



The actions build on significant improvements that the agencies have made for fish going well beyond earlier efforts. And, thanks to collaboration, they have broader regional support than ever before. 🐟

Who is Part of the Collaboration?

- ◆ **Federal:** the action agencies (the Corps, Reclamation and BPA) and NMFS
- ◆ **Tribes:** Nez Perce Tribe, Confederated Tribes and Bands of the Yakama Indians, Confederated Tribes of the Warm Springs Reservation of Oregon, Confederated Tribes of the Umatilla Indian Reservation, Kootenai Tribe of Idaho, Confederated Tribes of the Colville Reservation, Spokane Tribe of Indians
- ◆ **States:** Oregon, Idaho, Washington and Montana

Meeting the Requirements of ESA

Congress authorized the federal dams for multiple purposes – to provide flood control, navigation, power, irrigation, recreation, and fish and wildlife. While the FCRPS and the Upper Snake projects are operated to provide some or all of these benefits (depending on the project), the operation also must comply with the ESA.

The ESA requires federal agencies to consult with NMFS or the U.S. Fish and Wildlife Service, as appropriate, to ensure actions are not likely to jeopardize the continued existence of listed species or to adversely modify or destroy their designated critical habitat.

Following Judge Redden’s rulings in 2005 (see sidebar), the action agencies returned to these biological assessments and, in collaboration with sovereign states and tribes, examined their operations and proposed actions. The new documents they developed specifically respond to those rulings.

NMFS expects to develop new biological opinions (BiOps) for operation of the FCRPS and the Upper Snake projects by early 2008. 🐟

A Science-Based Proposal

The new FCRPS operations plan responds to the court’s direction with a comprehensive analysis that goes beyond what the agencies proposed for the previous BiOps. Using the best available scientific information, this analysis examines each ESA-listed Columbia River Basin stock, as well as the habitat, hydro, hatchery and harvest factors that limit their ability to recover. The analysis also estimates the benefits of the actions the agencies propose.

The new proposed action for the FCRPS differs from the action implemented under the 2004 BiOp in several important ways:

- ◆ It makes use of a comprehensive analysis of the salmon lifecycle (from egg through smolt through inriver migration, to the ocean and returning to spawn) modeled after the 2000 BiOp. Based on the best available science, it uses the most recent data from NMFS technical recovery teams to focus on the biological needs of the fish, referred to as key “limiting factors.”
- ◆ It includes a broader analysis of actions by other federal agencies on behalf of listed

New Documents Respond to Court Rulings

In February 2005, the National Wildlife Federation and several other parties asked the court to invalidate the 2004 NMFS BiOp on the operation and maintenance of the FCRPS and 19 Reclamation projects in the Columbia River Basin. In October 2005, U.S. District Court Judge James Redden found the 2004 NMFS BiOp invalid and remanded it to the federal agency.

Meanwhile, responding to a separate lawsuit by American Rivers and others, in May 2006 Judge Redden remanded the 2005 NMFS BiOp for the operation and routine maintenance of 12 federal Upper Snake River projects. These projects and facilities, which are all upstream of Idaho Power’s Brownlee Reservoir in Hells Canyon, are operated for irrigation by Reclamation.

As directed by the court, the action agencies are coordinating these remands by conducting a comprehensive analysis of the impacts of the FCRPS and the Upper Snake on listed stocks.



salmon and steelhead as well as non-federal actions that are reasonably certain to occur.

- ◆ It makes use of a new peer-reviewed model using the most recent empirical information to assess the effectiveness of modifications to the hydro system.
- ◆ To ensure best value in assembling the proposed action, it includes an evaluation of potential benefits of habitat improvements and hatchery reform based on expert opinion and advice from parties in the sovereign collaboration.

Looking at the needs of the fish

The action agencies systematically worked through an analytical process that yielded a snapshot of the past, present and projected future environmental status of each of the listed stocks. They were then able to design a portfolio of actions to address the biological needs of the listed stocks (expressed as “survival gaps”) and to target actions addressing key limiting factors for those populations most in need. Based on the collaboration work products, the action agencies identified future actions and benefits designed to fill the estimated survival gaps.

