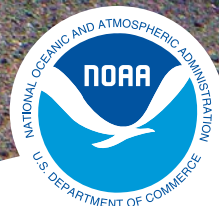


# Pacific Coastal Salmon Recovery Fund

FY 2000–2013

## 2014 Report to Congress





**1989**

Sacramento River winter-run Chinook are listed as threatened by National Marine Fisheries Service (NMFS) under the Endangered Species Act (ESA).

**1992**

Snake River spring/summer-run Chinook and Snake River fall-run Chinook are listed as threatened under ESA.

**1996**

Central California Coast coho are listed as threatened.

**1998**

Southern California steelhead are listed as endangered. Lower Columbia River steelhead, Oregon Coast coho, and Central Valley steelhead are listed as threatened.

**2000**

Northern California steelhead are listed as threatened.

PCSRF is funded by Congress, dedicating funds to WA, OR, CA, and AK and regional tribes\* to protect declining salmon populations.

**1991**

Snake River sockeye are listed as endangered.

**1994**

Sacramento River winter-run Chinook are listed as endangered under ESA.

NMFS begins a complete review of the ESA status for salmon and steelhead along the West Coast.

**1997**

Upper Columbia River steelhead are listed as endangered. Snake River steelhead, S. Oregon/N. California Coasts coho, Central California Coast steelhead, and South-Central California Coast steelhead are listed as threatened.

**1999**

Upper Columbia River spring-run Chinook are listed as endangered. Hood Canal summer-run chum, Ozeite Lake sockeye, Puget Sound Chinook, Lower Columbia River Chinook, Columbia River chum, Upper Willamette River Chinook, Upper Willamette River steelhead, Middle Columbia River steelhead, California Coastal Chinook, and Central Valley spring-run Chinook are listed as threatened.

Pacific Salmon Treaty Agreement is signed by the U.S. and Canada.

# PCSRF Timeline

# Pacific Coastal Salmon Recovery Fund

FY 2000–2013

## 2014 Report to Congress

Since 2000, PCSRF has provided a stable source of funding for managers, allowing them to implement all phases of restoration and protection activities. This 2014 Report to Congress documents PCSRF's contributions to salmon restoration over the last 14 years (FY 2000-2013), describing the various grantee programs and their respective project identification and prioritization processes, highlighting example activities, and displaying the geographic breadth of projects.

Opening pages: Spring Chinook salmon in dam passage. Photo: Lance Kruzic, NOAA

Cover: Steelhead in the Russian River. Photo: Justin Smith, California Conservation Corps.

**2002**

Species' range for endangered Southern California Coast steelhead is extended to the Mexico border.

**2005**

PCSRF Performance Framework of goals and measures is developed and implemented.

Central California Coast coho are reclassified as endangered. Lower Columbia River coho are listed as threatened.

**2007**

Puget Sound steelhead are listed as threatened.

NMFS implements a competitive selection process to allocate PCSRF funds among grantees to improve the likelihood that funded projects address limiting factors.

**2010**

PCSRF implements a second phase of performance metric reporting to more comprehensively track project implementation data to support scientific analyses and adaptive management.

**2004**

Idaho is added as a PCSRF recipient recognizing upstream spawning habitat as critical to Pacific salmon and steelhead survival.

**2006**

Upper Columbia River steelhead are upgraded to threatened status.

**2009**

Nevada is added as a PCSRF recipient, recognizing the historic geographic extent of anadromous fish in the Columbia Basin.

**2012**

Congress adds Alaska Tribes to the pool of applicants eligible for PCSRF funding.

\* Pacific Coastal Tribes include the Northwest Indian Fisheries Commission (NWIFC) on behalf of twenty western Washington treaty tribes (Hoh Indian Tribe, Jamestown S'Klallam Tribe, Lower Elwha Klallam Tribe, Lummi Nation, Makah Nation, Muckleshoot Tribe, Nisqually Indian Tribe, Nooksack Tribe, Port Gamble S'Klallam Tribe, Puyallup Tribe of Indians, Quileute Indian Tribe, Quinault Indian Nation, Sauk-Suiattle Tribe, Skokomish Tribe, Squaxin Island Tribe, Stillaguamish Tribe, Suquamish Tribe, Swinomish Tribe, Tulalip Tribes, and Upper Skagit Tribes); the Klamath River Inter-Tribal Fish & Water Commission (KRITFC) on behalf of four Klamath Basin tribes (Hoopa Valley Indian Tribe (CA), Karuk Tribe (CA), Klamath Tribes (OR), and Yurok Tribe (CA)); and tribes not associated with a tribal commission (Round Valley Indian Tribes (CA), the Chehalis Tribe (WA), Coquille Indian Tribe (OR), the Confederated Tribes of the Grand Ronde (OR), and the Confederated Tribes of Siletz Indians (OR)). Beginning in 2012, Congress expanded the definition of Pacific Coastal Tribes to include approximately 229 federally recognized tribes in Alaska.

Columbia River Tribes include the Columbia River Inter-Tribal Fish Commission (CRITFC) on behalf of four tribes (Nez Perce Tribe (ID), Confederated Tribes of the Umatilla Indian Reservation (OR), Confederated Tribes of the Warm Springs Reservation (OR), and the Confederated Tribes and Bands of the Yakama Nation (WA)); and tribes not affiliated with a tribal commission (Confederated Tribes of the Colville Reservation (WA), and the Shoshone-Bannock Tribes (ID), Shoshone Paiute Tribes of the Duck Valley Indian Reservation (NV)).

# An introduction to the Pacific Coast Salmon Recovery Fund

Human activities and environmental conditions have placed grave pressures on West Coast salmon.<sup>1</sup> Though a remarkably adaptable species, decades of human land- and water-uses, harvest, and hatchery practices have contributed to the decline of many populations. Today, 28 salmon species face extinction on the West Coast and are protected under the Endangered Species Act (ESA). Many of these species are of profound cultural importance to West Coast Native American Tribes, and their recovery is critical to meeting Federal obligations as stewards of Tribal treaty and trust resources.

In 2000, Congress established the Pacific Coastal Salmon Recovery Fund (PCSRF) to reverse the decline of West Coast salmon populations in California, Oregon, Washington, Alaska, and Idaho. PCSRF is a competitive grants program through which the National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS) administers funding to States and Tribes to protect, conserve, and restore these populations. In addition to these efforts, the program plays a vital role in upholding Tribal treaty fishing rights and subsistence fishing traditions. The program is essential to preventing the extinction of threatened and endangered salmon populations and, in many cases, has contributed to stabilizing at-risk populations and has set the stage for their recovery.

PCSRF has awarded an average of \$78 million annually since 2000 (Exhibit 1). With this funding, States and Tribes have leveraged additional resources to collectively implement 11,500 projects to conserve West Coast salmon. Projects have restored and improved access to important spawning and rearing habitats. PCSRF-funded activities also include robust planning and monitoring programs that inform strategic prioritization of projects and track salmon conservation accomplishments.

<sup>1</sup>In this report, the term "salmon" is inclusive of both salmon and steelhead.

## SINCE 2000, PCSRF HAS:

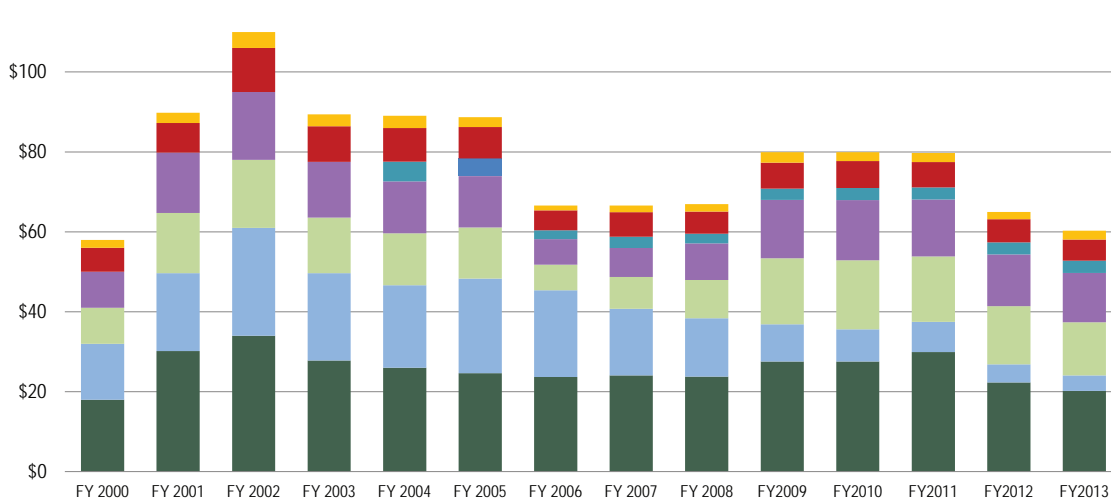
- Restored over 1,000,000 acres of salmon habitat
- Opened nearly 8,100 miles of streams to spawning fish
- Leveraged over \$1.3 billion in non-Federal contributions



Juvenile steelhead. Photo: John McMillan

## Awards to States & Tribes

Millions of Dollars  
\$120



Total Awards

Columbia River Tribes	\$32.9
Pacific Coastal Tribes	\$96.9
Idaho	\$31.8
Oregon	\$172.8
California	\$182.7
Alaska	\$213
Washington	\$359.8
<b>Total (rounded to the nearest \$0.1M)</b>	<b>\$1,090</b>

Exhibit 1: PCSRF Awards to States and Tribes (in millions)

# PCSRF's competitive grants process

Each year, NMFS administers a PCSRF grants competition. Proposals are reviewed and scored by independent, expert technical reviewers who evaluate the application's conservation objectives; qualifications of applicants; costs; and the relevance and scientific merit of the proposed activities. The reviewers' scores, comments, and the rank order of the proposals are provided to a panel that includes representatives from NMFS' Pacific Coast regions. This panel recommends grant recipients and respective funding levels to the Assistant Administrator for NMFS. The Assistant Administrator serves as the selecting official, making the final decisions on the PCSRF awards, ensuring an adequate balance among priorities, geographies, institutions, partners, research priorities, and types of projects. PCSRF projects must:

- Address factors limiting the health of Endangered Species Act (ESA)-listed Pacific salmon and steelhead as specified in approved, interim, or proposed recovery plans;

- Address factors limiting the health of Pacific salmon that are necessary for the exercise of Tribal treaty fishing rights or native subsistence fishing, as well as projects that support ongoing efforts to restore or maintain such populations;
- Monitor effectiveness of habitat restoration actions at the watershed or larger scales, evaluating projects that directly contribute to assessments of the reproductive success, abundance, spatial distribution, and diversity of ESA-listed salmon populations, or monitoring necessary for the exercise of Tribal treaty fishing rights or native subsistence fishing; or
- Demonstrate consistency with the PCSRF Congressional authorization, including projects that are necessary precursors to implementing activities under the above priorities, such as outreach, planning and coordination, assessment, design, research, and monitoring.

## Science-based recovery plans provide the framework for recovering salmon

There are 28 Pacific salmon species protected under the ESA on the West Coast (Exhibit 2), spanning four States and some 176,000 square miles. Recovery activities are organized by geographic domains (Exhibit 2), with some including multiple salmon species and others just a single species. Recovery plans are in place for 18 of the 28 listed species. Recovery plans for the remaining 10 species are under development.

Recovery plans are science-based road maps that identify the population-specific physical and biological factors that need to be addressed to improve the survival and success of each life stage. The plans also outline a set of site-specific actions to address each of these factors. PCSRF funds support implementation of these recovery actions to protect and restore functioning habitats and ecosystems, and reverse salmon population declines. These investments have contributed to stabilizing and improving the status of many threatened and endangered salmon species.



Juvenile steelhead. Photo: John McMillan

### THE ROLE OF SALMON IN LOCAL CULTURES AND TRADITIONS

**Pacific salmon are critical components of healthy ecosystems, cultures, and economies. This legacy began centuries ago when healthy salmon runs sustained native peoples, nurtured the economies of coastal and inland towns, and supported customs that connected people with their natural landscapes.**

### Puget Sound

- 1—Ozette Lake Sockeye (T)- stable
- 2—Hood Canal Summer-run Chum (T)- stable
- 3—Puget Sound Steelhead (T)- stable
- 4—Puget Sound Chinook (T)- stable

### Willamette/Lower Columbia

- 5—Columbia River Chum (T)- stable
- 6—Lower Columbia River Chinook (T)- stable
- 7—Upper Willamette River Chinook (T)- declining
- 8—Lower Columbia River Steelhead (T)- stable
- 9—Lower Columbia River Coho (T)- stable
- 10—Upper Willamette River Steelhead (T)- stable

### Oregon Coast

- 11—Oregon Coast Coho (T)- stable

### Interior Columbia

- 12—Snake River Sockeye (E)- increasing
- 13—Upper Columbia River Spring-run Chinook (E)- stable
- 14—Snake River Fall-run Chinook (T)- increasing
- 15—Snake River Spring/Summer-run Chinook (T)- stable
- 16—Upper Columbia River Steelhead (T)- stable
- 17—Middle Columbia River Steelhead (T)- stable
- 18—Snake River Basin Steelhead (T)- stable

### Southern Oregon/Northern California Coast

- 19—S. Oregon/N. California Coast Coho (T)- unknown

### Central Valley

- 20—Sacramento River Winter-run Chinook (E)- unknown
- 21—California Central Valley Spring-run Chinook (T)- unknown
- 22—California Central Valley Steelhead (T)- unknown

