in the Pacific Northwest and northeast Pacific Ocean has considerable excess carrying capacity.* Level of proof: four. This assumption leads to the further assumption that there is a simple relationship between the numbers of smolts and increasing overall productivity over the long term. What confounds this assumption is the complexity of both freshwater and marine conditions. Inriver, estuary and ocean environments fluctuate dramatically in response to both human-caused and environmental changes. These fluctuations influence the long-term carrying capacities of the available habitat. The key to resilience in a variable environment is not just the numbers of smolts nor the quantity of habitat. Given the dynamic nature of the environment, we conclude from our analysis that it is the diversity of both habitat and genetic traits that is critical to restoring Columbia Basin salmon, not the quantity alone.
2. *Abundance of salmon and steelhead in the Columbia River Basin has, to a significant degree, declined due to, and is presently limited by, human actions.* Level of proof: one. This assumption is irrefutable. Even accounting for natural variation in the environment, decline of most species has closely paralleled the development of the basin. Damage from early and ongoing development has removed substantial portions of the basin from access by salmon, altered remaining habitat, reduced the abundance of salmon and decreased the ability of surviving salmon populations to cope with natural environmental variations. Focusing only on hydropower impacts severely constrains the region's ability to reverse these trends.
3. *Ecosystem functions lost as a result of development of the Columbia River can be replaced by technological solutions to individual problems.* Level of proof: four. The best evidence against this assumption is the continuing decline of the basin's salmon populations. Despite decades of experiments with technological solutions and the expenditure of billions of dollars in recovery efforts, salmon populations remain depressed. While technology will continue to be a part of any restoration effort in the Columbia River, we recommend that the region move from a strategy of "fixing" ecosystem damage to one that places greater reliance on re-expression of the natural biological and physical processes of the Columbia River salmon-bearing ecosystem.

We also analyzed 29 specific assumptions contained in the Fish and Wildlife Program, assigned a numeric ranking to each, and provide in Chapter 3 a brief overview of the science supporting our ranking. In Chapters 4 through 10, we expand on this evidence.

GENERAL AND SPECIFIC CONCLUSIONS

As we noted above, restoration of Columbia River Basin salmon populations will require a new definition and understanding of the salmon ecosystem. Humans have transformed the Columbia River Basin from a thriving natural environment to a great hydroelectric, irrigation and transportation system, one that drives this region's economy. The human approach to salmon recovery has reflected these impressive technological accomplishments: hatcheries have attempted to replace natural productivity, flow augmentation has attempted to replace the spring freshet, barge transportation has attempted to replace inriver migration, and so on. To reverse the decline of salmon populations, we believe the region must endorse a conceptual foundation for salmon recovery, such as the one we describe in Chapter 2, and base its efforts on that foundation.

The key to salmon productivity in the future will be the degree to which normative ecosystem conditions are re-introduced into the Columbia River Basin. To accomplish this return to normative conditions, we recommend the following:

1. Recognize explicitly that salmon in the Columbia Basin exist naturally as collections of locally adapted populations organized into aggregates of core and satellite populations known as metapopulations. To increase total productivity, management decisions should nurture life history and population diversity. That diversity will require protection for the remaining core populations, and restoration and reconnection of potential core habitats at strategic areas within the basin. The Hanford Reach, the last free-flowing stretch of the Columbia, could be a model for this management approach.
2. Protect and restore freshwater habitat for all life history stages, with a focus on key Columbia River and tributary reaches and lakes. This approach would include: restoration of the spring freshet to revitalize inriver habitats; stabilization of daily fluctuations in flows to allow food webs to persist in shallow-water habitats that are important juvenile rearing areas; provision of incentives for watershed planning that emphasizes riparian and upland land-use activities to enhance instream and lake habitats; and identification of food web compositions and other key conditions that are critical for migrating juveniles in key habitats. Wherever possible, reconnect restored tributary habitats to restored mainstem habitats, particularly where remnant core populations, such as the Hanford Reach fall chinook, exist.
3. Manage stocks with a more complete understanding of migratory behavior and the limitations that migratory behavior could place on river operations. From our review, we concluded that the Columbia and Snake rivers should not be treated merely as conduits through which young salmon passively migrate to the sea. On the contrary, we learned that the young fish have ecological requirements that must be met during their downstream migration through the

mainstem habitat. Fishery managers need to better understand these needs and manage accordingly.

4. Reduce sources of mortality throughout the salmonid ecosystem, including the ocean and the estuary, as well as the rivers and tributaries of the Columbia River Basin.
5. Current and future salmon recovery measures should correspond to the normative ecosystem concept and be evaluated for their effectiveness in meeting stated objectives. For example, an approach whose goal is a normative ecosystem would highlight restoration of life history diversity, rather than more technological approaches, such as transporting fish in barges or producing them in hatcheries. Hatcheries and transportation should only be used selectively and experimentally, and they should be monitored carefully. The has attempted to replace as a whole needs an integrated ecosystem monitoring and evaluation program.
6. Recognize that estuary and ocean dynamics are important regulators of the patterns of salmon productivity. While repairing conditions in the ocean is difficult, if not impossible, some management actions can be taken to improve the productivity of salmon in these environments. For example, managers can regulate harvests to maintain viable food chains, they can set sustainable escapement targets so sufficient numbers of spawning pairs are allowed to reach upriver habitats, and they can implement hatchery protocols that allow fish populations to respond to natural fluctuations in ocean productivity. The estuary can be improved and protected through pollution abatement, enhancement of riverine flows and restoration of wetland habitats within the estuary.
7. Re-evaluate the concept of salmon reserves as a means of protecting core populations and potential core population habitat. These core populations could enable reseeding of available healthy habitat, which in turn could rebuild salmon abundance and metapopulation structure throughout the Columbia Basin. The region should consider establishing a salmon reserve in the vicinity of the confluence of the Snake and Columbia rivers, including the Hanford Reach.

IMPLEMENTATION OF NORMATIVE CONDITIONS

We recognize that what we are proposing is an ecosystem recovery that, if we are successful, will be unmatched anywhere in the world. Uncertainties remain, but those uncertainties can be addressed through innovative research and adaptive management. We are convinced that restoring normative conditions at every stage of the salmon life cycle will give this region the opportunity to accomplish the goal of restoring salmon populations in this basin. Salmon are remarkably resilient and productive in healthy habitat. If the focus of our management actions returns to the river, so that natural processes and habitat are restored, the salmon also are likely to return to the river.

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For Immediate Release

Contact:

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**FISHING AND ENVIRONMENTAL GROUPS ISSUE ULTIMATUM TO TWO AGENCIES:
SAVE SNAKE RIVER SALMON OR MEET US IN COURT - March 20, 1997**

Boise, Idaho -- Eight fishing and environmental groups from across the Columbia River Basin challenged the Bureau of Reclamation's failure to review the effects of irrigation projects on endangered Snake River salmon.

"The Bureau of Reclamation is supposed to be saving salmon, not killing them. Their foot dragging on reforms is costing this region's economy thousands of fishing jobs and millions of dollars each year. That has to end," said Glen Spain of the Pacific Coast Federation of Fishermen's Associations, the west coast's largest commercial fishermen's organization. "The Bureau has refused to consult with National Marine Fisheries Service (NMFS) about how its water projects affect salmon, in spite of the fact that consultation is required by law. With this letter we've notified them that they can either do it voluntarily or get sued. The choice is theirs."

The groups' challenge came in a "60-day notice" letter to the Bureau of Reclamation today. Under the Endangered Species Act, this 60-day notice letter must precede filing a lawsuit. The Bureau of Reclamation will have two months to comply with the law by beginning a formal consultation with the Fisheries Service. If the Bureau takes no action, the groups can then file a lawsuit.

"Right now the Administration's own legally-established flow targets for salmon migrating in the Snake and Columbia Rivers are not being met," said Todd True, one of the attorneys representing the groups. "Bureau of Reclamation reservoirs could help meet

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those flows. But neither the Bureau nor the Administration have examined how. We hope our letter spurs them to do so; if they still refuse, we will go to court."

In a second 60-day notice letter to the Federal Energy Regulatory Commission (FERC) sent today, the same groups said they would also go to court against FERC if that agency did not begin a consultation on the effects on salmon of four Idaho Power Company dams on the Snake River which are under FERC license. Even though this license has not yet expired, the ESA applies even to existing licenses.

"The federal government just doesn't have its act together when it comes to salmon recovery," said Lorri Bodi, of American Rivers. "Two years ago, the National Marine Fisheries Service announced that it needed to work with two of its sister agencies -- the Bureau of Reclamation and the Federal Energy Regulatory Commission -- to improve the river flows released from dams under their control. After two years, nothing has happened. It's a sad situation when our groups must go to court to get this dysfunctional federal family to work together to save Northwest salmon."