The goal of the actions for each listed stock studied was two-fold: avoid extinction and contribute to recovery. To determine whether the actions would

achieve these biological goals, the analysis assessed the projected trends in abundance, productivity, population growth rate and 24-year extinction risk.

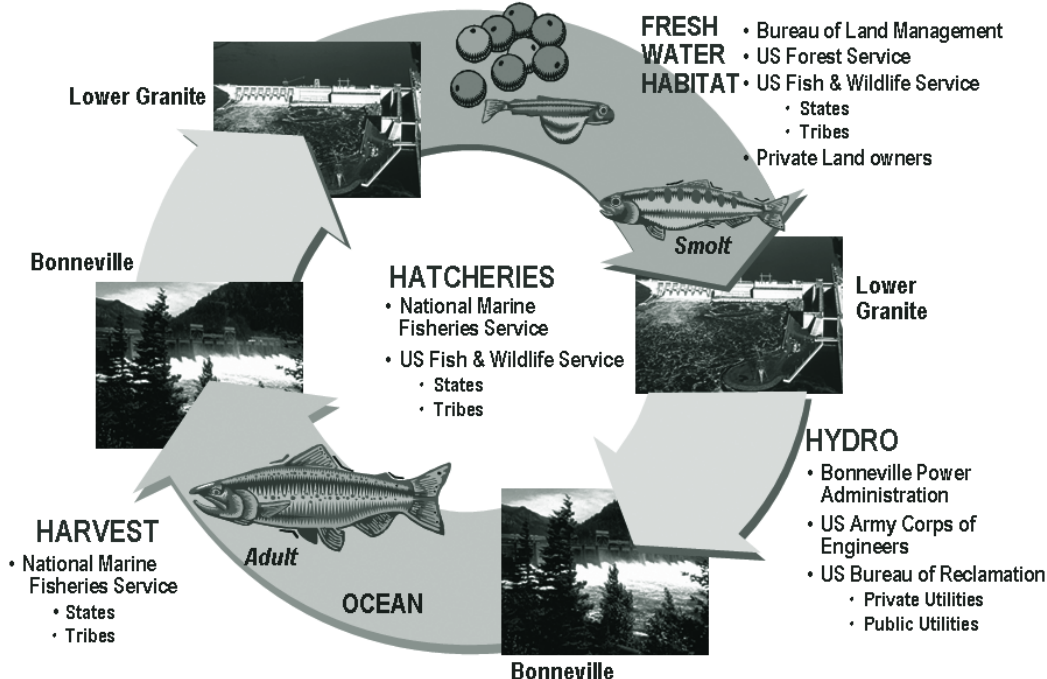
Managing uncertainty

Even with widely accepted population data and population metrics, as well as established and new analytical tools, evaluating the effects of the many limiting factors on every life stage of the fish is no simple matter. A program of this complexity, with comprehensive actions on so many fronts, will entail a significant degree of uncertainty and risk.

To address uncertainties and manage risks, the action agencies’ proposal includes the following:

- ◆ new and higher performance standards for survival of fish passing through the dams, demonstrating a commitment to achieve results;
- ◆ research, monitoring and evaluation – a robust program addressing status of the fish, effectiveness of actions and critical uncertainties;
- ◆ progress reports and contingencies, to ensure accountability for results over the BiOp term;
- ◆ and adaptive management and continued collaboration and dialogue among sovereign governments to make timely adjustments where needed, based on the best available information. ➤

Background: The Salmon Life Cycle/ All H Snake River Stock



The analysis looked at the current status of each listed fish and then identified a comprehensive set of actions that affect survival and recovery at each stage of their life cycle.