### North-Central California Coast

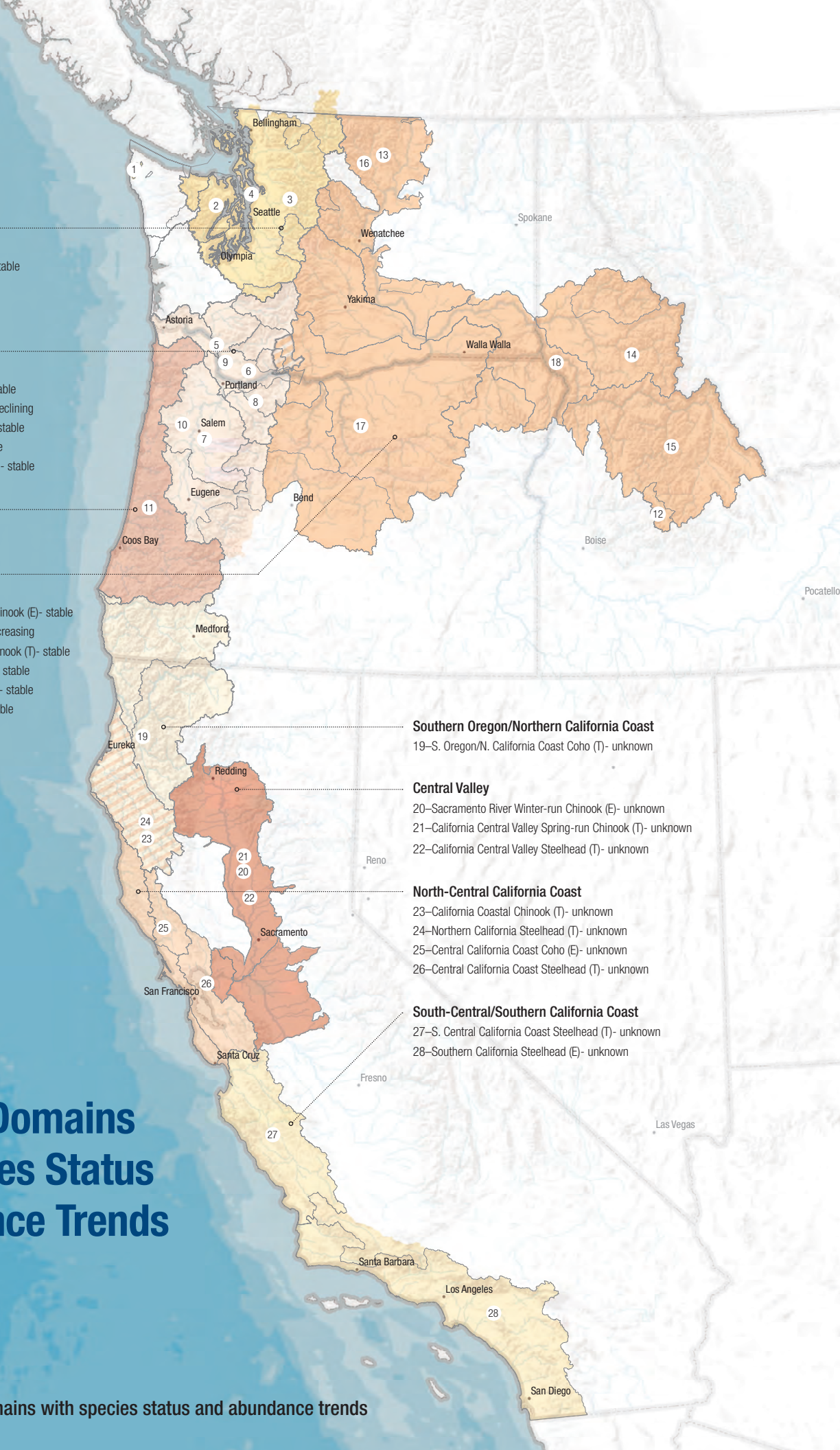
- 23—California Coastal Chinook (T)- unknown
- 24—Northern California Steelhead (T)- unknown
- 25—Central California Coast Coho (E)- unknown
- 26—Central California Coast Steelhead (T)- unknown

### South-Central/Southern California Coast

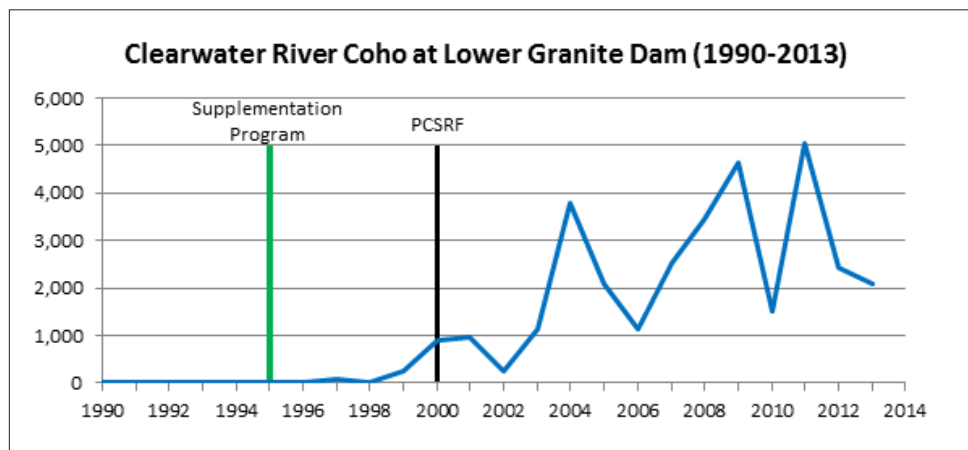
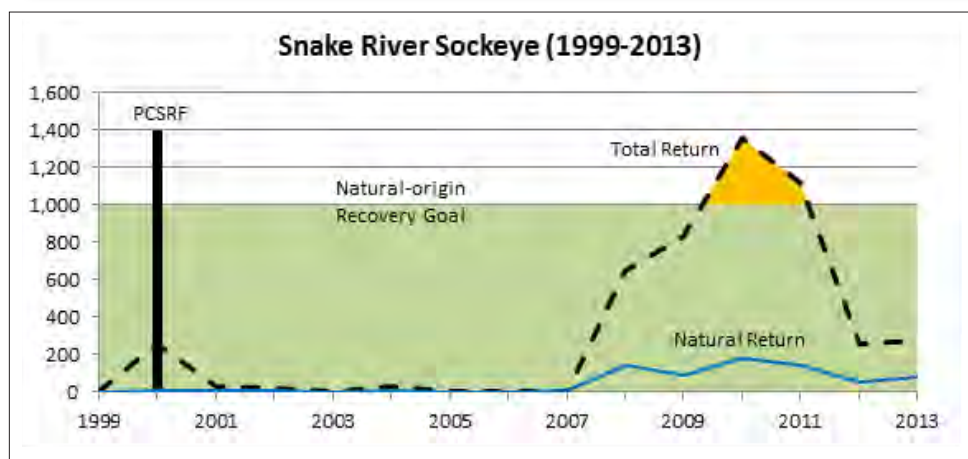
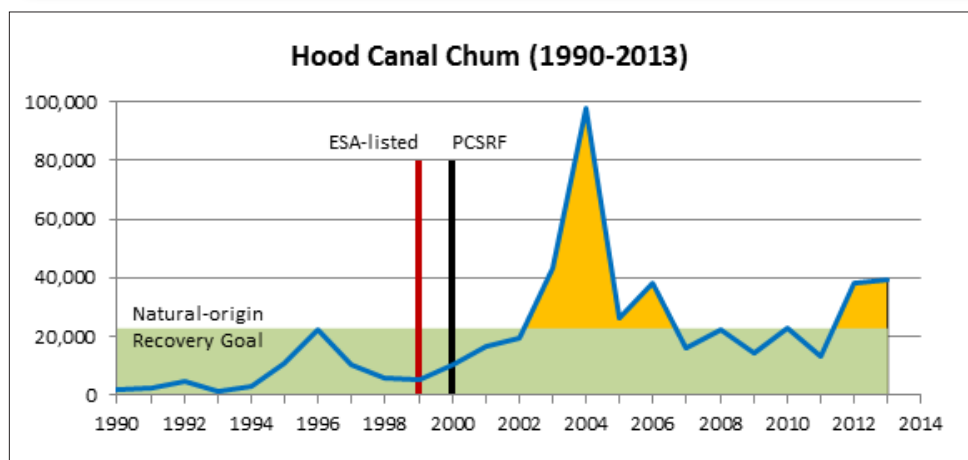
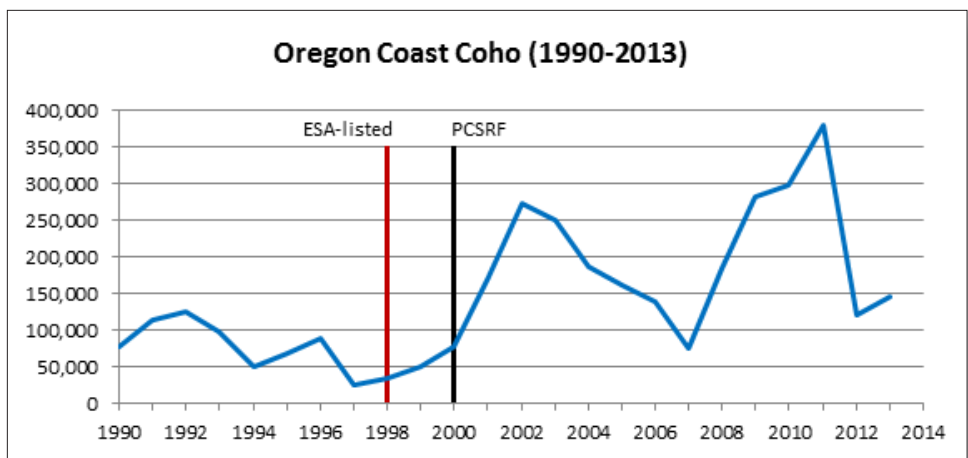
- 27—S. Central California Coast Steelhead (T)- unknown
- 28—Southern California Steelhead (E)- unknown

# Recovery Domains with Species Status & Abundance Trends

Exhibit 2: Recovery Domains with species status and abundance trends



# Reversing species' declines



Of the 18 salmon species with sufficient monitoring data to evaluate trends, 15 are exhibiting stable trends in abundance, and two are exhibiting increasing trends (Exhibit 2). Nearly all of these species were listed during the 1990s, in part, due to alarming declines in abundance. The sustained stable and increasing trends represent a dramatic turnaround from the numbers we witnessed in the 1990s. Changes in ocean conditions, harvest management, hatchery practices, hydropower dam operations, as well as habitat restoration efforts have all contributed to the improvements in status.

In addition to reversing species' declines, several populations are rebounding. Examples include:

**Oregon Coast Coho** were listed as threatened in 1998, as their run size had declined from historical levels in excess of 750,000 fish to less than 50,000 fish. Today, the run size averages nearly 200,000 fish (2004-2013), and exceeded 350,000 fish in 2011. Such returns suggest the species is at or near their delisting abundance goal.

**Hood Canal summer-run Chum** were listed as threatened in 1999, and all populations were at a high risk of extinction. Following a run size of just 1,515 fish in 1994 and the initiation of an innovative hatchery supplementation effort, the species currently has an average run size of more than 30,000 fish (2004-2013) and most populations are nearing their delisting abundance goals.

**Snake River sockeye** were listed as endangered in 1991. In 1994 only one fish returned to Redfish Lake. A captive propagation program rescued the species from extinction. Since 2008, adult returns have averaged nearly 750 fish (2008-2013), with natural returns averaging 113 fish.

**Clearwater River Coho** in Idaho were extinct in 1986. Today, thanks to a PCSRF-funded hatchery supplementation program begun in 1995 by the Nez Perce Tribe, an average of nearly 3,000 fish survive the 500-mile journey back to the Clearwater Basin (2004-2013).

# Monitoring the recovery of West Coast Salmon

The complex requirements of salmon in both their marine and freshwater life phases add to the challenge of fully resolving the benefits of PCSRF and other recovery investments. Scientists are actively researching the interactions of salmon with their habitat, especially as it relates to fully understanding how restoration treatments change habitat processes and thereby improve salmon survival and productivity. NOAA, in partnership with various other Federal agencies, States, Tribes, and local recovery groups, have established “Intensively Monitored Watersheds” to comprehensively monitor fish-habitat relationships and experimentally evaluate the benefits of watershed-scale habitat restoration efforts to fish populations. Over 20 Intensively Monitored Watersheds are strategically located across Oregon, Washington, Idaho, and California. These studies have yet to run their course, but they are confirming the successes of habitat restoration.<sup>iii</sup>

- Juvenile salmon are utilizing restored sites in greater numbers and increased densities;<sup>iii</sup> and
- Restored habitat indeed produces more fish than degraded habitat.<sup>ii</sup>

In addition, these studies are identifying specific habitat characteristics (for example, water velocity, stream gradient, and

gravel size) that are especially important predictors of juvenile survival. This information is helping focus the design and implementation of habitat restoration treatments to more effectively improve salmon rearing habitat.

Predicting watershed-, population-, and species-level responses to habitat restoration projects remains a challenge. These large-scale responses likely depend on the unique characteristics of each watershed and salmon population. Detecting improvements in salmon populations is also complicated by natural environmental variability and population dynamics. Studies suggest that approximately 20 percent of a degraded watershed needs to be restored in order to detect a change in juvenile production.<sup>iv</sup> Much more aggressive levels of restoration will be needed to demonstrate sustained improvements to populations that are attributable to the habitat restoration efforts alone.<sup>v</sup>

While habitat improvements are being won across the landscape, it is important to note that habitat degradation has not been halted. While habitat restoration is working to rectify past degradation, land-use practices must be improved so that these gains from PCSRF and other recovery efforts are not undermined.

## Tracking funding & measuring progress

Since its inception, PCSRF has evolved as new scientific information becomes available, allowing the program to better meet the conservation needs of Pacific salmon. This includes refinements in the types of projects funded, the competitive approach to allocating funds, and how progress is measured. NMFS, States, Tribes, and local project managers have developed an integrated approach to track progress, measure performance, and ensure accountability.