The groups joining the letters include the Oregon Natural Resources Council, Pacific Coast Federation of Fishermen's Associations, Trout Unlimited, Institute for Fisheries Resources, the Northwest Environmental Defense Center, the Federation of Fly Fishers, Sierra Club, and American Rivers. The groups are represented by the Sierra Club Legal Defense Fund and the Pacific Environmental Advocacy Center.

For copies of the 60-day notice letters to the Bureau of Reclamation and Federal Energy Regulatory Commission, contact Sierra Club Legal Defense Fund, (206) 343-7340. Radio actualities available 24 hours a day at (415) 627-6700 x700 or (800) 663-8642.

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Sunrise, Mt. McKinley

Ansel Adams

SIERRA CLUB LEGAL DEFENSE FUND, INC.

The Law Firm for the Environmental Movement

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March 20, 1997

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RE: Notice of Intent to Sue for Violations of the
Endangered Species Act

Dear Sirs:

On behalf of American Rivers, the Northwest Environmental Defense Center, ONRC Fund/Action, Pacific Coast Federation of Fishermen's Associations, Trout Unlimited, Institute for Fisheries Resources, the Federation of Fly Fishers, and the Sierra Club,¹ we ask that you take prompt action to correct ongoing violations of sections 7 and 9 of the Endangered Species Act (ESA), 16 U.S.C. §§ 1536 and 1538.

¹ A list of these groups addresses is attached to this letter.



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As discussed below, the Bureau of Reclamation (BoR) is violating the ESA by proceeding with reservoir and water management actions which may affect listed salmon in the Columbia and Snake Rivers without complying with section 7's consultation requirements, and by signing an agreement with Idaho Power to limit Snake River flows without consulting with the National Marine Fisheries Service (NMFS) pursuant to section 7. Further, these actions have resulted, and will continue to result, in takings of listed salmonids. Since BoR has neither sought nor received a permit to incidentally take salmon which covers these actions, the agency is violating section 9 of the ESA.

This letter serves to inform you that unless BoR initiates consultation with the NMFS regarding hydroelectric project operations on the Snake River, we will file suit against BoR and you in your official capacities as representatives of BoR to enforce the consultation provisions of § 1536 and the take requirements of § 1538. We intend to file this action pursuant to section 11(g)(1) of the ESA, 16 U.S.C. § 1540(g)(1).

Listed Snake River stocks face severe threats to their very existence. Accordingly, it is imperative that BoR immediately correct these violations of the ESA.

I. MEASURES TO INCREASE FLOWS IN THE SNAKE AND COLUMBIA RIVERS ARE CRUCIAL TO SURVIVAL OF LISTED SALMON

Adequate flows in the Columbia and Snake Rivers are crucial to the survival and recovery of Snake River salmon. NMFS included water quantity among the features essential to the conservation of listed salmonids in its designations of critical habitat for Snake River salmon, and explicitly noted that the special management considerations necessary to protect the constituent elements of this critical habitat could implicate federal agency actions which take place outside the geographical area currently occupied by these fish. See 58 Fed. Reg. at 68,545. Additionally, in its 1995 Biological Opinion ("BiOp") on operations of the Federal Columbia River Power System (FCRPS), NMFS identified specific flow objectives for both the Columbia and Snake Rivers. The agency termed these flow objectives the

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"minimum necessary to avoid high salmon mortality." BiOp Flow Appendix at 9-13.. NMFS also has identified specific actions necessary to help secure these flows. It called for a halt to a practice known as "water spreading," a term for illegal diversion and use of water from BoR projects. See Draft Snake River Salmon Recovery Plan at V-2-26. NMFS also has identified as "essential" the release of additional water volumes for flow augmentation from the upper Snake River,² above and beyond the current flow augmentation volume of 427,000 acre-feet. See BiOp at 100.

Within the Snake River system, BoR controls a series of reservoirs in Wyoming, Oregon, and Idaho with storage capacity of more than 6.5 million acre-feet.³ These water storage and diversion projects have space under contract to local irrigators as well as uncontracted space. Management actions by BoR, including water deliveries, management of uncontracted space, and other project management decisions have a significant influence on flow of the Snake River itself and thus affect listed salmon.

BoR also controls substantial storage within the Columbia River system. While operation of Grand Coulee dam and Lake Roosevelt for hydropower purposes has been the subject of section 7 consultation, BoR has never consulted with NMFS on water deliveries and other water management practices for irrigation and other non-power purposes from its projects in the Columbia River and its tributaries. These actions by BoR, together with similar actions described above for the Snake River system, directly affect the flow of the Columbia River itself, and therefore affect listed salmon.

² For purposes of this letter, the term "upper Snake River" refers to the Snake River and its tributaries above the Hell's Canyon dam complex.

³ For a list and description of Bureau storage and diversion projects within the upper Snake River Basin, see the annual report of the Columbia River Water Management Group, of which BoR is a member; see also Report of the Snake River Basin Water Committee (1994), prepared by Bookman-Edmonston Engineering under a contract from the Bonneville Power Administration.

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Finally, BoR continues to deliver federal water to users within the Columbia and Snake Basins which by law are not authorized to receive this water. The term "federal water" includes water developed under BoR projects or water diverted or delivered through BoR facilities. The agency has continued to allow this illegal water use, known as "water spreading," to occur by either delivering or allowing contractors to deliver water to users which BoR knows to be ineligible for federal water; and by failing to act to even identify users currently receiving federal water who are, in fact, not authorized to do so. Illegal use of federal water adversely affects both the quantity and quality of flows in the Columbia and Snake Rivers and their tributaries.

Finally, in June 1996, BoR signed an agreement with Idaho Power which also has a significant effect on flows in the Snake River and, consequently adversely affects listed salmon. BoR promised to coordinate and shape water releases from its projects in the upper Snake Basin through 1999 so that under most circumstances the Snake River's flow at Milner will not exceed 1.5 kcfs. This flow cap limits efforts to augment Snake River flows in the Spring and Summer to benefit salmon by increasing water releases above Milner.

II. THE BUREAU OF RECLAMATION IS VIOLATING THE ESA BY FAILING TO CONSULT WITH NMFS ON ITS WATER MANAGEMENT ACTIONS WHICH AFFECT FLOWS IN THE COLUMBIA AND SNAKE RIVERS, AND BY TAKING LISTED SALMON WITHOUT AUTHORIZATION

Section 7 of the ESA establishes an interagency consultation process to assist federal agencies in complying with their duty to ensure against jeopardy to listed species or destruction or adverse modification of critical habitat. An agency must initiate consultation whenever it takes an action which "may affect" a listed species. Regulations implementing section 7 broadly define the scope of agency actions subject to consultation. See 50 C.F.R. § 402.02 (definition of "action"). Further, the Ninth Circuit Court of Appeals has construed this term to include ongoing agency actions when the federal agency retains discretion over how an action proceeds.

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The actions of BoR described above trigger section 7's consultation requirement. The agency's water delivery and project management decisions constitute ongoing federal agency actions; BoR's recent decision to enter into the flow limitation agreement with Idaho Power also falls within the definition of an action subject to consultation. See NRDC v. Patterson, No. S-88-1658-LKK, Remedial Order (E.D. Cal. Jan. 16, 1997); see also Sierra Club v. Babbitt, 65 F.3d 1502, 1508 (9th Cir. 1995). All of these BoR activities directly affect the quantity, quality, and timing of flows in the Columbia and Snake Rivers and their tributaries, and therefore may affect salmon listed under the ESA.

None of the actions described above have been the subject of section 7 consultation. In a biological opinion released in March 1995, the National Marine Fisheries Service (NMFS) considered pursuant to section 7 operations of the Federal Columbia River Power System (FCRPS). That consultation, to which BoR was a party, included as part of the proposed action provision of 427,000 acre-feet from the upper Snake to augment flows in the Snake River. See 1995 FCRPS BiOp at 15; 1994-1998 FCRPS BiOp at 6-7. However, the consultation did not address BoR management of over 6.5 maf of storage on the upper Snake, nor did it address BoR's continued actions and inactions which allow water spreading to continue. Accordingly, BoR currently is in violation of its duties under section 7 of the ESA.

BoR is also violating ESA section 9. This section prohibits takings of threatened and endangered species, either directly or through habitat modification that kills or injures listed species by significantly impairing essential behavioral patterns. See 6 U.S.C. § 1538; 50 C.F.R. § 17.31. Through the actions and omissions discussed above, which have contributed to flow levels below the minimum necessary to avoid high salmon mortality, BoR's regulation and management of its storage and diversion projects has killed and injured listed salmonids. See Strahan v. Coxe, 939 F. Supp. 963, 983-86 (D. Mass. 1996); Defenders of Wildlife v. EPA, 822 F.2d 1294 (8th Cir. 1989). BoR has not obtained authorization to incidentally take listed salmon through

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management and operation of its upper Snake projects or its activities related to water spreading. Therefore, the agency has violated and continues to violate ESA section 9.