The Proposed Action: Major Co

The court's rulings have also called for greater certainty that the proposed action would be implemented. In response, the new proposed action for the FCRPS reflects further funding increases across the Hs (hydro, habitat, hatchery and harvest); predation management; and research, monitoring and evaluation over the 2007–2017 period. And, it provides greater emphasis on demonstrating biological benefits, on-the-ground results and accountability for the funding spent. Under the plan, expenditures committed to by the action agencies during 2007–2017 include the following:

- ◆ \$70-80 million per year from the Corps' Columbia River program for dam modifications, survival evaluations and predator management actions.
- ◆ \$45 million per year commitment from BPA for tributary and estuary habitat, with additional funds from the Corps and Reclamation. BPA annual funding commitments for habitat projects averaged about \$21 million between 2000 and 2006 with an increase to approximately \$37 million for 2007 to 2009.
- ◆ Almost \$35 million over the BiOp period to fund new hatchery facilities and another \$5 million per year to fund new, hatchery facility–related



The action agencies will work with hatchery managers to ensure that hatcheries contribute to and don't impede the recovery of natural fish.



Tributary flows on the Middle Fork of the John Day River in late summer have been increased through water purchases and leases, enhancing habitat conditions for spring Chinook and steelhead.

Surface bypass systems, such as this Removable Spillway Weir (RSW or "fish slide") currently dry-docked in Portland, provide easier and safer passage for fish. This fish slide will be barged to Lower Monumental Dam in the fall of 2007.

With these and other improvements the action agencies are committing to new and higher performance standards at the dams for juvenile fish survival.