All PCSRF recipients report on a standard list of metrics for all projects (Exhibit 3). In aggregate, these metrics provide estimates of program-wide accomplishments funded with PCSRF, State-matching, and other partner funds (Exhibit 4). PCSRF's project and performance metrics database is available online at: <https://www.webapps.nwfsc.noaa.gov/pcsrfr>

Performance metrics are designed to provide consistent indicators of the activities being implemented and their progress. These are described in the Pacific Coastal Salmon Recovery Fund Performance, Goals, Measures, and Report Framework (referred to as the Reporting Framework).<sup>vi</sup> The Reporting Framework is updated periodically to

reflect improvements in monitoring approaches, trends in habitat conditions, and changes in factors limiting fish survival and recovery. The performance metrics for the short-, mid-, and long-term goals, shown below, address the major impediments to salmon habitat across the West Coast.

### Short-term Outcomes

Enhanced availability and quality of salmon and steelhead habitat

- Improved management practices
- Major habitat limiting factors addressed

### Mid-term Outcomes

- Improved status of ESA-listed salmon and steelhead (naturally spawning populations increased)
- Maintained healthy salmon populations

### Long-term Outcome

- Overall sustainability of Pacific salmon



# Performance Measures

Output	Performance Measure	FY2013	FY2000-FY2013
Instream Habitat Projects	Stream Miles Treated	107	1,783
Wetland Habitat Projects	Acres Created	17	2,115
	Acres Treated	335	29,010
Estuarine Habitat Projects	Acres Created	1	2,303
	Acres Treated	123	4,551
Land Acquisition Projects	Acres Acquired or Protected	9,104	255,935
	Stream Bank Miles Acquired or Protected	518	4,570
Riparian Habitat Projects	Stream Miles Treated	785	8,582
	Acres Treated	9,049	99,769
Upland Habitat Projects	Acres Treated	31,791	621,643
Fish Passage Projects	Number of Barriers Removed	136	2,811
	Stream Miles Opened	560	8,083
	Number of Fish Screens Installed	5	1,897
Hatchery Fish Enhancement Projects	Number of Fish Marked for Management Strategies	521,700	303,224,773
Research, Monitoring and Evaluation Projects	Miles of Stream Monitored	67,327	418,543

Exhibit 3: Summary of PCSRF Program-wide Performance Measures, FY 2000-2013

## Allocations by Project Type

Millions of Dollars

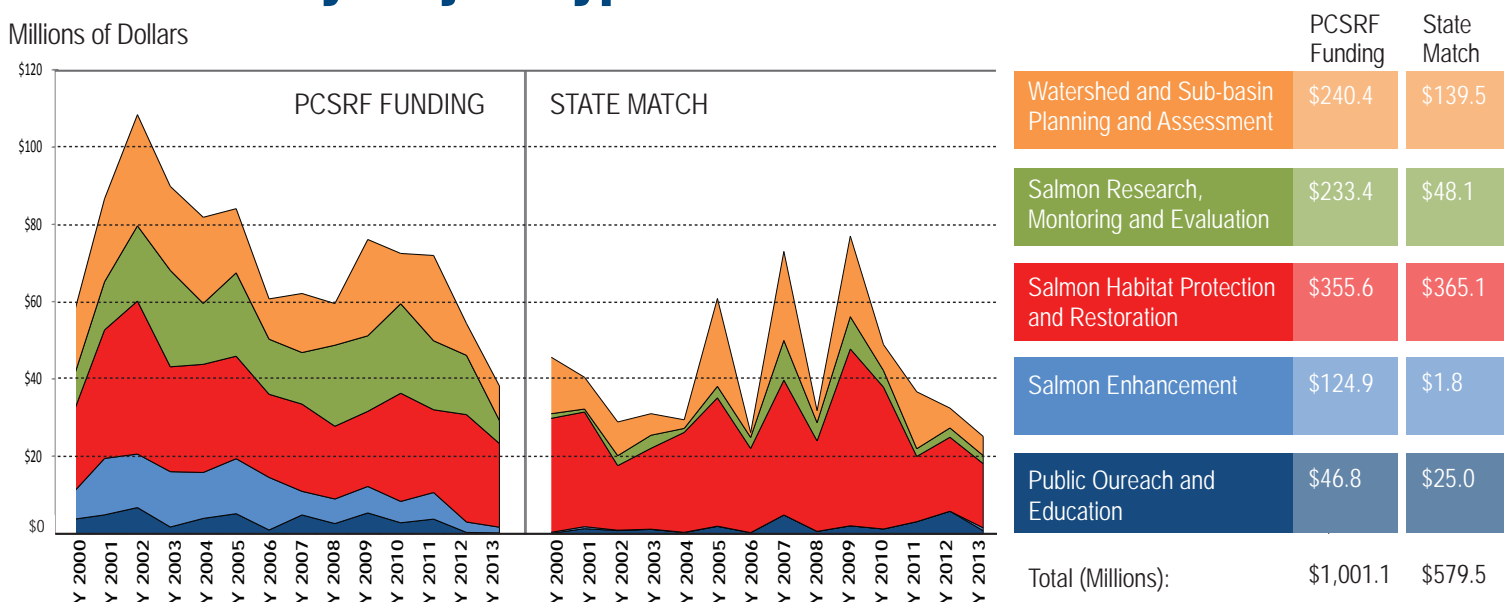


Exhibit 4: Funding Allocations by Project Type\*

\*The sum of total funding allocated across project types does not equal the total of PCSRF awards presented in Exhibit 1. Not all awarded funds have been allocated to projects for the more recent fiscal years.

Exhibit 4 highlights funding allocations by project category. While PCSRF funding levels generally have declined since 2002, habitat restoration and critical monitoring have remained central tenets of the program. While other project categories contribute to PCSRF goals, implementing on-the-ground restoration actions is vital to salmon recovery, and consistent monitoring ensures PCSRF investments are effectively meeting the needs of listed species.

# Investing in salmon restoration spurs economic growth for local communities

Salmon restoration benefits fish populations and their habitats, but the value of these investments goes far beyond recovering threatened and endangered species. The financial investments contribute to local communities and their economies. In Oregon alone, habitat restoration projects generated as many as 6,400 jobs and more than \$977 million between 2001 and 2010.<sup>vii</sup> Recent studies suggest that a \$1 million investment in watershed restoration, of which PCSRF and State matching funds play a significant role, creates on average 16<sup>viii</sup> to 17<sup>ix</sup> new “green” jobs and averages \$2.3 million<sup>x</sup> in economic activity (Exhibit 5).

Every dollar invested in salmon restoration travels through the economy in several ways. PCSRF State and Tribal grantees contract with local watershed groups, conservation agencies, land trusts, and other entities to manage habitat restoration projects. In turn, those agencies contract with local businesses and suppliers to carry out the work. These partners contribute funding on top of PCSRF dollars. This cost-sharing model increases the economic benefits realized in local communities.

Investing in restoration also provides communities with longer-term economic stability, including future job creation in rebuilt fisheries and coastal tourism and higher property values.<sup>xi</sup> In fact, an analysis of three NOAA-funded coastal restoration projects found that each dollar invested returns more than \$15 in long-term net economic benefit.<sup>xii</sup>

The jobs and economic benefits of salmon restoration activities are largely realized in the local and rural communities, many of which face economic challenges. Approximately 80 percent of habitat restoration investments are spent in the county in which the project sponsor is located, and over 90 percent is spent within the State. These economic benefits truly are localized and provide important stability to economically distressed communities.<sup>xiii</sup>

## Economic Effects

Project Type	Definition	Jobs/\$1M	Economic Output/\$1M
<b>In-stream</b>	Enhancing stream habitat and function	14.7	\$2,203,851
<b>Riparian</b>	Restoring riparian habitat function, enhancing and restoring native riparian vegetation	19.0 - 23.1	\$2,310,128
<b>Wetland</b>	Restoring wetland and estuarine habitat	17.6	\$2,259,422
<b>Reconnection</b>	Restoring the flow of water to coastal systems and floodplains	14.6	
<b>Fish Passage</b>	Removing barriers to fish passage (culverts and dams), screening to protect fish from water withdrawals	15.2 - 18.2	\$2,240,281
<b>Upland</b>	Managing agricultural water, juniper, and noxious weeds	15.0	\$2,476,290
<b>Others</b>	Undertaking multiple activities in one comprehensive restoration project	14.7	\$2,270,862
	<b>Average</b>	<b>16.3 - 17.0</b>	<b>\$2,311,468</b>

Exhibit 5: Economic Effects per \$1 Million Invested in Forest and Watershed Restoration Projects <sup>xiv, xv</sup>

**PCSRF DOLLARS LEVERAGE MATCHING FUNDS TO PROVIDE GREATER BENEFITS TO FISH AND PEOPLE**  
 PCSRF funds leverage substantial non-Federal resources for salmon recovery. As a direct result of PCSRF allocations, State in-kind and other matching funds have exceeded \$1.3 billion in restoration investments. For the past 9 years, non-Federal contributing funds have surpassed PCSRF awards.

# Fourteen years of PCSRF progress sets the stage for salmon recovery, but more work remains

Salmon recovery will take decades to achieve. More than 100 years of land-use practices contributed to the decline of Pacific salmon populations, and it will take many years to address the stresses placed on salmon and their habitats. Current estimates indicate that it will take more than 50 years and more than \$5 billion in Federal and non-Federal investments to recover the 28 listed salmon species.<sup>xvi</sup> As such, salmon restoration requires a long-term and consistent commitment to restoring degraded ecosystems and changing human practices.

## The value of recovering Pacific salmon

Recovering Pacific salmon provides long-term economic stability, allows the United States to honor its commitment to reserved Tribal fishing rights, and affords maximum regulatory flexibility. PCSRF contributes to each of these objectives described below.

**Economic Stability** - Recent data illustrate that commercial, recreational, and Tribal salmon fisheries on the West Coast generated \$120 million in personal income in 2012, which supported 4,000 full-time jobs. The economic value of Alaska salmon fisheries in 2011 was \$714 million, supporting approximately 24,000 jobs.<sup>xvii</sup> Salmon fisheries are important economic drivers and as the stocks grow and recover, so too will the economic gains and long-term fishing opportunities.

**Tribal Rights** - Salmon fisheries also hold significant importance to West Coast Indian Tribes. For generations, they have harvested salmon for cultural ceremonies, subsistence, and commerce, and

many Tribes hold treaty-reserved rights to fish in their “usual and accustomed” places. Recovering listed salmon populations protects and honors the Tribes’ rights to harvest these stocks, both those who hold treaties with the U.S. Government and those that do not, as they have done from time immemorial.

**Regulatory Flexibility** - PCSRF is NMFS’ most powerful tool for advancing salmon recovery and improving the status of vulnerable populations. Improving the status of populations and reducing their extinction risk affords NMFS more flexibility in implementing the ESA and its accompanying regulations and protections. When populations are at lower levels of risk, NMFS is afforded greater discretion and is able to better balance restrictions on agriculture, municipalities, fishing communities, and other sectors with the recovery needs of listed salmon. This flexibility is critical when dealing with catastrophic events, such as droughts.



Coho salmon. Photo: Ocean Media Center, NOAA

# PCSRF at work in California

In California, PCSRF is administered by the California Department of Fish and Wildlife through their Fisheries Restoration Grant Program,<sup>xviii</sup> which is a collaborative effort dedicated to restoring salmon habitat for the State's 10 listed species. The Fisheries Restoration Grant Program funds:

- Projects that provide demonstrable and measurable benefits to Pacific salmon, steelhead, and their habitats.
- Restoration actions addressing factors limiting salmon productivity, as specified in science-based recovery plans.
- Effectiveness monitoring of habitat restoration actions, or status monitoring projects, that contribute to salmon and steelhead viability assessments.

- Outreach, coordination, research, monitoring, and assessment projects that directly support the goals of the program.

In California, PCSRF dollars are matched by at least 33 percent in State funds. These funds are distributed through the competitive Proposal Solicitation Notice process, through which Tribes, government agencies, and non-profit organizations submit project proposals. Proposals must be consistent with a predetermined suite of restoration needs identified for select watersheds, as specified in salmon and steelhead recovery plans.



*“The Pacific Coastal Salmon Recovery Fund is critical to listed salmon and steelhead in California. We and our Federal, State, and local partners have a proven track record of putting these dollars to work on the right projects. The loss of these funds would be an unfortunate step in the wrong direction for salmon and steelhead recovery efforts in California.”*

- Charlton H. Bonham,  
Director of the California Department of Fish & Wildlife

## REDWOOD CREEK-MUIR BEACH WATERSHED RESTORATION PROJECT

**PCSRF Funds: \$1.2 million**

- **Matching & Other Funds: \$12.8 million**
- **Listed Species: Threatened Central California Coast steelhead and endangered Central California Coast Coho salmon**

# Redwood Creek-Muir Beach Watershed Restoration Project

Redwood Creek begins in the peaks of Marin County's Mount Tamalpais, flowing through forests of Muir Woods, open grasslands, patches of chaparral, ephemeral wetlands, and riparian woodland, reaching the Pacific Ocean at Muir Beach. The entire watershed is just miles north of one of the Nation's most densely populated regions, yet it harbors an incredibly diverse ecosystem.

The Redwood Creek watershed, part of the Golden Gate Biosphere Reserve, is one of the 25 global biodiversity "hot spots" recognized by The Nature Conservancy and targeted by the global conservation community as key to preserving the world's ecosystems.