III. CONCLUSION

BoR is currently violating both section 7 and section 9 of the ESA in the manner described above. The agency should immediately act to remedy this situation by initiating section 7 consultation with NMFS on all of its actions that may affect listed salmon including, but not limited to, those outlined in this letter. Prior to completing these consultations, BoR should act to minimize the taking of listed species, as well as refrain from taking actions which have the effect of foreclosing potential reasonable and prudent alternatives.

In particular, short-term actions by BoR should, at a bare minimum, focus on meeting the Snake and Columbia River flow objectives identified by NMFS in its 1995 FCRPS BiOp throughout the salmon migration season on a daily basis, and such other actions as may be necessary to adequately protect the listed species.

The organizations listed on this notice letter are united in their concern for taking immediate actions to restore Columbia Basin salmonid populations for aesthetic, cultural, economic, and sport reasons. According to expert agencies such as NMFS, flow augmentation efforts currently constitute an important short-term measure to benefit salmon. However, other salmon recovery strategies such as reservoir drawdowns may be able to at least partially obviate the need for flow augmentation; federal agencies should move as quickly as possible to explore and implement those salmon recovery measures which will achieve the greatest possible benefits to fish with the least impact to other users of the Columbia and Snake Rivers' water resources.

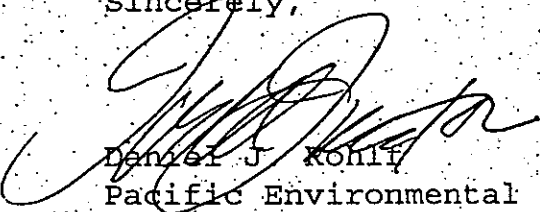
We sincerely hope that BoR will act to conform its actions to those required under the ESA. If the agency does not take prompt measures to remedy its current violations, however, we intend to seek relief through legal action. This letter serves

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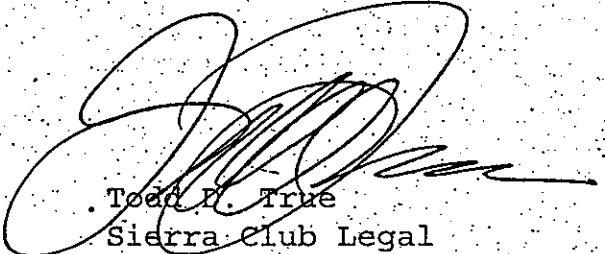
Page 7

as the statutorily required notice of such a suit should one become necessary.

Sincerely,



Daniel J. Rohlf
Pacific Environmental
Advocacy Center



Todd D. True
Sierra Club Legal
Defense Fund, Inc.

cc: Fred Disheroon
Sam Rauch

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Pacific Coast Federation of
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March 20, 1997

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RE: Notice of Intent to Sue for Violations of the
Endangered Species Act

Dear Sirs and Madame:

On behalf of American Rivers, the Northwest Environmental Defense Center, CNRC Fund/Action, Pacific Coast Federation of Fishermen's Associations, Trout Unlimited, Institute for Fisheries Resources, the Federation of Fly Fishers, and the Sierra Club,¹ we ask that you take prompt action to correct ongoing violations of Sections 7 and 9 of the Endangered Species Act (ESA), 16 U.S.C. §§ 1536, 1538. As detailed below, the

¹ A list of these groups addresses is attached to this letter.



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Page 2

Federal Energy Regulatory Commission (FERC) is violating the ESA by proceeding with activities that may affect endangered Snake River salmon without adequate compliance with section 7's consultation requirements. Further, these actions have resulted and will continue to result in the taking of listed salmonids in violation of section 9. It is imperative that FERC immediately correct these deficiencies.

This letter serves to inform you that unless FERC initiates consultation with the National Marine Fisheries Service (NMFS) regarding hydroelectric project operations on the Snake River, we will file suit against FERC and you in your official capacities as representatives of FERC to enforce the consultation provisions of § 1536 and the take requirements of § 1538. We intend to file this action pursuant to section 11(g)(1) of the ESA, 16 U.S.C. § 1540(g)(1).

I. FERC'S FAILURE TO COMPLY WITH § 7 OF THE ESA THREATENS LISTED COLUMBIA AND SNAKE RIVER SALMONIDS.

Adequate flows and temperatures in the Columbia and Snake Rivers are crucial to the survival and recovery of the Snake River salmon. When designating critical habitat for listed salmon, the National Marine Fisheries Service (NMFS) specifically included water quality, quantity, temperature, and velocity among the features essential to the conservation of listed salmon. See, e.g., National Marine Fisheries Service, Final Rule, Designated Critical Habitat; Snake River Sockeye Salmon, Snake River Spring/Summer Chinook Salmon, and Snake River Fall Chinook Salmon, 58 Fed. Reg. 68543, 68545 (December 28, 1995). In its 1995 Biological Opinion on Operations of the Federal Columbia River Power System (FCRPS), NMFS identified reduced flows in the Columbia and Snake Rivers as a key factor in the decline of listed Snake River salmon and identified flow targets for the Columbia and Snake Rivers necessary to protect these listed species. See National Marine Fisheries Service, U.S. Dep't of Commerce, Biological Opinion: Reinitiation of Consultation on 1994-1998 Operation of the Federal Columbia River Power System Operations and Juvenile Transportation Program in 1995 and Future Years 38 (March 1995) [hereinafter, 1995 Biological Opinion].

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Low flows contribute to the mortality of the listed species by increasing juvenile migration times and thus exposing juvenile salmon to predation, higher temperatures, and water quality problems for longer periods. Id. In the incidental take statement of the 1995 Biological Opinion, NMFS identified 58°F as the maximum optimum temperature for chinook and sockeye salmon and called for temperature controls to decrease water temperatures to reduce stress and increase passage and spawning success of the listed species. Id. at 165.

Despite these facts, FERC has taken no steps to initiate consultation, let alone completed consultation, on the effects of hydroelectric projects on the lower Snake River licensed by FERC (the "Hells Canyon Complex"). This inaction threatens the very existence of the endangered Snake River salmon. Information compiled by NMFS already indicates that the Hells Canyon Complex has had and continues to have an adverse effect on listed Snake River salmon. Indeed, NMFS has identified FERC's regulation of the Hells Canyon Complex as an activity which specifically affects the essential habitat features of listed salmonids and would require consultation with NMFS under § 7 of the ESA. 58 Fed. Reg. at 68545. The major adverse effects from the Hells Canyon Complex are two-fold: (1) construction and continued existence of the Hells Canyon Complex has destroyed all salmon habitat above the complex; and (2) the operation of the Hells Canyon Complex has adversely affected necessary water flows and temperatures for the listed salmon.

The construction and operation of the Hells Canyon Complex has substantially reduced the abundance of listed Snake River salmon. The Northwest Power Planning Council (NWPPC) attributed eighty percent of the annual salmon and steelhead production loss in the Columbia River Basin to hydropower development and operation. See National Marine Fisheries Service, Factors for Decline: A Supplement to the Notice of Determination for Snake River Spring/Summer Chinook Salmon under the Endangered Species Act 7 (June 1991) [hereinafter Spring/Summer Chinook Supplement]; National Marine Fisheries Service, Factors for Decline: A Supplement to the Notice of Determination for Snake River Fall Chinook Salmon under the Endangered Species Act 3 (June 1991).

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[hereinafter Fall Chinook Supplement]. NMFS attributes approximately fifty percent of this loss to habitat destruction caused by Chief Joseph and Hells Canyon Dams in the upper Columbia and Snake Rivers, respectively. Spring/Summer Chinook Supplement at 7; Fall Chinook Supplement at 3. Although NMFS identified the area above the Hells Canyon Complex as critical habitat for the Snake River Fall Chinook, 58 Fed. Reg. at 68546, the Hells Canyon Complex cuts off more than eighty percent of the Snake River Fall Chinook salmon's spawning and rearing habitat. Fall Chinook Supplement at 24-25. The Hells Canyon Complex has destroyed historically important habitat for the listed Snake River salmon and this habitat destruction has contributed significantly to the overall fish losses in the Basin.

In addition, the operation of water releases from the Hells Canyon Complex is having a detrimental effect on listed salmon species. Water storage associated with the Hells Canyon Complex has decreased water availability, altered the timing of peak migration flows, and produced inadequate water velocities with which to move juvenile migrants down river. Spring/Summer Chinook Supplement at 10-16; Fall Chinook Supplement at 10-12. All of these activities result in losses to the listed Snake River salmon. Decreased water availability also increases listed salmon mortality associated with polluted waters, predation, high water temperatures, and dewatering of spawning areas. See, e.g., Spring/Summer Chinook Supplement at 16, 30-31; Fall Chinook Supplement at 7, 12.