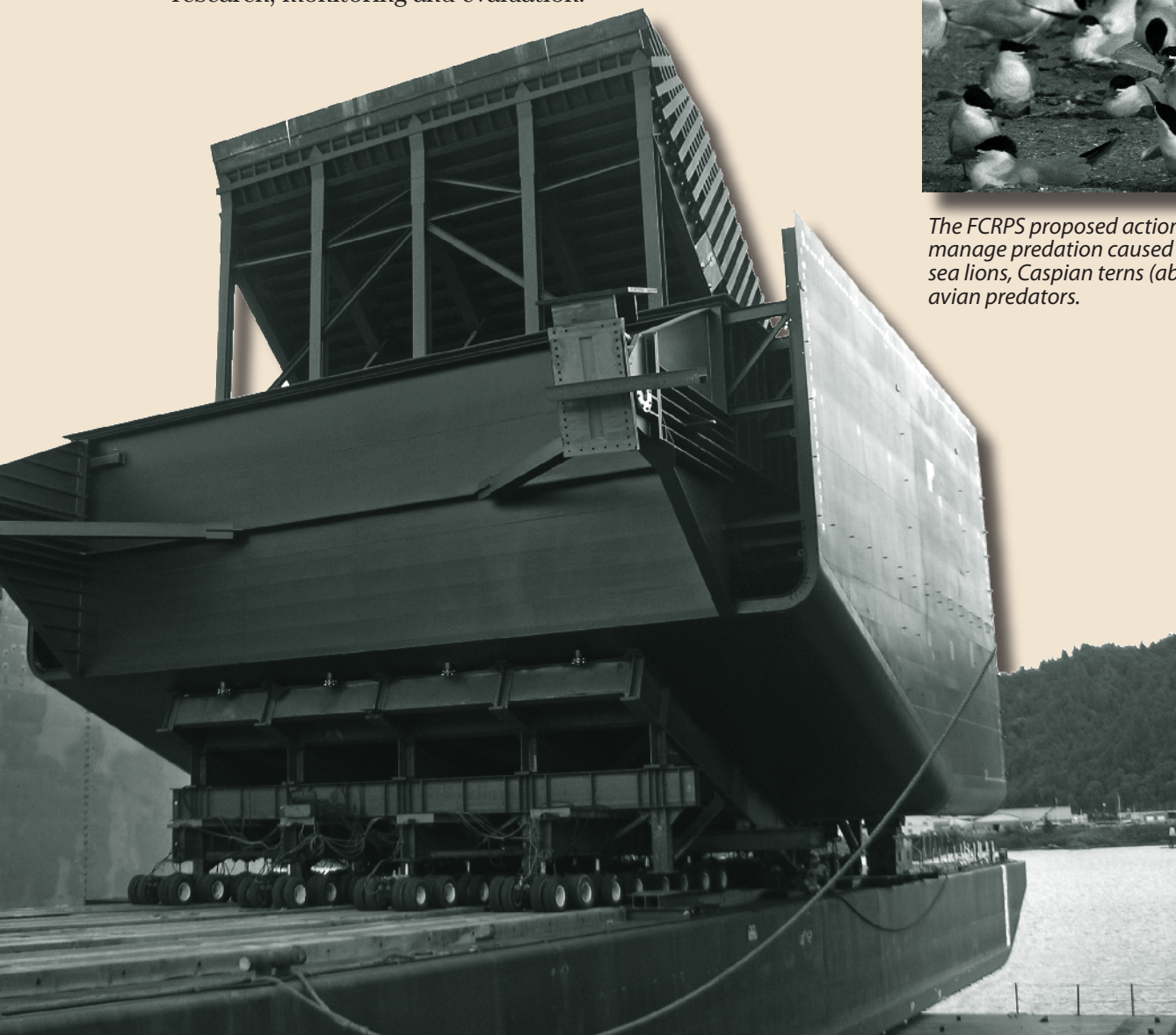
Commitments to Fish Recovery

expenses, support better steelhead productivity and assess habitat potential for chum re-introduction below Bonneville Dam. This is in addition to current expenditures of approximately \$11 million per year for operations and maintenance of safety-net and conservation hatcheries and \$35 million per year for other FCRPS mitigation hatchery programs.

- ◆ An increase from \$3 million to \$3.7 million per year to expand the Northern Pikeminnow Management Program and reduce predation of juvenile salmon.
- ◆ An initial commitment of \$75 million per year for research, monitoring and evaluation.



The FCRPS proposed action has provisions to manage predation caused by pikeminnow, sea lions, Caspian terns (above) and other avian predators.





Greater Support through Regional Collaboration

Hundreds of hours of collaboration among scores of scientists, tribal representatives, state and local representatives, federal officials and others have gone into the assembly of the FCRPS proposed action. The collaboration was successful in narrowing areas of disagreement and clarifying policy issues. Today, collaborators have a much better grasp of the challenges to salmon recovery and the tools available to address them. The proposed action seeks to make use of these understandings.

The action agencies believe collaboration will contribute long-term value and are proposing to continue the collaboration with policy representatives of upriver and downriver sovereigns to guide the technical and policy implementation of the new BiOp. 

The Comprehensive Analysis and Upper Snake BA

The Comprehensive Analysis was prepared in response to the court's order that the effects of Reclamation's Upper Snake irrigation projects and the FCRPS be addressed in a single, comprehensive analysis, although they are operated as independent systems.

Reclamation's operations in the Upper Snake include delivering water for flow augmentation for listed salmon and steelhead. Although none of the 13 listed Columbia River salmon and steelhead stocks are found in the Upper Snake River basin, water operations above Brownlee Dam influence stream flows below Hells Canyon Dam, where the listed fish occur. The flow effects of the Upper Snake actions aggregate at Brownlee Reservoir.

Models show that Reclamation's Upper Snake actions improve flows in the lower Snake River (below Hells Canyon Dam) in July through September. Recent data indicate that adjusting the timing of this flow augmentation may increase the benefits to the four listed Snake River fish. To the extent possible, Reclamation is proposing to shift

flow augmentation from the summer months into the spring to better meet the needs of these listed fish.

In addition to flow augmentation, this consultation covers Reclamation's continued survey of ESA-listed snails and the operations and maintenance of federal dams and reservoirs. Each of these actions encompasses project facilities within the same drainage that are operationally coordinated. For example, the operations and routine maintenance of the facilities on the Boise drainage (Anderson Ranch Dam, Arrowrock Dam and the Corps' Lucky Peak Dam) is defined as one separate action.