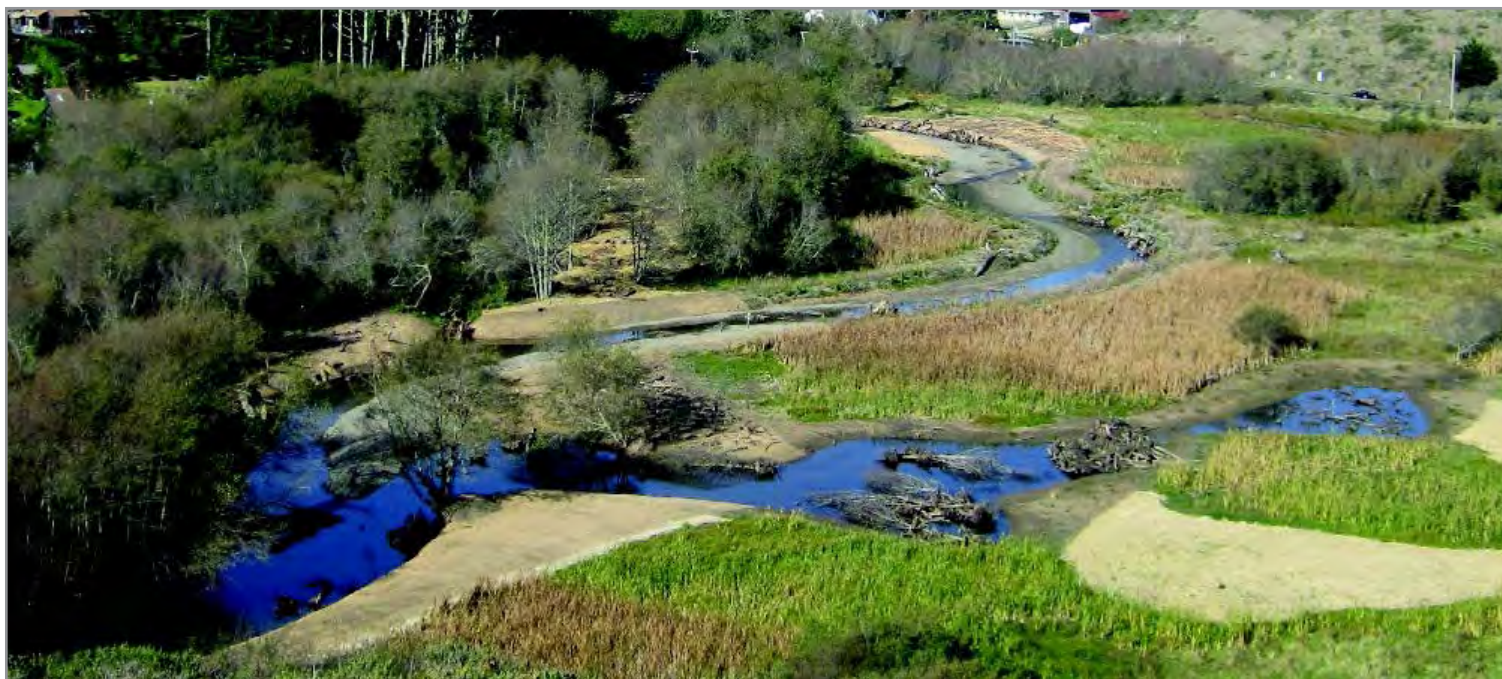
The watershed is home to threatened and endangered species of Coho salmon. With support from PCSRF, the Redwood Creek-Muir Beach Watershed Restoration Project is designed to restore the habitat features critical to the early and adult life stages of Coho salmon, while also providing benefits to the local community. The installation of side channels, backwater sloughs, and large wood, for example, provides shelter for young salmon, allowing them to forage and rear. These restored features also protect public safety during extreme flooding.

The full suite of activities to protect and restore this watershed, undertaken with support from PCSRF dollars and 10 contributing partners, include: floodplain and wetland restoration; sediment control; removal of invasive plant species and plantings of native vegetation; removal of an old levee road; stream channel construction and alignment; and a pedestrian bridge over the floodplain to allow for natural creek and wetland processes while providing visitor access to the beach and new trails. The project includes critical monitoring to assess the ecological contributions of the restored features to Coho recovery. Status and trend monitoring will allow scientists to better understand how Coho salmon utilize the newly restored landscape.



Photos of the Redwood Creek channel alignment and off-channel pond complex, including construction of 5502 feet of new channel, an off-channel point within the flood plain, and the removal of a levee road.

Top: before March 2009. Middle: same view, after Phase 2, November 2010. Below: after Phase 3, November 2011. All photos: National Park Service



# PCSRF at work in Oregon

In Oregon, PCSRF is implemented by the Oregon Watershed Enhancement Board (OWEB), with substantial match, well in excess of the required 33 percent, provided constitutionally dedicated permanent funding by State lottery funds. PCSRF complements *The Oregon Plan for Salmon and Watersheds* (Oregon Plan), a program designed to protect and recover the 15 listed salmon and steelhead species in the State. The Oregon Plan framework aligns with PCSRF objectives, prioritizing investments based on conservation outcomes identified in science-based recovery plans, water quality improvement plans, and broader natural resources programs. Together, PCSRF funding and Oregon's significant matching funds advance long-term salmon and steelhead recovery goals, which include:

- Conservation and restoration of habitat;
- Stable and increasing populations of protected species;
- Sustainably managed fish stocks;
- Knowledgeable residents acting as sound stewards of coastal and marine ecosystems; and
- Incorporation of ecosystem and sustainable development principles into community planning and management programs.

Approximately 80 percent of PCSRF funds in Oregon are awarded through regular and open competitive selection processes administered by OWEB.<sup>xx</sup> These OWEB grant programs use a science-based selection process, incorporating established standards and criteria for predetermined geographic areas of need.

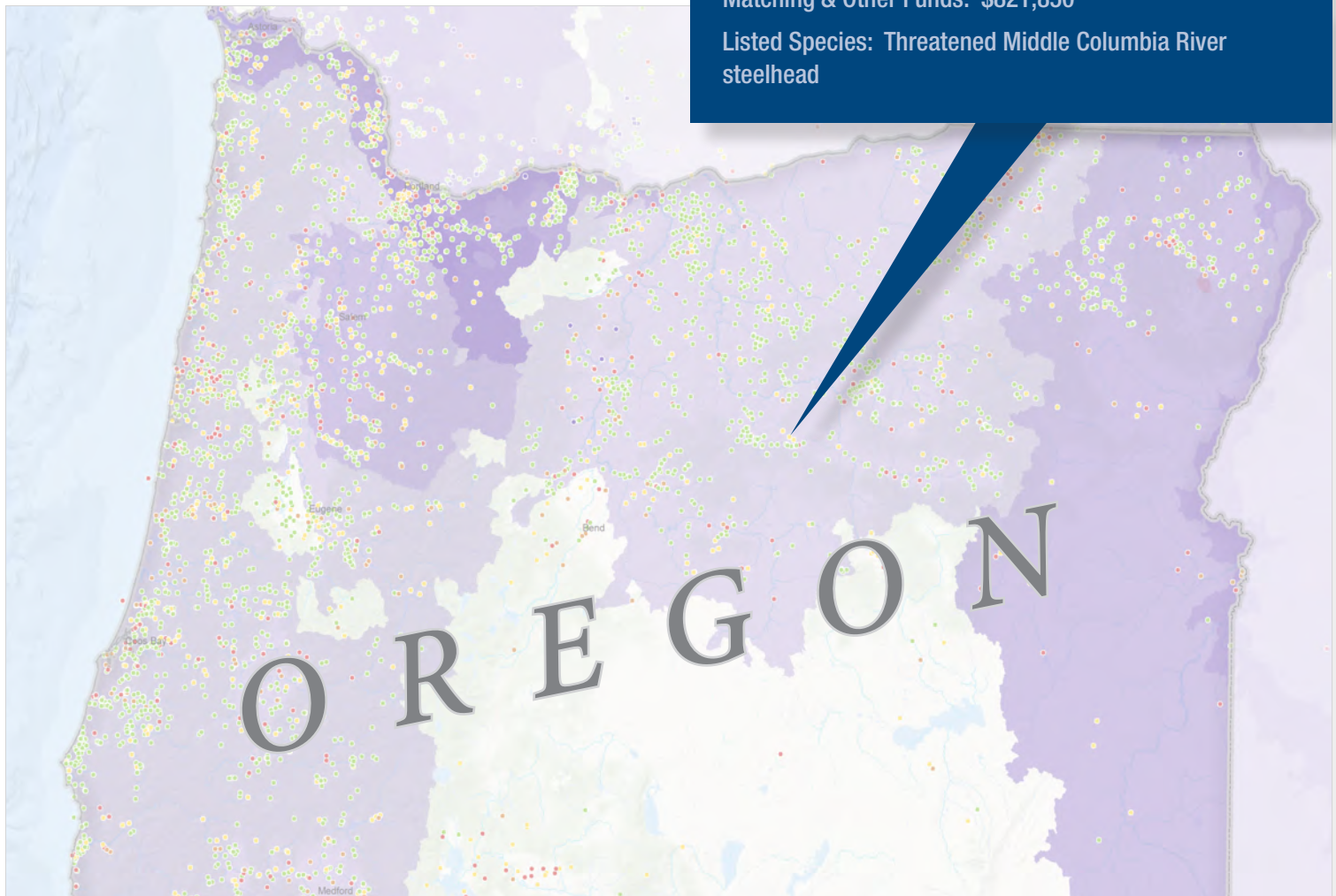
The remaining PCSRF funds are allocated through a non-competitive award process in support of four conservation programs that reside in State agencies: the Oregon Department of Fish and Wildlife's (ODFW) Fish Screening and Passage Program, Western Oregon Stream Restoration Program, Conservation and Recovery Plan Implementation and Technical Support Program, and ODFW's Oregon Plan Salmon and Steelhead Monitoring Program. These non-competitive awards recognize the unique expertise that resides within these State programs, and reflect the invaluable contribution these programs provide to achieving PCSRF's program priorities and advancing salmon protection and recovery in Oregon.

## MOUNTAIN CREEK RESTORATION PROJECT

PCSRF Funds: \$533,735

Matching & Other Funds: \$821,850

Listed Species: Threatened Middle Columbia River steelhead



# Mountain Creek Restoration Project

In Oregon's John Day River basin, PCSRF funds, together with significant financial support from OWEB and its partners, supported the design, restoration, and monitoring of more than three miles of Mountain Creek. The project is designed to restore natural habitat processes, which had been impaired since the 1950s when a bypass channel was excavated and Mountain Creek diverted to protect a private ranch from flooding.

Through this multi-year project, partners are restoring the historic stream channel, increasing channel capacity with bank pull-backs, installing large wood to create habitat complexity, removing passage barriers, creating wetlands, fencing and restoring riparian habitat, and protecting instream flows through irrigation improvements. When completed in 2015, in-stream flows will be fully restored, channel structure improved, and threatened steelhead and other aquatic species, like Tribally important lamprey, will once again be able to migrate unimpeded through the creek.

*"The generous contributions from NOAA Fisheries through the PCSRF program were critical to making this project happen in a strategically important area for steelhead recovery efforts. This project is another successful example of how PCSRF funds complement State capital investments through local partnerships to achieve significant accomplishments for fish and habitat."*

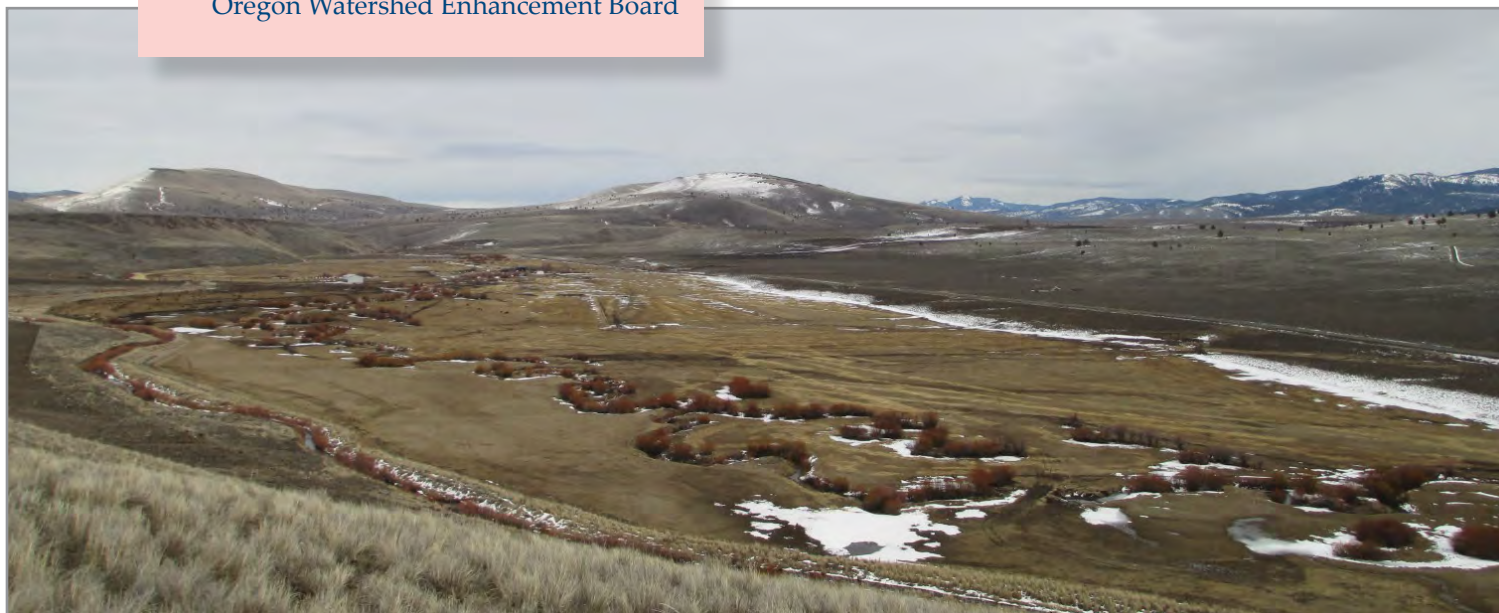
- Meta Loftsgaarden, Executive Director,  
Oregon Watershed Enhancement Board



Looking west: bridge crossing, planting and exclusion fencing along re-introduced historic channel. Photo: Sue Greer, Oregon Watershed Enhancement Board



Looking east: exclusion fencing along re-introduced historic channel. Photo: Sue Greer, Oregon Watershed Enhancement Board



Overview of the Mountain Creek historic channel. Photo: Sue Greer, Oregon Watershed Enhancement Board

# PCSRF at work in Washington

In Washington, PCSRF is implemented by the Recreation and Conservation Office in support of efforts to restore the 17 listed salmon species in the State, many of which hold significant importance to local Tribes. The State's recovery goals and programs align with PCSRF priorities, including:

- High-priority, science-based habitat projects that protect and restore salmon habitat, address limiting factors, advance recovery plans, and support the exercise of Tribal treaty rights.
- Hatchery reform actions that improve wild fish "fitness," maximize habitat restoration benefits, maintain wild gene pools or reintroduce stocks, and support Tribal treaty rights.
- Monitoring to evaluate salmon habitat project effectiveness, measure recovery progress, and adaptively manage based on new information.
- Salmon recovery plan implementation that ensures projects are drawn from science-based recovery plans and are technically sound, locally supported, and prioritized to target factors limiting survival.