Although the current FERC license for the Hells Canyon Complex requires a minimum flow of not less than 5,000 cubic feet per second (cfs) below the Hells Canyon Dam, the U.S. Fish and Wildlife Service has shown that flow level to be inadequate to meet the needs of listed salmon. Fall Chinook Supplement at 25 (citing U.S. Fish and Wildlife Service, Assessment of the Effects of Altered Stream Flow Characteristics on Fish and Wildlife; Part A: Rocky Mountains and the Pacific Northwest, No. 14-16-0008-956 FWS (1976)). In the 1995 Biological Opinion's Incidental Take Statement, NMFS stated that high temperatures are frequently encountered during migrations, exceeding state water quality standards in July and August. 1995 Biological Opinion at 165.

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Although NMFS states that the optimum water temperatures for the listed species is 58F, this temperatures is routinely surpassed and has reached almost as high as 72F, a lethal temperature for salmon. See DART Web Homepage (providing Corps temperature monitoring data for Lower Granite). NMFS identified the Hells Canyon Complex as a specific cause of lethal water temperatures for listed salmon and called for FERC to consult with NMFS on this matter. BiOp at 165.

Furthermore, flood control operations at Brownlee, one of the three Hells Canyon Complex dams, and water allocation contracts between Idaho Power Company (IPC) and federal agencies significantly alter the timing of peak migration flows and conflict with efforts to protect the listed salmon. Flood control constraints at Brownlee require that at least 500 thousand acre feet (kaf) of storage be available by the end of February. Thus, prior to the migration period, IPC drafts water that could be used to aid listed salmon migration. Fall Chinook Supplement at 11. Furthermore, to accommodate IPC's summer peaking load, an IPC-Bonneville Power Administration contract requires the refilling of Brownlee reservoir by September. See Contract between Mark W. Maher, Manager, Bonneville Power Administration, and James Collingwood, General Manager, Idaho Power Company (July 5, 1996). High flows during the fall chinook salmon spawning period (October to December) encourage the salmon to spawn at high river surface elevations which can result in the dewatering of eggs and the stranding of juveniles when IPC reduces the flows in the spring. See Fall Chinook Supplement at 12, 32. The drop in flow also decreases the survival of spring/summer chinook salmon migrants because the low flow coincides with the juvenile migration down river. Spring/Summer Chinook Supplement at 44. Accommodating flood control objectives and increase hydroelectric generation in this manner have decreased the listed salmon's survival.

Finally, the current management of water in the Snake and Columbia Rivers as it relates to the Hells Canyon Complex also provides inadequate water velocities for migrating salmon. Delays in the migration travel time result in increased exposure to both disease and predation. In addition, delayed travel time

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may stop some salmon from completing their migration or may result in a salmon arriving at the ocean when the salmon is no longer best suited for seawater travel. These migration delays cause significant juvenile migrant deaths each year. See Spring/Summer Chinook Supplement at 11-12; Fall Chinook Supplement at 4-5.

In sum, the existence and operation of the Hells Canyon Complex is adversely affecting the existence of, and any chance of recovery for, the listed Snake River salmon. The Complex affects water quality, quantity, temperature, and velocity of the critical habitat established for these species. And although NMFS has identified the need for FERC to consult on these issues as they relate to the Hells Canyon Complex, this process has not occurred or even been initiated.

II. FERC HAS VIOLATED AND CONTINUES TO VIOLATE ESA §§ 7 and 9.

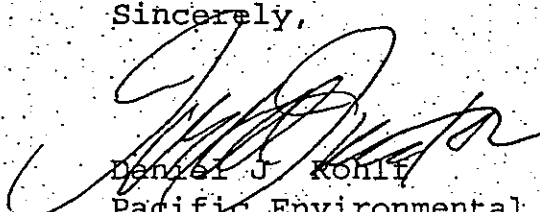
The ESA establishes specific procedures for the conservation of threatened and endangered species and the ecosystems upon which these species depend. Section 7 of the Act, 16 U.S.C. § 1536, sets forth one such procedure referred to as interagency consultation. This provision requires each federal agency to consult with the Secretary of the Interior or the Secretary of Commerce, depending on the species at issue, to "insure that any action authorized, funded, or carried out" by the federal agency (i.e. the action agency) will not likely jeopardize the continued existence of the species or result in the destruction or adverse modification of the species' critical habitat. See 50 C.F.R. 402.10(a). The regulations make clear that the action agency should initiate this consultation. 50 C.F.R. 402.10(b). In addition, the regulations define "actions" that are subject to consultation broadly: all activities or programs of any kind authorized, funded, or carried out in whole or in part by federal agencies, including actions directly or indirectly causing modifications to the land, water, or air, in which there is discretionary federal control or involvement. See 50 C.F.R. 402.02-.03.

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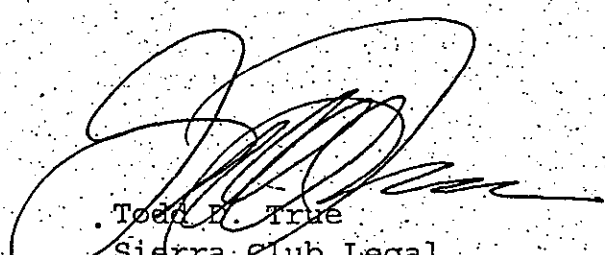
Page 7

as the statutorily required notice of such a suit should one become necessary.

Sincerely,



Daniel J. Rohlf
Pacific Environmental
Advocacy Center



Todd P. True
Sierra Club Legal
Defense Fund, Inc.

cc: Fred Disheroon
Sam Rauch

LIST OF CONCERNED GROUPS

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Institute for Fisheries Resources
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Sierra Club
Columbia Basin Field Office
Route 2, Box 303-A
Pullman, WA 98163



Sunrise, Mt. McKinley

Ansel Adams

SIERRA CLUB LEGAL DEFENSE FUND, INC.

The Law Firm for the Environmental Movement

203 Hoge Building, 705 Second Avenue, Seattle, WA 98104-1711

(206) 343-7340 FAX (206) 343-1526

March 20, 1997

VIA CERTIFIED MAIL

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Federal Energy Regulatory
Commission
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Portland, Oregon 97204

Chair
Federal Energy Regulatory
Commission
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Washington, D.C. 20426

William M. Daley
Secretary of Commerce
Department of Commerce
14th St. & Constitution Ave., NW
Washington, D.C. 20230

Rolland A. Schmitt
Asst. Admin. for Fisheries
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910

William Stelle
Regional Administrator
National Marine Fisheries Service
7600 Sand Point Way, NE
BIN C15700, Bldg. 1
Seattle, WA 98115-0070

RE: Notice of Intent to Sue for Violations of the
Endangered Species Act

Dear Sirs and Madame:

On behalf of American Rivers, the Northwest Environmental Defense Center, CNRC Fund/Action, Pacific Coast Federation of Fishermen's Associations, Trout Unlimited, Institute for Fisheries Resources, the Federation of Fly Fishers, and the Sierra Club,¹ we ask that you take prompt action to correct ongoing violations of Sections 7 and 9 of the Endangered Species Act (ESA), 16 U.S.C. §§ 1536, 1538. As detailed below, the

¹ A list of these groups addresses is attached to this letter.



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Federal Energy Regulatory Commission (FERC) is violating the ESA by proceeding with activities that may affect endangered Snake River salmon without adequate compliance with section 7's consultation requirements. Further, these actions have resulted and will continue to result in the taking of listed salmonids in violation of section 9. It is imperative that FERC immediately correct these deficiencies.

This letter serves to inform you that unless FERC initiates consultation with the National Marine Fisheries Service (NMFS) regarding hydroelectric project operations on the Snake River, we will file suit against FERC and you in your official capacities as representatives of FERC to enforce the consultation provisions of § 1536 and the take requirements of § 1538. We intend to file this action pursuant to section 11(g)(1) of the ESA, 16 U.S.C. § 1540(g)(1).

I. FERC'S FAILURE TO COMPLY WITH § 7 OF THE ESA THREATENS LISTED COLUMBIA AND SNAKE RIVER SALMONIDS.

Adequate flows and temperatures in the Columbia and Snake Rivers are crucial to the survival and recovery of the Snake River salmon. When designating critical habitat for listed salmon, the National Marine Fisheries Service (NMFS) specifically included water quality, quantity, temperature, and velocity among the features essential to the conservation of listed salmon. See, e.g., National Marine Fisheries Service, Final Rule, Designated Critical Habitat; Snake River Sockeye Salmon, Snake River Spring/Summer Chinook Salmon, and Snake River Fall Chinook Salmon, 58 Fed. Reg. 68543, 68545 (December 28, 1995). In its 1995 Biological Opinion on Operations of the Federal Columbia River Power System (FCRPS), NMFS identified reduced flows in the Columbia and Snake Rivers as a key factor in the decline of listed Snake River salmon and identified flow targets for the Columbia and Snake Rivers necessary to protect these listed species. See National Marine Fisheries Service, U.S. Dep't of Commerce, Biological Opinion: Reinitiation of Consultation on 1994-1998 Operation of the Federal Columbia River Power System Operations and Juvenile Transportation Program in 1995 and Future Years 38 (March 1995) [hereinafter, 1995 Biological Opinion].