Divers monitor populations of Snake River snails, protected by a U.S. Fish and Wildlife Service BiOp. Surveys of ESA-listed aquatic snail species is one of 12 proposed actions included in Reclamation's 2007 Upper Snake BA.

Nez Perce Water Rights Settlement

Long-standing disputes over water allocations in Idaho's Snake River Basin are being addressed through a general adjudication of basin-wide water right claims by the state.

The 2004 Nez Perce Water Rights settlement was a milestone in this 20-year adjudication process and a remarkable collaboration to resolve tribal water rights claims. The settlement provides many benefits to fish, including financial support to the tribe for stream restoration and habitat improvement projects. It also strengthens Reclamation's ability to acquire flow augmentation water for listed fish, especially in dry years when it's most needed.



The Settlement and Idaho Water Law

In the western United States, water is managed by the individual states. A cornerstone of Reclamation law since 1902 has been its operation within state water law. Prior to the Snake River Basin Adjudication and the Nez Perce Water Rights Settlement, Idaho law limited the annual volume of water that would be provided for flow augmentation in the Columbia River to 427,000 acre-feet from all sources. The laws addressing flow augmentation were renegotiated annually or every few years.

Under the settlement, state law was enacted to authorize the rental and protection of up to 487,000 acre-feet of water annually for flow augmentation for the 30-year term of the agreement. This includes 60,000 acre-feet of water from natural water right holders along the Snake River. In cooperation with the Idaho Department of Water Resources, Reclamation has already secured this 60,000 acre-feet of natural flows for the 30-year period.

The 2005 NMFS BiOp for the Upper Snake River reflected this agreement with the tribe. Federal and state legislation was enacted to implement the provisions of the agreement, and it was also approved by the Nez Perce Tribal Executive Council and decreed in the Snake River Basin Water Rights Adjudication Court.

Each of the three components of the settlement includes actions with potential to support salmon recovery.

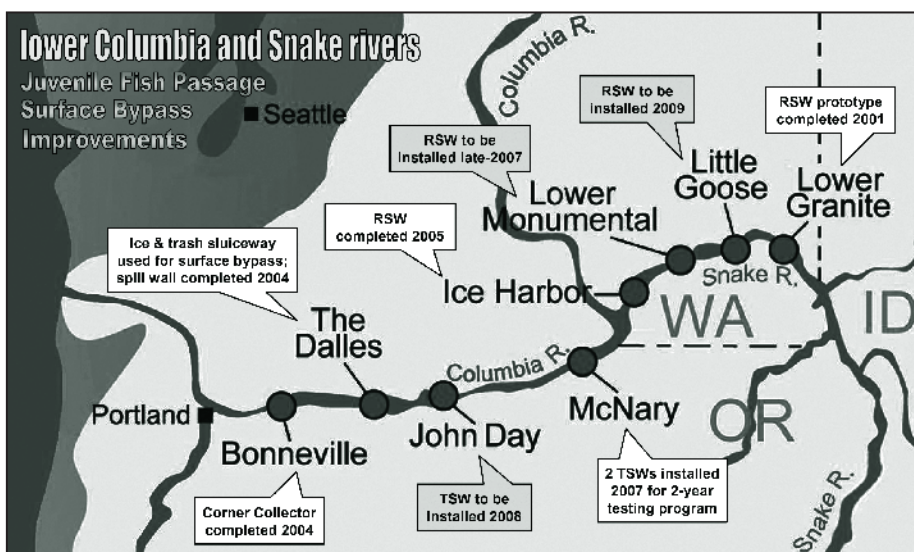
- ◆ The Nez Perce Tribal component addresses the tribe's consumptive water rights claims on the reservation, provides funds for water development and resolves other issues.
- ◆ The Salmon/Clearwater component includes the adoption of minimum instream flows, held in trust by the state, on over 200 rivers, streams and creeks in the Salmon and Clearwater river basins.