More than 80 percent of PCSRF dollars are allocated by the State's Salmon Recovery Funding Board through a competitive and scientifically-based approval process.<sup>xx</sup> The remaining funds are allocated to the Washington Department of Fish and Wildlife and the Northwest Indian Fisheries Commission for hatchery reform and harvest management activities.

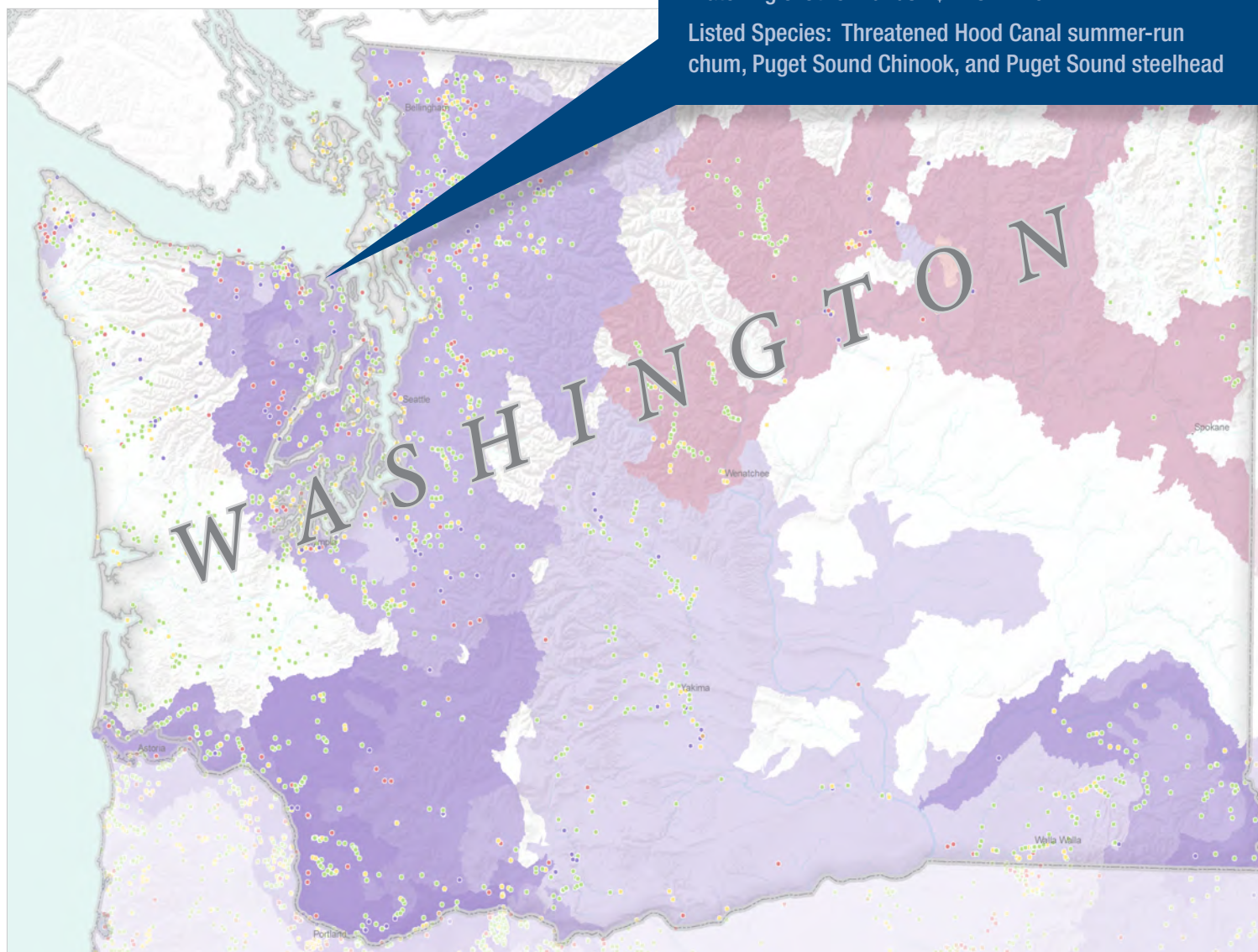
Annually, a project monitoring report is published that evaluates the effectiveness of various restoration techniques. In addition, every two years the Washington Recreation and Conservation Office publishes *The State of Salmon in Watersheds* report (<http://stateofsalmon.wa.gov/>), which summarizes population status data and examines key habitat indicators from across the State to track the progress of salmon recovery.

## WASHINGTON HARBOR RESTORATION PROJECT

PCSRF Funds: \$116,697

Matching & Other Funds: \$1.75 million

Listed Species: Threatened Hood Canal summer-run chum, Puget Sound Chinook, and Puget Sound steelhead





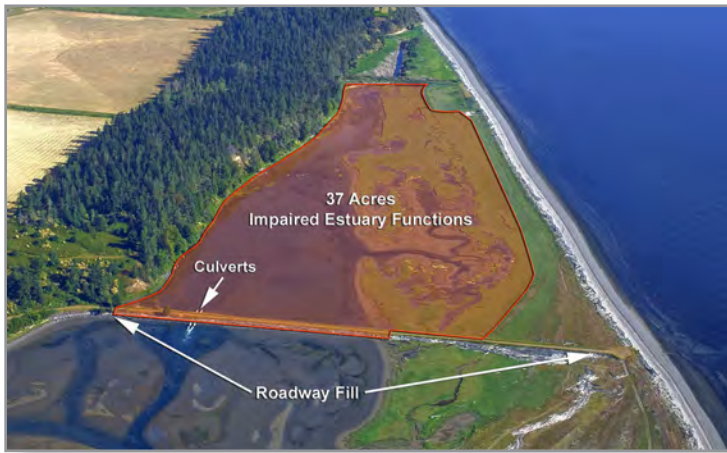
# Washington Harbor Restoration Project

Washington Harbor is the largest pocket estuary on the Strait of Juan de Fuca. The estuary provides important rearing habitat for threatened Chinook, chum, and steelhead as they migrate through the harbor to the Pacific Ocean. These species also utilize the estuary upon their return as adults. *The Puget Sound Chinook Recovery Plan* identifies Washington Harbor as a high priority area requiring restoration.

With support from PCSRF, the Jamestown S’Klallam Tribe, in partnership with Federal, State, and private partners, removed 600 feet of causeway fill, which included the removal of two six-foot culverts and a roadway that were later replaced with a bridge. These structures blocked threatened salmon and steelhead from utilizing 37 acres of prime estuarine habitat. The project

restored tidal hydrology, habitat connectivity, fish access, and habitat forming processes within Washington Harbor, a 118-acre barrier estuary replete with estuarine marsh, eelgrass meadows, and tide flats.

The construction phase of this project was completed in March 2014. The Jamestown S’Klallam Tribe is now monitoring the site, and early observations indicate that the restored estuary is functioning well with fish accessing foraging areas. Seabirds, forage fish, and shellfish have also been documented using the restored site. The project is expected to yield several long-term benefits, such as enhanced water quality and the elimination of hyper-saline water in the northern estuary, which severely impacts shellfish.



Before: roadway fill and a double barrel culvert restricted aquatic access to 37 acres of tidal estuary habitat. Photo: Washington Department of Ecology, with graphics by the Jamestown S’Klallam Tribe.



The project greatly improved the hydrologic connection and fish access to Washington Harbor lagoon by replacing 600 feet of roadway fill and the culvert (above, left) with a bridge (above, right). Photos: Randy Johnson, Jamestown S’Klallam Tribe



The new bridge allows unrestricted aquatic access to the estuary. Photo: Washington Department of Ecology.

*“PCSRF helps Washington leverage our investment in salmon recovery. We nearly double the PCSRF money with contributions from State and local sources. That means we get nearly twice the bang for every PCSRF dollar invested. Since 1999, we’ve leveraged more than \$240 million in local matching funds, and the State has invested more than \$358 million in matching funds for salmon recovery. Not only are we stretching our dollars further and focusing them on more effective projects, we are also helping local economies. When we fund projects, we create jobs, often in more rural, cash-strapped communities.”*

- Kaleen Cottingham,  
Director of Washington’s Recreation & Conservation Office

# PCSRF at work in Idaho

The Idaho Governor's Office of Species Conservation manages PCSRF through its "Idaho Program," a program dedicated to advancing projects that benefit the State's four listed salmon and steelhead species and their respective habitats. Projects are developed collaboratively using locally developed forums, and a selection process that includes technical and scientific review and ensures projects address the factors limiting the abundance and productivity of listed populations.

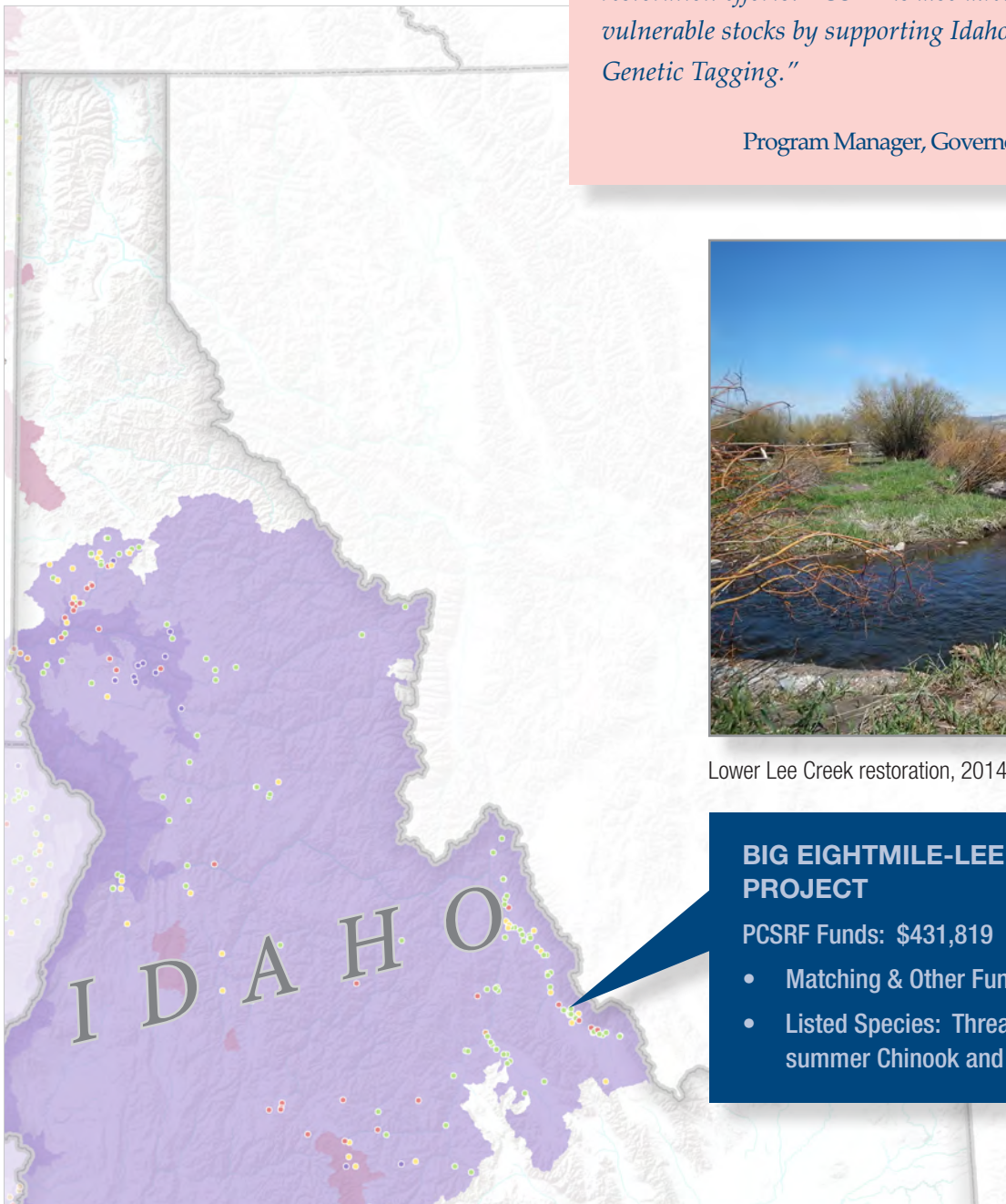
Idaho Program priorities:

- Address major habitat limiting factors;
- Enhance salmon habitat availability and quality; and
- Improve management practices.

All PCSRF funds are distributed through a competitive process. Approximately 87 percent of PCSRF dollars are allocated to projects that address key limiting factors, as identified in the draft salmon and steelhead recovery plan. Monitoring activities to evaluate the effectiveness of restoration strategies constitute ten percent of Idaho's PCSRF-funded program, while administrative expenses are capped at three percent. Project sponsors, including the State of Idaho, provide a 33 percent non-Federal funding match.