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Low flows contribute to the mortality of the listed species by increasing juvenile migration times and thus exposing juvenile salmon to predation, higher temperatures, and water quality problems for longer periods. Id. In the incidental take statement of the 1995 Biological Opinion, NMFS identified 58F as the maximum optimum temperature for chinook and sockeye salmon and called for temperature controls to decrease water temperatures to reduce stress and increase passage and spawning success of the listed species. Id. at 165.

Despite these facts, FERC has taken no steps to initiate consultation, let alone completed consultation, on the effects of hydroelectric projects on the lower Snake River licensed by FERC (the "Hells Canyon Complex"). This inaction threatens the very existence of the endangered Snake River salmon. Information compiled by NMFS already indicates that the Hells Canyon Complex has had and continues to have an adverse effect on listed Snake River salmon. Indeed, NMFS has identified FERC's regulation of the Hells Canyon Complex as an activity which specifically affects the essential habitat features of listed salmonids and would require consultation with NMFS under § 7 of the ESA. 58 Fed. Reg. at 68545. The major adverse effects from the Hells Canyon Complex are two-fold: (1) construction and continued existence of the Hells Canyon Complex has destroyed all salmon habitat above the complex; and (2) the operation of the Hells Canyon Complex has adversely affected necessary water flows and temperatures for the listed salmon.

The construction and operation of the Hells Canyon Complex has substantially reduced the abundance of listed Snake River salmon. The Northwest Power Planning Council (NWPPC) attributed eighty percent of the annual salmon and steelhead production loss in the Columbia River Basin to hydropower development and operation. See National Marine Fisheries Service, Factors for Decline: A Supplement to the Notice of Determination for Snake River Spring/Summer Chinook Salmon under the Endangered Species Act 7 (June 1991) [hereinafter Spring/Summer Chinook Supplement]; National Marine Fisheries Service, Factors for Decline: A Supplement to the Notice of Determination for Snake River Fall Chinook Salmon under the Endangered Species Act 3 (June 1991).

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In sum, the existence and operation of the Hells Canyon Complex is adversely affecting the existence of, and any chance of recovery for, the listed Snake River salmon. The Complex affects water quality, quantity, temperature, and velocity of the critical habitat established for these species. And although NMFS has identified the need for FERC to consult on these issues as they relate to the Hells Canyon Complex, this process has not occurred or even been initiated.

II. FERC HAS VIOLATED AND CONTINUES TO VIOLATE ESA §§ 7 and 9.

The ESA establishes specific procedures for the conservation of threatened and endangered species and the ecosystems upon which these species depend. Section 7 of the Act, 16 U.S.C. § 1536, sets forth one such procedure referred to as interagency consultation. This provision requires each federal agency to consult with the Secretary of the Interior or the Secretary of Commerce, depending on the species at issue, to "insure that any action authorized, funded, or carried out" by the federal agency (i.e. the action agency) will not likely jeopardize the continued existence of the species or result in the destruction or adverse modification of the species' critical habitat. See 50 C.F.R. 402.10(a). The regulations make clear that the action agency should initiate this consultation. 50 C.F.R. 402.10(b). In addition, the regulations define "actions" that are subject to consultation broadly: all activities or programs of any kind authorized, funded, or carried out in whole or in part by federal agencies, including actions directly or indirectly causing modifications to the land, water, or air, in which there is discretionary federal control or involvement. See 50 C.F.R. 402.02-.03.

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FERC is currently violating the ESA § 7 interagency consultation requirements. The Snake River is designated critical habitat for three endangered salmon species; FERC continues to have discretionary control and involvement with the Hells Canyon hydroelectric projects on the Snake River; and FERC has not completed consultation with the appropriate agency regarding how the continued existence and operation of the Hells Canyon projects may affect the listed species and its habitat.

The National Marine Fisheries Agency (NMFS), the agency within the Department of Commerce responsible for ESA considerations, has listed three Snake River salmon populations as endangered under the ESA: Snake River sockeye salmon, 56 Fed. Reg. 58619 (November 20, 1991); Snake River spring/summer chinook, 59 Fed. Reg. 42529 (November 2, 1994); and Snake River fall chinook salmon, 59 Fed. Reg. 42529 (November 2, 1994). On December 28, 1993, NMFS designated critical habitat for all three Snake River salmon populations. 58 Fed. Reg. 68543 (December 28, 1993). These listings and critical habitat designations triggered the consultation requirements under § 7 of the ESA.

In 1955, FERC issued the Idaho Power Company a license to operate the Hells Canyon Hydroelectric Complex. 14 F.P.C. 55 (issued August 4, 1955). This project consists of three dams, Hells Canyon, Oxbow, and Brownlee, along the lower portion of the Snake River. As part of the hydroelectric project license, FERC inserted a reopener provision which allows FERC to require additional modifications at the project as necessary to protect "fish life." See Id., Article 35. FERC may prescribe these project modifications upon its own initiative or upon the recommendation of the Secretary of Interior or the conservation agencies of the States of Idaho and Oregon. Id.

By issuing Idaho Power the license, FERC authorized the hydroelectric operations at the Hells Canyon Complex. Moreover, FERC's authorization of the Hells Canyon Complex is an on-going agency action under the ESA because FERC retained discretionary control over the project, most obviously by including the reopener clause in the license. This clause allows FERC to modify operations at the Hells Canyon Complex to protect fish

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resources. FERC's insertion of reopener clauses in licenses is not a mere formality. FERC has used its discretionary control in reopener clauses and the courts have sustained this use. See, e.g., Department of Interior v. FERC, 952 F.2d 538, 546-48 (D.C. Cir. 1992); LaFlamme v. FERC, 945 F.2d 1124, 1130 (9th Cir. 1991); Pacific Gas & Electric Co. v. FERC, 720 F.2d 78, 83-84 (D.C. Cir. 1983); California v. Federal Power Commission, 345 F.2d 917, 921-25 (9th Cir. 1965).

Under these circumstances, the consultation requirement of the ESA has been triggered for the Hells Canyon Complex FERC license. The Hells Canyon Complex's FERC hydroelectric license is an on-going federal action. This on-going federal action, coupled with the endangered species listings and critical habitat designation, requires FERC to consult with NMFS regarding the effects the Hells Canyon Complex may have on the endangered Snake River salmon and their habitat. The courts have upheld section 7 consultation requirements for similar ongoing federal actions. See, e.g., Pacific Rivers Council v. Thomas, 30 F.3d 1050 (9th Cir. 1994) (holding that a Forest Service land resource management plan is an on-going action for purposes of the ESA section 7 consultation requirements). In the 1995 Biological Opinion, NMFS acknowledged FERC's authority over the Hells Canyon Complex and indicated the need for a consultation with FERC. Biological Opinion at 101. Additionally, NMFS specifically identified the Hells Canyon Complex as a federally regulated activity which might affect the essential habitat requirements of the listed Snake River salmon and put FERC on notice that consultation with NMFS would be appropriate. 58 Fed. Reg. at 68545.

In addition, section 9 of the ESA prohibits FERC from licensing activities that will take an endangered species. See, e.g., Strahan v. Coxe, 939 F.Supp. 963, 983-86 (D. Mass. 1996) (state licensing of fishing activities that harmed listed species caused prohibited take under section 9); see also Defenders of Wildlife v. EPA, 882 F.2d 1294 (8th Cir. 1989) (EPA registration of pesticides caused prohibited take). FERC's failure to exercise its licensing authority to avoid taking listed Snake River salmon violates section 9.

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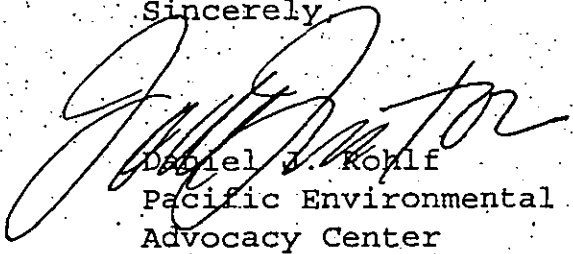
III. CONCLUSION

The Hells Canyon Complex is currently adversely affecting the listed salmon species in the Snake River. NMFS's listing of the salmon species under the ESA triggered FERC's obligation to consult with NMFS regarding any action over which FERC has discretionary authority and to avoid taking the species.