- ◆ The Snake River flow component, and associated state and federal law, includes provisions to allow Reclamation's continued delivery of flow augmentation water for a 30-year period. The actions proposed in Reclamation's 2007 Upper Snake BA were described in the 2004 BA and are consistent with the terms of this component of the settlement.

Building on Successes to Date for the FCRPS

Taken together, the analysis and actions build on the impressive progress that action agencies have made in the mainstem Columbia River and tributaries to recover fish. Since 1991, the region has invested about \$1.1 billion to overhaul the federal dams on the lower Snake and Columbia rivers to make them safer for fish. This includes the following:

- ◆ juvenile bypass system improvements;
- ◆ state-of-the-art juvenile fish monitoring;
- ◆ RSWs ("fish slides") at Lower Granite, Ice Harbor and Lower Monumental;
- ◆ a corner collector at Bonneville Dam;
- ◆ spill wall at The Dalles Dam;
- ◆ spill deflectors at seven of eight dams to allow more spill; and
- ◆ juvenile fish through spillway passage routes.



Surface bypass systems have been installed or are planned at every federal dam on the mainstem. Structural and operational changes have significantly improved juvenile survival through the dams.



As a result, increased survival of Snake River fish through the hydro system is now equivalent to what it was in the 1960s, when only four federal dams were in place on the Columbia and lower Snake. Juvenile spring Chinook survival in 2006 was the highest NMFS has ever measured.

Adult migration rate and travel time are similar to levels before the Snake River dams were completed. And, while returns of adult Chinook are cyclic and depend on many factors in addition to the hydro system, returns have been above 10-year averages in recent years.

Included as part of the major overhaul of the hydro system are substantial commitments that the action agencies have made since 2001 in habitat and hatchery actions as offsite mitigation for the remaining effects of the hydro system. These include the following:

- ◆ restoring fish access to 1,280 miles of tributary habitat;
- ◆ securing agreements to keep more than 500 cubic feet per second of additional water in tributaries;
- ◆ installing or retrofitting fish screens on more than 85 water diversions;
- ◆ acquiring more than 600 acres of habitat in the Columbia River estuary; and
- ◆ protecting or improving more than 1,000 miles of riparian habitat. ➤

Recovery Plans

The ESA requires that NMFS develop long-term Recovery Plans for listed species. NMFS is working with local stakeholder teams to develop long-term plans for the same listed Columbia River Basin fish runs. Ultimately, the goal of recovery plans is to recover listed species and restore their ecosystems to the point that protections under the ESA are no longer needed. The FCRPS BiOp will provide a solid foundation to support long-term recovery of salmon and steelhead in the Columbia River Basin.

Working with the Region for Recovery

Ensuring sufficient abundance of salmon and steelhead to sustain healthy natural stocks is a challenge that reaches beyond the federal hydro system. Recovery will require years of concerted effort from federal agencies, states and tribes, as well as local governments and private parties. Actions in hydro, habitat, hatcheries, harvest and predation management will all be necessary.

The action agencies look forward to working with the region's sovereigns on the implementation of the new BiOps in a continuation of the collaboration that has led to these proposed actions.

The technical and scientific contributions of those entities over the past two years have led to a better understanding and appreciation of what the fish need. It has helped the agencies fashion a comprehensive suite of actions and commitments that are expected to contribute to recovery for Columbia River Basin salmon and steelhead over the next decade and to lay the foundation for the greater recovery effort in the region.

To learn more about this new strategy for listed fish, go to www.salmonrecovery.gov to find the following publications:

The Federal Columbia River Power System
Biological Assessment



The Upper Snake Biological Assessment



The Comprehensive Analysis



Executive Summary to the FCRPS BA,
the Upper Snake BA and the CA



An Overview of Federal Hydrosystem
Proposals and Analyses