*"NOAA Fisheries' PCSRF Program is contributing to the recovery of Idaho's listed stocks by helping to fund important habitat restoration efforts. PCSRF is also advancing our knowledge of these vulnerable stocks by supporting Idaho programs like Parental-Based Genetic Tagging."*

- Mike Edmondson,  
Program Manager, Governor's Office of Species Conservation



Lower Lee Creek restoration, 2014. Photo: Ron Troy, The Nature Conservancy

## BIG EIGHTMILE-LEE CREEK RESTORATION PROJECT

PCSRF Funds: \$431,819

- Matching & Other Funds: \$178,000
- Listed Species: Threatened Snake River spring/summer Chinook and Snake River steelhead

# Big Eightmile-Lee Creek Restoration Project

In Idaho's upper Lemhi River sub-basin, with funding support from PCSRF, the Shoshone-Bannock Tribes, and several other partners are improving spawning and rearing habitats for threatened Snake River spring/summer Chinook and steelhead. Through the Big Eightmile-Lee Creek Project, one mile of Lee Creek is being returned to its historic channel; seven diversions that were major impediments to fish passage were removed, including two diversion points on the Lemhi River; and multiple barriers are being removed along Big Eightmile Creek, Lee Creek, Walters Creek, and the Lemhi River.

Estimates indicate the project will provide a cumulative flow increase of approximately 7.00 cubic feet per second in the upper Lemhi Basin during the low flow periods of the irrigation season, and 18.34 cubic feet per second during high spring flows. In addition, sediment loads will be reduced and several points of fish entrainment eliminated thanks to this project. Fish are not the only ones to benefit from the Big Eightmile-Lee Creek Project. This project is also benefiting ranchers, who are using water more efficiently and increasing their agricultural yields.



Lee Creek restoration, looking downstream from Highway 28. Photo: Ron Troy, The Nature Conservancy

*"This is one of those projects that hits all the marks: the re-connection of Lee Creek to its floodplain will jumpstart natural processes once again; riparian vegetation has been re-established and protected; and off-channel water for livestock has been provided. This project has brought about a lot of collaboration and brought us ranchers on board. It was really important to us to use local suppliers, materials, and labor. In addition, we have built up the experience of our local contractors in working with habitat restoration projects. When we look back in 5-10 years we will no doubt see the benefits to the fish and to the economy."*

- Merrill Beyeler,  
Lemhi Rancher

# PCSRF at work in Alaska

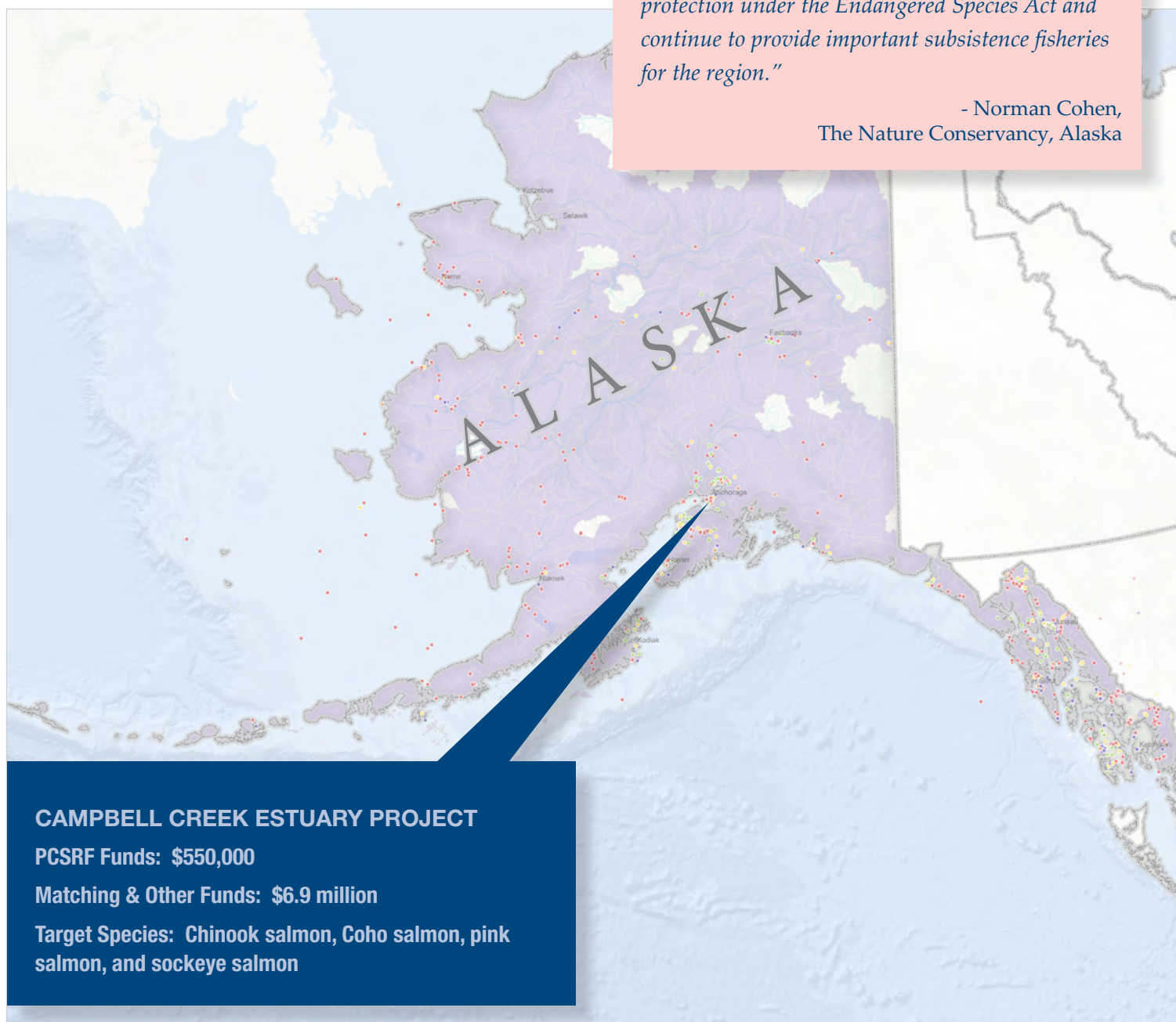
The Alaska Department of Fish and Game manages PCSRF funding through its Alaska Sustainable Salmon Fund (AKSSF), a program dedicated to habitat conservation and maintaining the State's subsistence-based salmon fisheries. This management model is the most cost-effective, as it focuses on restoring degraded habitats and protecting healthy salmon populations today rather than rebuilding them from a threatened or endangered status in the future.

The AKSSF program uses rigorous science-based processes for evaluating project proposals. Regional and Statewide science panels ensure the projects are focused on high priority activities and regions. All proposals undergo review by independent technical experts whose scores are the primary basis for funding decisions.

All PCSRF funds are distributed through a competitive process. Nearly two-thirds are allocated to protection or restoration of salmon habitat, with remaining funds allocated to monitoring salmon populations used for native subsistence fishing. Program administration costs are capped at three percent. Project sponsors provide the 33 percent non-Federal matching funds.

*"The Alaska Sustainable Salmon Fund, with significant support from PCSRF, is helping restore the full potential of Alaska's salmon streams. These programs ensure Alaska's salmon do not require protection under the Endangered Species Act and continue to provide important subsistence fisheries for the region."*

- Norman Cohen,  
The Nature Conservancy, Alaska



## CAMPBELL CREEK ESTUARY PROJECT

PCSRF Funds: \$550,000

Matching & Other Funds: \$6.9 million

Target Species: Chinook salmon, Coho salmon, pink salmon, and sockeye salmon

# Campbell Creek Estuary Project

Amid rapid population growth in south-central Alaska, PCSRF dollars are contributing to the acquisition of conservation easements for the protection of vital salmon habitat. After prioritizing 100,000 privately owned land parcels, Great Land Trust, a non-profit land conservation organization, purchased or obtained properties for the parcels ranked of highest benefit to salmon, including the 60-acre Campbell Creek Estuary. This acquisition conserves the last link in a pristine habitat corridor, connecting Campbell Creek's headwaters in Chugach State Park to the adjacent 34,500-acre Anchorage Coastal Wildlife Refuge.

Conservation of the estuary benefits many species of fish and wildlife in addition to the five Pacific salmon species. Located at the junction of two National Audubon Society Important Bird Areas, the estuary harbors 220 species of birds including thousands of migratory snow geese, nesting sandhill cranes, and a myriad of shorebirds. Federally endangered beluga whales pursue salmon into the lower creek along with resident river otters and bald eagles. The estuary is protected by an upland buffer that functions as a biofilter for urban runoff and provides additional habitat for moose, songbirds, and other wildlife.

In addition to fish and wildlife habitat, this land parcel provides recreational and educational opportunities for visitors. A trail network, together with interpretive signage, traverses the upland buffer and connects with two estuary overlooks for viewing sandhill cranes. The estuary is closed to the public during the breeding season, but is fully accessible for outdoor recreation during winter months.



A female moose and twins browse in the Campbell Creek estuary. Photo: Carl Johnson



Campbell Creek flowing through the estuary. Photo: Carl Johnson

## Supporting the Cultural Heritage of West Coast Tribes

Salmon and steelhead are foundational to the culture and history of West Coast Indian Tribes. For generations, they have harvested these fish for ceremonial and subsistence traditions, as well as commerce. Many Tribes hold reserved rights to fish in their “usual and accustomed” places and serve as co-managers of the resource. Many other Tribes hold trust rights and manage trust resources associated with their reservation. PCSRF plays a vital role in honoring Tribal reserved fishing rights and trust responsibilities, and helps to create sustainable fishing opportunity for the future. Tribal Commissions and Consortia along the Pacific Coast, as well as individual Tribes, may apply for PCSRF funding.

The Klamath River Inter-Tribal Fish and Water Commission (KRITFWC) manages PCSRF funding through its Salmon and Steelhead Recovery Program, a program dedicated to conserving and restoring Pacific salmon and steelhead in the Klamath River Basin. The KRITFWC provides technical assistance, information sharing, policy coordination, and grant administration. KRITFWC establishes selection criteria for project proposals by its member Tribes: the Yurok Tribe, Hoopa Valley Tribe, Karuk Tribe, and Klamath Tribes.

Through a non-competitive process, Tribes develop project proposals. Under treaty, each of the member Tribes has reserved sovereign rights and authorities. As independent sovereigns, Tribes assess and prioritize projects consistent with Endangered Species Act recovery plans and their own restoration needs. Tribes allocate PCSRF funds for projects that: address factors limiting the productivity of listed Coho salmon (approximately 63 percent of projects); conduct status and effectiveness monitoring (approximately 29 percent of projects); and undertake other activities consistent with the Congressional authorization, such as scientific research, planning, and coordination (approximately 5 percent of projects). Program administration costs are capped at three percent and there is not a requirement for a non-Federal funding match.



Habitat before construction. Photo: Klamath River Inter-Tribal Fish and Water Commission

### KLAMATH RIVER COHO SALMON HABITAT RESTORATION PROJECT

PCSRF Funds: \$115,000

Listed Species: Threatened Southern Oregon/Northern California Coho salmon

# Klamath River Coho salmon Habitat Restoration Project

To contribute to the recovery of Coho salmon in the Klamath River, the Karuk and Yurok Tribes are researching salmon ecology to better understand their use of critical habitat in the basin. Winter rearing habitat associated with properly functioning floodplains has been lost due to decades of land use practices, such as mining and road construction. Coho salmon rear in freshwater for an entire year and depend on off-channel habitats found along floodplains to survive during these months.

The lessons learned from the research have informed habitat restoration strategies designed to restore ecological function and provide lasting benefits to Klamath River Coho salmon. This project funded landowner outreach, alternatives analyses, and the completion of engineering designs for a suite of projects that will provide immediate habitat benefits to Coho salmon through the construction of off-channel habitats (beaver ponds,

alcoves, side channels) and longer-term benefits through the restoration of proper floodplain channel function. Public safety and protection of private property are additional benefits of restoring floodplain function, which go beyond traditional salmon recovery benefits.

Since 2011, this planning and design effort has resulted in several PCSRF- and partner-funded restoration projects, including the construction of seven off-channel habitats in the most ecologically important areas for Coho. Five of these habitat construction projects were completed in Seiad Creek alone. Seiad Creek is one of the most productive tributaries in the Middle Klamath sub-basin for Coho salmon. These Seiad Creek restoration projects have reconstructed the historic floodplain and re-connected off-channel habitat features utilized by rearing juvenile Coho salmon.