FERC is currently violating the ESA by not initiating section 7 consultation with NMFS and by continuing to allow operations that take listed salmon. On behalf of the organizations identified in this letter, we request that FERC immediately initiate consultation with NMFS to remedy these violations of the ESA. Prior to finalizing consultation with NMFS, FERC should curb its actions to minimize the likelihood of jeopardy to or further takings of listed salmon. At a minimum, such actions should include requiring the Hells Canyon Complex licensee to provide flows which are: (1) at least sufficient to meet the flow levels called for by the 1995 Biological Opinion on the Operation of the Federal Columbia River Power System; and (2) adequate to maintain temperatures at protective levels for fish. If prompt action is not taken, we intend to seek relief in Court.

We certainly hope that FERC will conform its action to the requirements of the ESA without the need for litigation. Should you wish to discuss this matter prior to the filing of the complaint, please feel free to contact either of us.

Sincerely



Daniel J. Rohlf
Pacific Environmental
Advocacy Center



Todd D. True
Sierra Club Legal
Defense Fund, Inc.

cc: Fred Disheroon
Sam Rauch

LIST OF CONCERNED GROUPS

American Rivers
Northwest Regional Office
400 E. Pine Street, #225
Seattle, WA 98105

Northwest Environmental Defense Center
10015 S.W. Terwilliger Blvd.
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Oregon Natural Resources Council
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Pacific Coast Federation of
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Institute for Fisheries Resources
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Federation of Fly Fishers
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RECEIVED

APR 26 1997

**NATIVE AMERICAN
RIGHTS FUND**

JAMES L. BUCHAL

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Direct Fax (503)-226-3910

March 25, 1997

**CERTIFIED MAIL
RETURN RECEIPT REQUESTED**

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Secretary of Commerce
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Washington, D.C. 20240

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Secretary of the Army
The Pentagon
Room 3E 700
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William Stelle, Jr.
Northwest Regional Director
National Marine Fisheries Service
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Bruce Babbitt
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U.S. Department of Interior
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Brigadier General Robert Griffin
Division Commander
North Pacific Division
U.S. Army Corps of Engineers
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Randall Hardy
Administrator
Bonneville Power Administration
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Portland, OR 97208

John W. Keys, III
Regional Director
Bureau of Reclamation
Federal Building & U.S. Courthouse
500 West Fort Street
Boise, ID 83724

Dear Sirs:

This notice is written on behalf of the Columbia River Alliance (CRA) and its members to provide sixty days' notice of intent to sue the Secretary of the U.S. Department of Commerce, the National Marine Fisheries Service (NMFS) and its Northwest Regional Director, William Stelle, Jr.; the Secretary of the U.S. Department of

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Interior, the U.S. Bureau of Reclamation ("the Bureau") and its Regional Director, John Keys III; the Secretary of the Army and Brigadier General Robert Griffin of the U.S. Army Corps of Engineers ("the Corps"); and the Bonneville Power Administration (BPA) and its Administrator, Randall Hardy. The Corps, the Bureau and BPA are referred to herein as "the action agencies."

Through their preparation, adoption, and implementation of the March 2, 1995 Biological Opinion on Operations of the Federal Columbia River Power System, issued by NMFS, (the "BiOp"), these agencies and individuals are in violation of several provisions of the Endangered Species Act and other authorities, as outlined below. The violations are also embodied in the March 10, 1995 Records of Decision issued by BPA, the Corps and the Bureau, and in BiOp decisionmaking through meetings of the Technical Management Team, the Implementation Team, and Executive Committee, as well as more informal decisionmaking.

This notice incorporates by reference prior notices of intent to sue issued by the CRA member Direct Service Industries (DSIs) on May 5, 1995 and April 19, 1994.¹ Further details concerning the nature of the violations are set forth in the post-judgment submissions of CRA members in *IDFG v. NMFS*, No. 93-1603-MA (D. Or.), and particularly the motion to hold the federal defendants in contempt of court, filed April 21, 1995, and supporting materials, which outline at length how the recipients of this letter have ignored dozens of scientific studies submitted by CRA members to promote the use of the best scientific and commercial data to promote endangered salmon recovery in the Columbia Basin. Further details concerning the nature of the violations are also set forth in CRA's memorandum in opposition to motions for summary judgment, filed February 10, 1997, in *American Rivers v. NMFS*, No. 96-384 (D. Or.), which outlines in greater detail how the recipients of this letter have misconstrued the Endangered Species Act in the course of developing and implementing the BiOp. These materials are also incorporated by reference.

The Interests of CRA and Its Members in Endangered Salmon Decisionmaking

Since its formation in 1991, CRA has sought to promote an approach to the protection and recovery of endangered Snake River salmon, and Columbia Basin fish and wildlife generally, that is founded upon measures supported by sound scientific evidence, and which make sense as a practical matter. CRA has sought to avoid what the Supreme Court recently characterized as "needless economic dislocation produced by agency officials zealously but unintelligently pursuing their environmental objectives." *Bennett v. Spear*, No. 95-813 (Mar. 19, 1997).

¹ CRA does not incorporate the April 19, 1994 challenges to operations of the Idaho Department of Water Resources and its Director, or to the Idaho Water Resource Board and its members.

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CRA's members have suffered concrete and irreparable injury as a result of overzealous and unintelligent salmon decisionmaking. CRA members with interests in irrigation are faced with moratoriums on increased water withdrawals from the Columbia and Snake Rivers. Maintenance and replacement of irrigation facilities is now subject to extensive regulation by NMFS and the action agencies. The threats of further irrigation restrictions have placed a cloud upon farm values, and impaired property transfers and other business relationships. CRA's members with interests in Columbia and Snake River navigation are threatened with extinction from ill-conceived plans to "draw down" Columbia and Snake River reservoirs. Ports along the Snake and Columbia River are threatened with reduced revenues and economic development. CRA's members with interests in efficient and economical hydropower production have already experienced increased electricity costs and power outages from restrictions on the production of hydropower. As a result of the BiOp and its predecessors, federal agencies have increased salmon spending from less than \$100 million per year to \$435 million per year with no tangible benefits for salmon.

If protection of anadromous fish populations proceeded through application of the best scientific data, none of these injuries would be required in the service of healthy fish and wildlife populations. As Idaho salmon activist Ed Chaney once acknowledged, if dams were "properly designed", "fish passage would divert a small fraction, perhaps one percent, of the average annual flow of the Columbia River." Instead, federal, state and tribal authorities have misused the Endangered Species Act as a tool to pursue radical, back-to-nature political objectives, and to assert operational control over, and extract funding from, the Federal Columbia River Power System.

After requiring over \$3 billion in funding for operational changes, research, and mitigation, fishery managers are unable to point to any measured benefits of the BiOp program and earlier flow-based salmon schemes. They are unable to measure any net increase in mortality to anadromous fish caused by dams on the Columbia and Snake Rivers. And they are now in the process of subverting technological improvements in dam passage in favor of unproven and exorbitantly expensive "natural river drawdown schemes."

FIRST CAUSE OF ACTION: FAILURE TO USE THE BEST SCIENTIFIC AND COMMERCIAL DATA AVAILABLE

A. NMFS Has Drastically Overestimated Dam Mortality, and the Action Agencies Have Acquiesced in this Hoax

In the BiOp, NMFS continues to pretend that it cannot distinguish between natural mortality, mortality that could be attributed to dam construction, and the mortality actually caused by the effect of the agency action under consideration in the BiOp: operational

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plans for the Federal Columbia River Power System. This constitutes a willful failure and refusal to examine the best scientific and commercial data available concerning the effects of dams on salmon survival.

Such evidence includes but is not limited to: (1) a comparison of salmon declines in the Snake River with other, undammed reaches; (2) studies showing no difference in survival per mile in dammed and undammed reaches on the Columbia and Snake; (3) studies showing no difference in returning adults per spawner in the Columbia River and other river systems; (4) a comparison of hatchery survival rates for Snake River and other upriver hatcheries (hatchery survival studies show no relationship between fall chinook survival and dam passage); (5) studies showing high turbine survival; and (6) studies showing extraordinary success in existing mitigation programs, including smolt transportation. Many scientists believe that most of the mortality experienced in the Columbia and Snake Rivers is mortality that would have occurred even if there were no dams in the river, yet NMFS and the action agencies pretend that all in-river mortality is caused by discretionary operational decisions of the action agencies.

Overstatement of dam effects, contrary to the best available scientific data, has also produced biased computer model runs exaggerating the effects of the action agencies' operational plans. The computer modeling in the BiOp is based on outdated model parameters, including turbine mortality, that exaggerate the effects of dam operations. NMFS also continues to rely upon the state and tribal FLUSH model despite its failure to fit real world survival data and make accurate predictions of smolt survival.

B. NMFS Has Established Flow Targets and Drawdown Plans Not Supported by the Best Scientific and Commercial Data

There is no scientific evidence that upriver reservoir releases can measurably improve the survival of migrating juvenile salmon. Instead, NMFS relies primarily on studies showing higher adult returns after cooler, wetter years, as if reservoir releases can recreate the entire constellation of natural conditions leading to survival increases. The only studies concerning the effects of flow and survival within a single year show that flow and survival are negatively correlated.

Nor is there any scientific evidence that increasing river velocity through drawdowns can measurably improve the survival of migrating juvenile salmon. Dam removal, by reducing "across-the-concrete" mortality, might assist salmon populations (assuming that dam migration obstacles cause higher mortality than natural migration obstacles), but as explained below, dam removal is not within the scope of BiOp.

NMFS has also arbitrarily failed and refused to consider the effects of its flow augmentation and drawdown schemes on adult salmon. Increases in river velocity

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disadvantage adults; decreases in river elevations also interfere with adult passage facilities. NMFS has failed to make any quantitative assessment of adverse effects on adults to balance against supposed benefits to juveniles. Since survival of adult spawners is critical to maintaining healthy salmon populations, NMFS' failure and refusal to consider adult effects is not only arbitrary and capricious, but also irresponsible.

Recently, as evidence that increasing river velocities will not assist salmon has become stronger, NMFS and other agencies have begun to refer to drawdowns as promoting a "normative river" and restoring lost mainstem spawning habitat. The "normative river" concept is based on the notion that learning about the ecology of forested streams can be applied wholesale to the mainstem Snake River, which runs through a desert and has never lined with the sort of vegetation and food sources imagined by normative river theorists. There is no scientific data to support the notion that drawdowns would restore significant spawning habitat, and considerable reason to believe that restoring mainstem spawning habitat would merely increase competition with endangered salmon stocks further upriver.

As a result of its failures to consider the best scientific evidence, NMFS has established "flow targets" that lack any basis in science. The flow targets are so unrealistic that they exceed natural, pre-dam flows in some months and are forever unachievable unless huge new projects were constructed to release upstream water. NMFS has also proposed reservoir drawdowns, up to and including "natural river drawdown" (equivalent to dam removal), that are not based on the best scientific data. NMFS officials have acknowledged that the drawdown of John Day Reservoir to Minimum Operational Pool has no tangible benefits to endangered Snake River Salmon, yet NMFS persists in demanding such a drawdown in the BiOp.

C. NMFS Has Promoted Expensive Spill Programs with no Ascertainable Benefit, and Probable Harm, to Salmon.

Since the commencement of the BiOp program to increase spill at mainstem hydroelectric projects, CRA and its members have requested that NMFS and other spill proponents demonstrate benefits from increased spill. Instead, research has confirmed that, consistent with laboratory experiments, juvenile salmonids suffer from high spill levels. In 1996, with higher spill and flow than 1995, juvenile salmon survival was significantly lower. Yet NMFS proceeds to require increased spill pursuant to the BiOp, contrary to the best scientific data. NMFS continues to call upon the Corps to install costly spill abatement facilities funded by Northwest electric ratepayers, rather than the more cost-effective step of reducing spill.

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D. NMFS and the Corps Have Reduced Transportation of Juvenile Salmon, Contrary to the Best Scientific and Commercial Data Showing Transportation Works

All available scientific research concerning the effectiveness of juvenile smolt transportation has confirmed its effectiveness. Relying upon biased critiques of those studies (rather than scientific data), NMFS and the action agencies have limited transportation at Snake River collector projects and terminated it at McNary Dam for spring migrants. These decisions, made in the BiOp itself and in in-season decisionmaking, have killed hundreds of thousands, if not millions of juvenile salmonids since implementation of the BiOp began.

In its computer modeling of dam operations, NMFS used assumptions that transportation was ineffective instead of positive data showing effectiveness. Only in one case, mischaracterized as "high" transportation survival, did NMFS use the actual measured benefits of transportation, and NMFS arbitrarily refused to model any cases actually assuming high transportation survival. NMFS is biased against transportation, and such biases violate NMFS' duty to consider, and the action agencies' duty to proceed upon, the best available scientific data.

E. NMFS Has Established Jeopardy and Recovery Goals for Endangered Snake River Salmon Unsupported by Sound Science

In the BiOp, NMFS has considered "survival thresholds" and "recovery thresholds" unsupported by sound scientific evidence. By establishing a "Biological Requirements Work Group" dominated by State and Tribal harvest interests, NMFS destroyed any possibility of a scientific approach to the population dynamics of endangered Snake River salmon. The product of this Group, arbitrary survival and recovery targets, was produced in profound ignorance of the environmental conditions that led to declines in upriver salmon stocks. NMFS ignored comments from outside reviewers that survival goals were set higher than any number supportable by good science. The best scientific and commercial evidence indicates that there is no immediate likelihood of extinction for Snake River salmon, so long as overfishing is controlled.

SECOND CAUSE OF ACTION: MISINTERPRETATION OF §§ 4 AND 7 OF THE ENDANGERED SPECIES ACT

A. NMFS and the Action Agencies Have Violated § 7 by Expanding the Scope of Analysis Beyond the Effect of Agency Action, and by Requiring Dam Operators to Offset All Causes of Salmon Mortality

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Under § 7, NMFS is required by federal regulations to assess the effect of the action proposed by federal agencies seeking consultation. Only in the event that the agency action "reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species" is the action to be held to "jeopardize the continued existence" of a listed species. 50 C.F.R. § 402.02 (defining "Jeopardize the continued existence of"). Since no one disputes that the action proposed by the action agencies increased the survival of endangered Snake River salmon, there is no way that the operational plans could be held to jeopardize the continued existence of such salmon.

In the BiOp, NMFS all but ignored this controlling regulation, instead creating—without adherence to administrative procedure required by the Administrative Procedure Act—a special jeopardy standard for dam operations. Instead of following the law, NMFS purported to examine "the effects of [i] the proposed or continuing action, [ii] the environmental baseline and any cumulative effects, and [iii] considering measures for survival and recovery in other life stages." (BiOp at 13). Steps (ii) and (iii) were illegitimate.

Step (ii) amounted to considering effects arising from the existence of the dams, without regard to operational decisions within the discretion of the action agencies. Since the action agencies do not have discretion to remove the dams, consideration of these effects was beyond the proper purview of § 7 consultations.

NMFS acknowledged that it studied not merely the effects of agency action, as required by federal regulations, but also "effects that are, *or with further authorizations and appropriations could be*, within the action agencies' discretion . . ." (BiOp at 3; emphasis added). But NMFS has no authority to recommend changes to agency operations on the basis of such other effects. In its formulation of a supposed "reasonable and prudent alternative" (RPA), NMFS did not prepare an alternative operational plan, but a long-term blueprint for structural changes at the dams, whether by way of dam removal or the construction of surface bypass/collector devices. These proposals cannot, as a matter of law, represent measures required to avoid a finding of "taking" under §§ 7 and 9 of the Endangered Species Act.

Step (iii) amounted to an arrogation of power to require dam operators to offset mortality arising in "other life stages," particularly harvest of adult salmon. NMFS has a conflict of interest—being charged to promote salmon harvest and protect salmon as endangered animals—and has sought to resolve this conflict by authorizing continuing high harvest mortality and requiring dam operators to improve survival, by whatever means, so as to offset overfishing. NMFS accomplished this by relying upon computer models to assess the combined effects of the agency action and many other actions, including overfishing. Even then, computer models showed a positive trend in endangered

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salmon populations (*see, e.g.*, BiOp at 133, 135), yet NMFS concluded that the operations proposed by the action agencies jeopardized the continued existence of Snake River salmon.

Ultimately, NMFS had no basis in science for concluding that the operational plans of the action agencies jeopardized the continued existence of Snake River salmon. NMFS should have rendered a "no jeopardy" opinion.

B. NMFS and the Action Agencies Have Violated § 7 by Implementing a "Reasonable and Prudent Alternative" that Is Neither Reasonable nor Prudent

Under the controlling Federal regulations, a "reasonable and prudent alternative" (RPA) to the proposed agency action must be "economically and technologically feasible." 50 C.F.R. § 402.02. NMFS prepared the RPA in near total ignorance of its economic costs, and had no rational basis for knowing whether or not the RPA was "economically feasible." In fact, the RPA is economically unreasonable, and wastes hundreds of millions of dollars annually for no improvement in salmon survival. Even where slight benefits might be achieved, NMFS has required spending literally hundreds of thousands of dollars per adult salmon. Yet NMFS authorizes the commercial harvest of the same salmon, an unreasonable approach to resource management. Moreover, in average or above average water years like 1995, 1996 and 1997, flow augmentation requirements in the RPA have destroyed thousands megawatts of power production in the winter to enhance spring flows, resulting in a net negative effect upon salmon.

CRA believes that the concept of cost-effectiveness is implicit in the RPA definition, and is explicit in § 4 of the Act and other authorities. CRA and other parties have proposed cost-effective measures to assist endangered salmon that NMFS and the action agencies have arbitrarily and capriciously ignored. The BiOp and RPA have released a flood of salmon spending that is poorly managed, divorced from any considerations of cost-effectiveness, and almost totally wasted. From CRA's perspective, the RPA and resulting spending have protected salmon agencies, but not salmon.