Off-channel pond after restoration. Photo: Klamath River Inter-Tribal Fish and Water Commission

# Columbia River Inter-Tribal Fish Commission

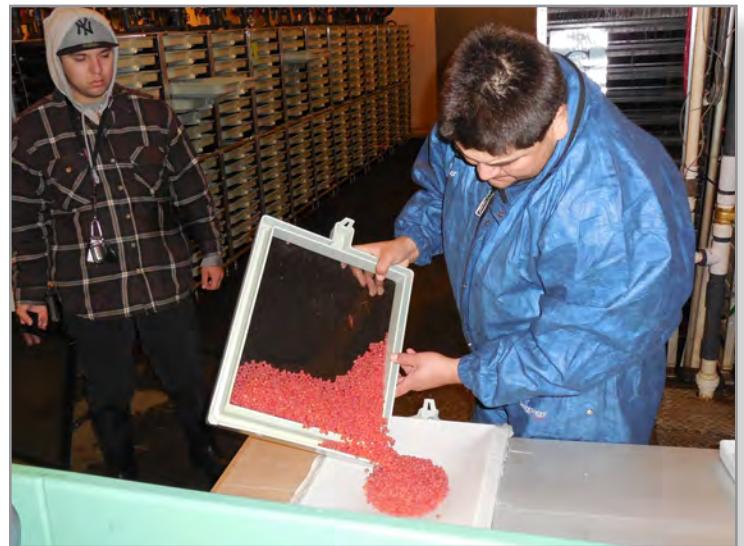
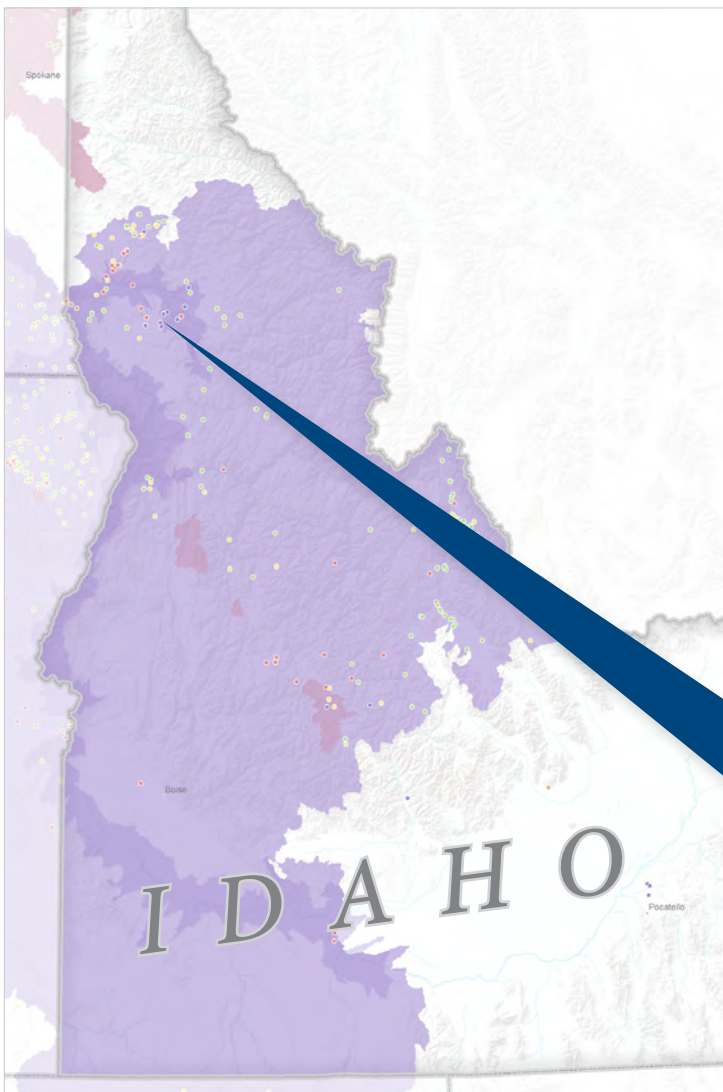
The Columbia River Inter-Tribal Fish Commission (CRITFC) was founded in 1977 by the four Columbia River treaty Tribes of the Pacific Northwest: the Confederated Tribes of the Umatilla Indian Reservation, the Confederated Tribes of the Warm Springs Reservation of Oregon, the Confederated Tribes and Bands of the Yakama Nation, and the Nez Perce Tribe. CRITFC is the technical support and coordinating agency for the fisheries management policies of its member Tribes and is governed by the Tribes' fish and wildlife committees (CRITFC Commissioners). The CRITFC Tribes have developed the capacity to implement fishery programs as co-managers across their ancestral homelands that collectively stretch over one-third of the entire Columbia River Basin.

CRITFC manages and administers PCSRF on behalf of its member Tribes, focusing on implementing salmon habitat restoration, stock assessments, research, and supplementation activities in the Columbia River Basin. Since 2000, CRITFC has implemented 291 PCSRF projects, of which 245 are completed and 46 are still ongoing. Member Tribes have restored over 3,600 acres of riparian habitat and acquired nearly 16,600 acres for permanent salmon habitat protection. Approximately 83 percent of the PCSRF-funded

projects focus on factors limiting the productivity of listed salmon and steelhead, while 13 percent contribute to population status and project effectiveness monitoring. Program administrative expenses are capped at three percent.

Each Tribe conducts an internal competitive process and develops project proposals, submitting them to the CRITFC/Tribal PCSRF Science Review Team for evaluation. Proposals are evaluated with respect to the Tribes' science principles articulated in their *Wy-Kan-Ush-Mi Wa-Kish-Wit, "Spirit of the Salmon"* plan, which establishes a framework for restoring fish stocks in the Columbia River Basin. Project proposals are scored on whether they have:

1. Sound science principles;
2. Defined benefits to salmon;
3. Defined objectives and outcomes;
4. Provisions for monitoring and evaluation; and a
5. Defined plan to meet permitting requirements.



Jackson Ellenwood watches Steve Coomer prepare eyed Coho eggs for their 6-hour transport from Dworshak National Fish Hatchery to Eagle Creek National Fish Hatchery. Photo: Mike Bisbee, Nez Perce Tribe

## NEZ PERCE COHO SALMON SUPPLEMENTATION PROJECT

PCSRF Funds: \$4,507,261

Tribally Important Species: Coho salmon



# Nez Perce Coho Salmon Supplementation Project

Abundant numbers of Coho salmon once returned to Idaho's Clearwater River. The construction of Lewiston Dam in 1927 eliminated their return and they were officially declared extirpated, or non-existent, in 1986 in the Clearwater and other Snake River sub-basins. The loss of this species was culturally and ecologically significant, and deemed unacceptable to the Nez Perce Tribe.

The Nez Perce Tribe initiated its Clearwater Coho Restoration Project in 1994. The result of an agreement under *United States v. Oregon* between the Tribes, State, and Federal Government allowed the Nez Perce Tribe to use surplus Coho eggs from the lower Columbia River to reintroduce the species into the Clearwater River sub-basin. Today, thanks to support from PCSRF, an average of 3,000 adult fish are completing their 500 mile journey and returning to the Clearwater River annually, providing all the broodstock necessary for sustaining the restoration program.

The Clearwater Coho Restoration Project provides benefits to the Nez Perce Tribe and the region. Returning adult Coho support a Tribal and non-Tribal

fishery along the Columbia River and provide the Tribal hatchery program with a local broodstock. Because of this program, Tribal members are exercising their treaty reserved fishing right, and Coho are once again spawning in the wild.

*"Reintroduction of Coho is succeeding in the Clearwater Basin. The only reason the Nez Perce Tribe has been able to bring them back, and keep them here, is because of essential funding from the Pacific Coastal Salmon Recovery Fund. Coho were extirpated from the Clearwater when this program began. Returning Coho are now being harvested and spawning; part of our cultural connection to fish has been re-established."*

- Silas Whitman,  
Nez Perce Tribal Executive Committee



Tish Whitman collecting the last few eggs out of an adult female Coho. Photo: Mike Bisbee Nez Perce Tribe

# Northwest Indian Fisheries Commission

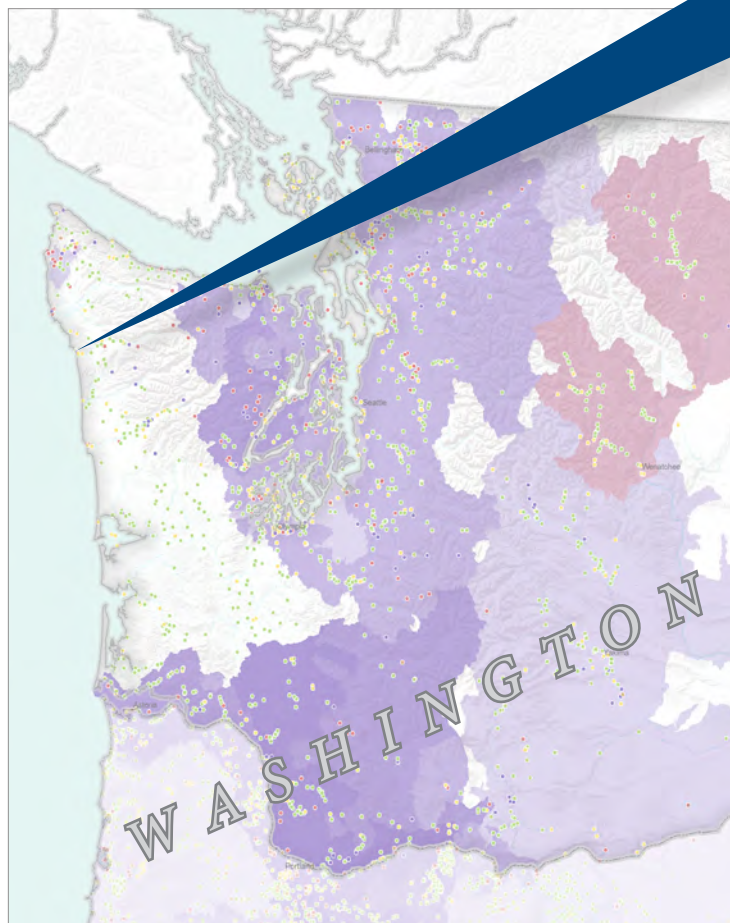
Salmon and steelhead runs returning to Puget Sound and Washington's outer coast contribute to the meaningful exercise of Tribal treaty-reserved harvest rights, allowing the Tribes to maintain their cultural and economic welfare. The Northwest Indian Fisheries Commission (NWIFC) member Tribes are co-managers of the fisheries resources in the region and include the: Lummi, Nooksack, Swinomish, Upper Skagit, Sauk-Suiattle, Stillaguamish, Tulalip, Suquamish, Muckleshoot, Puyallup, Nisqually, Squaxin Island, Skokomish, Port Gamble S'Klallam, Jamestown S'Klallam, Lower Elwha Klallam, Makah, Quileute, Hoh, and Quinault.

The NWIFC manages PCSRF funds to the benefit of its member Tribes. PCSRF supports the Tribal salmon recovery objectives captured in each Tribe's natural resources program. These funds are used to conduct projects that promote treaty fishing rights and advance the recovery of salmon and steelhead.

Approximately 39 percent of PCSRF funding to NWIFC member Tribes is allocated to projects that address factors limiting the productivity of salmon and steelhead; while roughly 33 percent supports projects related to population status and project effectiveness monitoring; and 28 percent is assigned to other activities consistent with the Congressional authorization, such as planning and coordination. Individual Tribes select projects for submission based on their highest priorities for this funding.

Through a non-competitive process, Tribes propose projects for NWIFC review and approval. Proposals implement collaboratively developed watershed recovery plans and strategies that reflect local priorities. The NWIFC reviews each proposal for alignment with PCSRF program priorities and objectives, as well as local watershed planning documents, and Tribal natural resource strategy documents. Project approval is conditioned by the following standards:

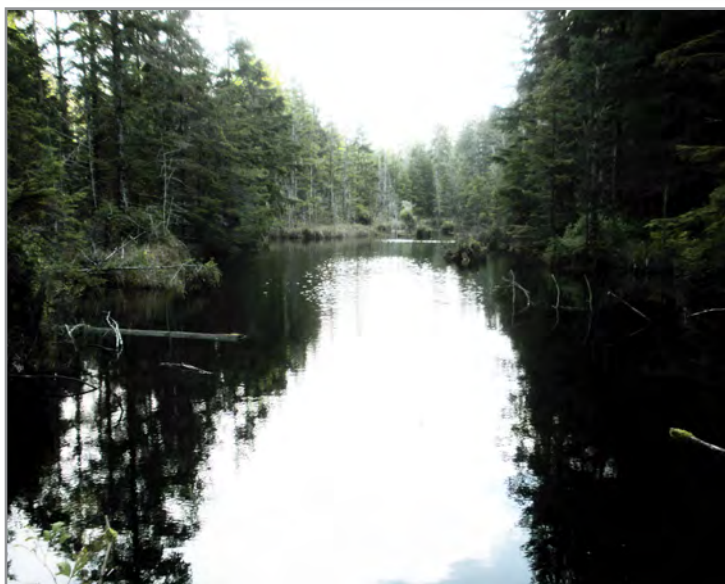
1. Project increases the amount and functionality of habitat by addressing limiting factors;
2. Project assesses status and trend and/or engages in effectiveness monitoring to assess the reproductive success, abundance, and spatial distribution of salmon species and inform whether habitat actions are alleviating limiting factors;
3. Project increases treaty fishing opportunities and/or better informs hatchery and harvest management decisions;
4. Project educates and informs the public toward making individual choices that promote the persistence of salmon and steelhead; and/or
5. Project supports natural resources management decision-making that confers conservation benefits while concurrently providing treaty fishing opportunity.



## CHALAAAT CREEK FISH PASSAGE, CHANNEL CONSTRUCTION AND HABITAT ENHANCEMENT

PCSRF Funding: \$218,220

Tribally Important Species: Fall Coho salmon and winter steelhead



This 2-acre pond is accessible to aquatic life after an impassible culvert was removed. Photo: Northwest Indian Fisheries Commission

# Chalaat Creek Fish Passage, Channel Construction & Habitat Enhancement

Chalaat Creek, located on the Hoh Reservation half a mile upstream of where the Hoh River meets the Pacific Ocean, is a low gradient, wall-based channel system that historically produced significant runs of fall Coho. In the 1950s, road construction to support timber harvest on the Reservation resulted in the unintentional creation of a three-acre pond, ideal for the rearing of wild juvenile Coho salmon.

Unfortunately, a steeply-sloped, perched corrugated metal culvert, installed at the pond's outlet during original road construction, blocked the upstream migration of fish for nearly 60 years. In September 2009, installation of a pre-cast, concrete bridge and construction of 330-feet of low gradient stream channel allowed juvenile and adult Coho salmon and steelhead to access the pond as well as 2.75 miles of prime, low-gradient habitat upstream. In December 2009, adult Coho were observed spawning under the new bridge and in the constructed access channel. Adult winter steelhead were documented above and below the bridge in January 2010. Juvenile salmon and steelhead counts, which have been conducted on Chalaat Creek since spring 2007, have shown a steady increase in Coho smolt production since access was enhanced in 2009.