C. NMFS Has Violated § 4 by Doing Recovery Planning in the BiOp

Decisions about overall recovery planning are supposed to be made in a public process pursuant to § 4 of the act. Five years after the listing decisions, and three years after receiving the report of the Snake River Salmon Recovery Team, NMFS has yet to promulgate a recovery plan. Instead, NMFS prepared a draft recovery plan and then compared it to the action agencies' proposal, concluding that the action agencies jeopardized the continued existence of Snake River salmon in part because their proposal

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was not congruent with NMFS's proposed recovery plan. (BiOp at 14, 83) This confounded jeopardy and recovery, misconstrued § 7, and failed to implement § 4.

THIRD CAUSE OF ACTION: FAILURE TO IMPLEMENT THE BIOP PROVISIONS SUPPORTING THE SURFACE BYPASS/COLLECTOR OPTION, RESULTING IN VIOLATIONS OF §§ 7 AND 9

The BiOp calls for a decision in 1999 as to either (1) extensive drawdowns or dam removal or (2) construction of surface bypass/collector devices at the dams. To aid in making the decision, NMFS purports to require the action agencies to take a number of steps to gain information NMFS believes is required to make an informed decision between the two alternatives.

CRA and its members support the second option, and particularly continued reliance on, and refinement of, smolt transportation. Unfortunately, the Region's State and Tribal harvest managers oppose it, and have induced NMFS and the action agencies to refrain from taking the steps required to support the surface bypass/collector option.

For example, a requirement of the RPA is that the Corps

"shall investigate the application of surface collection technology at lower Snake and Columbia River projects. Testing will begin at Ice Harbor and The Dalles Dams in 1995. Prototype surface collectors should be designed and tested at Lower Granite and The Dalles Dams by June 1996. These tests should include evaluation of surface collection at powerhouses and spillways to determine the effectiveness and safety in passing juveniles." (BiOp at 118)

Yet no surface collector tests were conducted at The Dalles in 1996 and CRA believes that none will occur in 1997 as well. Limited testing at Lower Granite in 1996 has not proceeded to provide an evaluation of effectiveness, and it appears that NMFS and the Corps have capitulated to anti-surface bypass/collector pressure from the States and Tribes and limited the scope of future testing.

To the extent that requirements of the RPA are lawful, these failures constitute violations of §§ 7 and 9 of the Endangered Species Act by NMFS and the Corps. Under the federal regulations, NMFS must reinitiate consultations if the agency action is "modified in a manner that causes an effect to the listed species or critical habitat not considered in the biological opinion". 50 C.F.R. § 402.16. Because installation and testing of surface collectors "causes an effect to the listed species," NMFS must re-initiate consultations when decisions are made to defer surface collector testing.

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NMFS, the Corps, the Bureau and BPA have also failed to implement many other RPA requirements not supported by the States and Tribes, including studies of pulsing flows (BiOp at 121), studies concerning the effects of ocean and estuarine conditions, adverse effects arising from massive hatchery releases and competition from exotic species (BiOp at 120-22), prototype testing of vertical barrier screens at Little Goose and Lower Granite Dams in 1995 (BiOp at 125), installation of PIT-tag detectors "not later than 1997 at John Day Dam" and "interim PIT-tag detectors at Bonneville Dam by spring 1997" (BiOp at 126), and purchases of "a minimum of two new barges in 1997" (BiOp at 127). The failure to install downstream PIT-tag detectors is particularly egregious, in that until such detectors are installed, NMFS and the action agencies have no competent means of measuring changes in juvenile survival resulting from the steps taken pursuant to the BiOp or otherwise. To the extent that these measures may lawfully be included in the RPA, failure to implement them violates §§ 7 and 9 of the Endangered Species Act.

* * *

This letter identifies only violations of the Endangered Species Act. It is worth noting that by accepting NMFS' recommendations in the BiOp, the Corps has violated many of its own regulations (*e.g.*, ER 1105-2-100) designed to ensure that mitigation planning for fish and wildlife proceeds in a rational, cost-effective manner. The Corps has violated the statutes requiring it to preserve multiple uses for federal water projects, particularly Dworshak Reservoir. BPA has violated statutes requiring it to balance fish and wildlife needs with the interests of economical power production. The Bureau has violated its statutory duties toward irrigators and others.

If you desire any further explanation concerning the nature of these claims, please do not hesitate to contact us.

Sincerely,



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Federal Agencies Announce Release of Interior Columbia River Basin Draft Environmental Impact Statements

BOISE, IDAHO; MISSOULA, MONTANA; SPOKANE, WASHINGTON; PORTLAND, OREGON -- April 23, 1997 -- Federal officials in the Pacific Northwest today revealed a draft preferred strategy for the management of more than 72 million acres of Forest Service- and Bureau of Land Management (BLM)-administered land in the Interior Columbia River Basin and portions of the Klamath and Great Basins. They announced the Eastside and the Upper Columbia River Basin Draft Environmental Impact Statements (EISs), one covering eastern Oregon and eastern Washington, and the other covering much of Idaho, western Montana, northern Nevada, and parts of Utah and Wyoming. The "preferred alternative" was identified among seven alternatives in each draft EIS. Federal officials also issued a strong call for public review of the Draft EISs, which will be available in late May.

"We have identified Alternative Four as the 'preferred alternative' in the Draft Environmental Impact Statements," stated Idaho State BLM Director Martha Hahn. "The preferred alternative allows citizens to share the many values and uses of the Federal public lands. Among the seven alternatives, it strikes the best balance of actively restoring forest, rangeland and watershed resources, while providing resource goods and services to people. It also seeks to involve the public, other levels of government, and tribes in the decision making that affects public lands." Hahn chairs a panel of Federal executives in the Pacific Northwest who oversee the effort known as the Interior Columbia Basin Ecosystem Management Project.

The Project was launched in 1993 by the Forest Service and BLM to address environmental and economic issues that affect larger areas than traditional administrative boundaries, such as recovery of Snake River salmon, declining forest and rangeland health, and changing economies and social conditions of local communities. Comprehensive science reports were issued in December 1996. The Draft EISs respond to the scientific information as well as over 10,000 public comments.

"The two DEISs are based largely on a scientific assessment of the Interior Columbia River Basin, an unprecedented comprehensive evaluation of the ecological, economic, and social conditions that was released in December 1996," said Tom Mills, Director of the Forest Service Pacific Northwest Research Station. Mills pointed out that the scientific assessment's information was compiled and synthesized by over 300 scientists and technicians from federal and state agencies, universities and private contractors. "I am pleased to see science have such an important role helping professional land managers make better

am pleased to see science have such an important role helping professional land managers make better decisions."

"We are confident the proposed management strategy is firmly based on science and meets the requirements and spirit of the nation's environmental laws," said Regional Forester Dale Bosworth. "A 'big picture' strategy for Federal lands is necessary to prevent further declines of fish and wildlife, address the threat of catastrophic wildfires, and support people and communities. Without it we face continued litigation and gridlock."

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The preferred alternative in the Draft EISs features aggressive restoration of forests, rangelands and watersheds through active management. It emphasizes actions such as thinning over-dense forests and setting controlled fires during cooler seasons to decrease risks of large and more severe wildfires which have plagued the region in recent years. Also highlighted is an increased effort to stem the tide of noxious weeds which are spreading across range and forest lands in the northwest. Actions are proposed to restore both stream side riparian areas -- as well as larger watersheds -- to healthier conditions.

The preferred alternative provides a special focus on conserving populations of native fish like bull trout, salmon and steelhead. The overall land management strategy also emphasizes managing watersheds and ecosystems rather than just a small patch of ground. This management strategy is expected to provide a more predictable and sustainable supply of goods and services from Forest Service- and BLM-administered lands, thereby providing economic support to rural areas of the Pacific Northwest.

The preferred alternative came after months of listening to governments and advisory committees, and sets the stage for continued dialogue. "The proposed management strategy will ensure that affected people have a say in what happens in the landscapes they live in," said BLM Oregon-Washington State Director Elaine Zielinski. "The preferred alternative features strong interagency collaboration with states and counties, and better consultation to see that tribal treaty and government trust responsibilities are fulfilled. We also want public participation at the watershed and local level."

Federal officials noted that much work remains to be done. "Today's decision is one giant step forward for good stewardship of our Federal lands," said National Marine Fisheries Service Regional Director Will Stelle. "We are plowing new ground here, and it could be wonderfully significant. Success will turn, however, on implementation."

Release of the Draft Environmental Impact Statements in late May will be followed by a 120-day comment period. Federal officials were quick to point out that public comments are essential to mold the final strategy, due to be completed by the summer of 1998. "These are draft documents," said Forest Service Northern Regional Forester Hal Salwasser. "The final direction will reflect your comments. There will be many opportunities to ask questions about the documents and give comments over the next few months."

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