Construction of the concrete bridge also provided Hoh Tribal members with access to a tsunami escape route, leading to the top of a 150-foot-high ridge approximately one-half mile south of Tribal housing and administration buildings. Future plans for a Tribal cemetery on this ridge are also made feasible because of the new bridge.

*"Tribal treaty rights depend on salmon being available for harvest. Today our treaty rights are at risk. Wild salmon populations are declining because we are losing salmon habitat faster than it can be restored. The Pacific Coastal Recovery Fund is critical if we are to be successful in recovering salmon. These funds are necessary for the protection and restoration of essential salmon habitat and vital for the support of treaty rights by sustaining Tribal fisheries."*

- Lorraine Loomis,  
NWIFC Chair



Chalaat Creek's constructed channel leads to the pond. Photo: Northwest Indian Fisheries Commission

# Arctic-Yukon Kuskokwim Tribal Consortium

The Arctic-Yukon Kuskokwim (AYK) Tribal Consortium includes three members: Tanana Chiefs Conference, Association of Village Council Presidents, and Kawarak, Incorporated. The AYK Tribal Consortium administers PCSRF funds through the AYK Sustainable Salmon Initiative (AYK SSI). The AYK SSI was developed as a proactive science-based program working cooperatively to identify and address the critical salmon research needs facing this region. The productivity of Chinook salmon populations in the Yukon and Kuskokwim River watersheds and southern Norton Sound has declined to the point that they are not meeting their escapement needs which is directly impacting the exercise of Alaskan native subsistence fishing. AYK SSI funded research is shedding light on the key factors limiting these Chinook salmon populations, and informing near-term management actions and priority restoration projects to help rebuild these populations and sustain native fisheries.

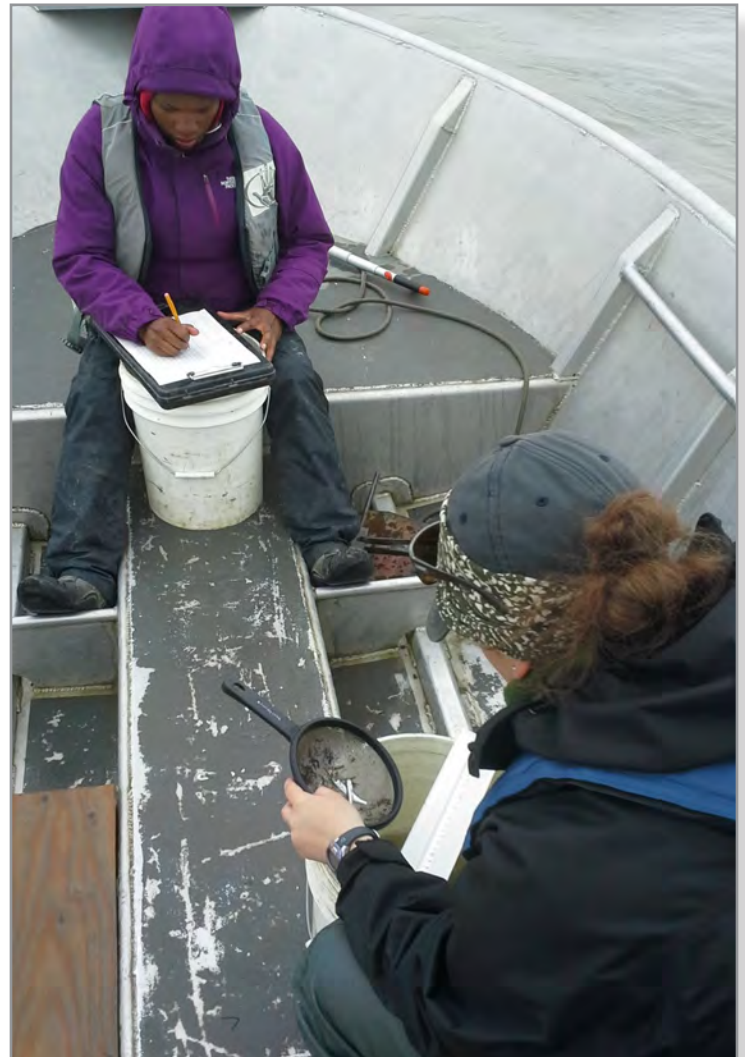


**AYK TRIBAL CONSORTIUM EARLY MARINE  
ECOLOGY RESEARCH PROJECT**  
PCSRF Funds: \$500,000  
Tribally Important Species: Chinook salmon

AYK SSI awards PCSRF funds through an annual competitive process using a rigorous, science-based review process. Funding priorities are drawn from *The AYK SSI Salmon Research and Restoration Plan*, which identifies knowledge gaps and establishes research and restoration priorities. Eligible proposals are subjected to an independent, anonymous, technical peer review conducted by regional, national, and international experts. Each proposal is reviewed using established criteria:

1. Project responsiveness to AYK SSI priorities;
2. Soundness of project design and methods;
3. Project management, experience, and qualifications of personnel;
4. Project costs; and
5. Coordination and capacity building.

Reviews are distributed to the Scientific Technical Committee, which finalizes recommendations for the Steering Committee, the body that approves the proposals by consensus.



Scientist Stacy Vega and local technician Jeniah record catch data. Photo: Thomas Parker

# AYK Tribal Consortium Early Marine Ecology Research Project

The AYK SSI has underscored four themes of science-based key limiting factors and sources of critical uncertainty for Chinook salmon population in the Yukon and Kuskokwim watersheds and Norton Sound. These limiting factor themes are: (1) freshwater, estuarine, and early marine mortality; (2) effects of selective fishing on escapement quality; (3) density dependent effects and overcompensation; and (4) uncertainty in salmon forecasting and management strategies. To address this first theme, the AYK funded a multi-faceted field and laboratory-based research plan aimed at improving the understanding of the early marine ecology of juvenile Chinook salmon.

This research will connect out-migrating juvenile Chinook salmon habitat use, growth, and condition in the shallow, nearshore, and intertidal waters of the Yukon Delta to historic data collected during the mid-1980s, prior to the decline in Yukon River Chinook salmon production. This research will: update juvenile life-history data on the timing and size of marine entry under current climate conditions; augment existing data on the marine ecology of juvenile Chinook salmon in the northern Bering Sea by providing seasonal distribution, size, and condition information prior to their capture in Bering Sea fishery surveys; and investigate a period in the life of juvenile Yukon Chinook salmon that is expected to be highly influential to cohort return strength.



Measuring a juvenile fish. Photo: Stacy Vega



Local boat captain Lamar Lowe. Photo: Thomas Parker

*“With support from PCSRF and the leadership of the Arctic-Yukon-Kuskokwim Tribal Consortium and the Sustainable Salmon Initiative, residents on the Yukon River are engaged in cutting-edge research that will inform our understanding of juvenile Chinook salmon in the Bering Sea. This research will fill critical knowledge gaps by investigating a period in the life of Yukon River Chinook salmon that is highly influential in determining the strength of adult returns; a salmon population we’ve lived on for millennia and that has suffered many years of declines. It’s an exciting time to be working with NOAA Fisheries and the State of Alaska on this project -- it’s a first for our organization and we look forward to the results.”*

- Ragnar Alstrom,  
Executive Director, Yukon Delta Fisheries  
Development Association and Board Member,  
Bering Sea Fishermen’s Association

## *Individual Tribal Projects*

Tribes applying for PCSRF funding on their own behalf must demonstrate Tribal eligibility; and describe program administration, detailed project proposals, and alignment of the project with PCSRF priorities. Five individual Tribes received PCSRF funding in FY 2013: Confederated Tribes of the Colville Reservation, Coquille Indian Tribe, Cow Creek Band of Umpqua Tribe of Indians, Cowlitz Indian Tribe, and Shoshone-Bannock Tribes. As an example, summarized here is the Elk Creek Cooperative Salmon Habitat Project implemented by the Cow Creek Band of Umpqua Tribe of Indians.

## Elk Creek Cooperative Salmon Habitat Recovery Project

Oregon's Umpqua River Basin is one of the region's largest river systems, and historically supported 25 percent of Oregon's coastal Coho salmon populations. A 2009 report on the status of the species indicated that the Umpqua Basin ranks lowest in the amount of pool habitat, number of deep pools, number of slack-water pools, pieces and volume of large wood, amount of gravel, and winter rearing habitat.<sup>xxi</sup>

In 2010, the Cow Creek Umpqua Tribe began restoring the Elk Creek watershed. This project is unique because the Tribe is working with Federal and local partners to restore the entire watershed, much of which is on private lands. PCSRF dollars are supporting activities to restore floodplain connectivity and function, improve channel structure and complexity, improve riparian habitats and large wood recruitment, restore substrate composition, and improve water quality and quantity. These activities benefit listed Coho salmon, as well as non-listed cutthroat, steelhead, and lamprey.

Today, invasive plant species have been replaced with plantings of native vegetation; beavers are returning to the watershed and helping to restore the natural processes of the ecosystem; new hydraulic modeling is supporting assessments of riparian forest conditions; and instream restoration designs and construction on the lower two miles of Elk Creek are near completion.

With support from PCSRF, this community-based restoration project is leaving a lasting impact on the community of Drew, Oregon, and today, local residents have a sense of ownership of the project. Community members gather at Three Falls on Elk Creek every year to watch the Coho return and this project will ensure that future generations, including Cow Creek Tribal members, will continue to see Coho return to Elk Creek for years to come.

**COW CREEK BAND OF UMPQUA TRIBE INDIANS: ELK CREEK COOPERATIVE**

**SALMON HABITAT RECOVERY PROJECT**

PCSRF Funding: \$535,000

Listed Species: Threatened Oregon Coast Coho salmon





Completed buried bank jam on Elk Creek. Photo: Cow Creek Umpqua Tribe



At work in their watershed: local contractors carefully excavate for a buried bank log jam. Photo: Cow Creek Umpqua Tribe



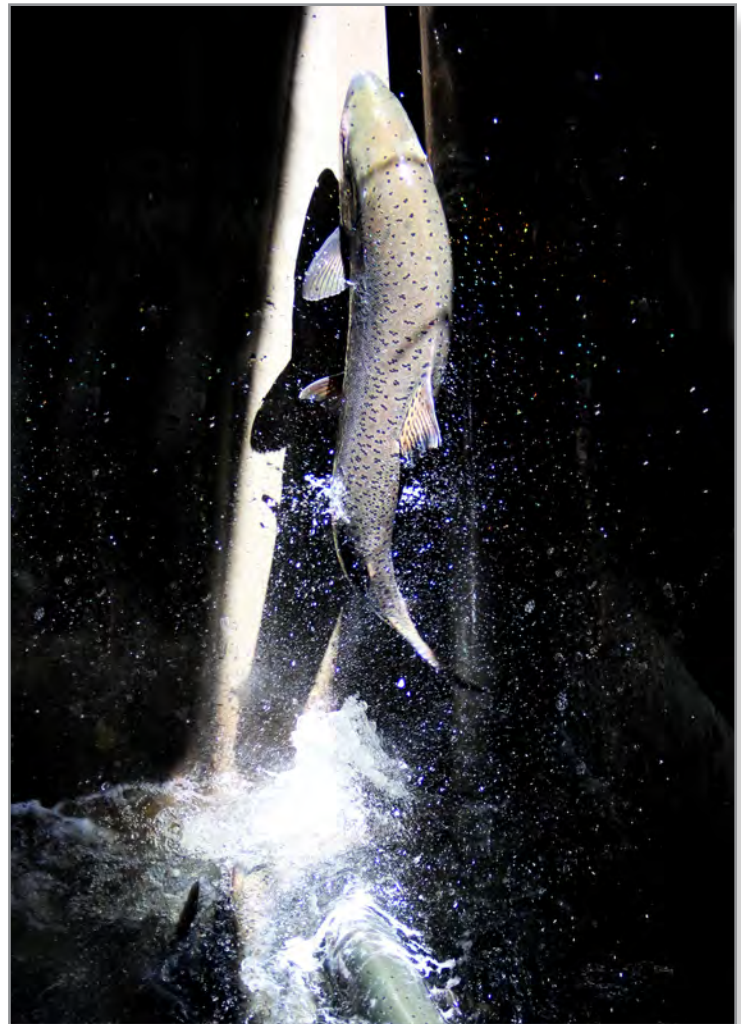
Coho under Joe Hall Bridge. Every fall local residents gather along Elk Creek to watch the coho return to their natal stream. Photo: Julie Edmonds

*“The return of Coho salmon to the Elk Creek watershed has galvanized stakeholders to address the challenges of diminishing salmon returns. The obvious positive ecological impact on aquatic habitat and salmon populations within the Elk Creek watershed is directly associated with the PCSRF investments in our community.”*

- Stan Petrowski,  
Director of the South Umpqua  
Rural Community Partnership

# PCSRF Lessons Learned

- *The continued ability to support projects and programs through all stages of a salmon's life cycle is critical to the success of salmon conservation and recovery.*
- *The development and implementation of a robust performance reporting system, as well as effective monitoring approaches, are critical to assessing progress towards goals.*
- *Significant collaboration, coordination, political will, and technical expertise are required to develop cross-agency, cross-watershed, or cross-population measures.*
- *As observed by long-term monitoring, cumulative project investments over time have resulted in sustained and increased returns of salmonids and expanded distribution into habitats that populations have not occupied for decades.*
- *PCSRF's monitoring and assessment efforts are showing that PCSRF is making a difference in habitat and species recovery.*



Jumping Chinook. Photo: Ben Sanford, NOAA



Salmon eggs. Photo: NOAA





Kokanee Salmon. Photo: Bill Lind, NOAA



Chinook parr. Photo: Enrique Patino, NOAA



Beaver pond. Photo: Brian Cluer, NOAA

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