

2010 Report to Congress

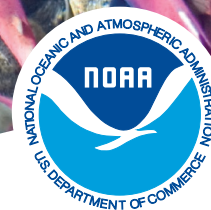
Pacific Coastal Salmon Recovery Fund

FY 2000–2009

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**NOAA
FISHERIES
SERVICE**

Science, Service, Stewardship



Recovery Domains

Puget Sound

- Ozette Lake Sockeye ESU (T)
- Hood Canal Summer-run Chum ESU (T)
- Puget Sound Steelhead DPS (T)
- Puget Sound Chinook ESU (T)

Interior Columbia

- Snake River Sockeye ESU (E)
- Upper Columbia River Spring-run Chinook ESU (E)
- Snake River Fall-run Chinook ESU (T)
- Snake River Spring/Summer-run Chinook ESU (T)
- Upper Columbia River Steelhead DPS (T)
- Middle Columbia River Steelhead DPS (T)
- Snake River Basin Steelhead DPS (T)

Willamette/Lower Columbia

- Columbia River Chum ESU (T)
- Lower Columbia River Chinook ESU (T)
- Upper Willamette River Chinook ESU (T)
- Lower Columbia River Steelhead DPS (T)
- Lower Columbia River Coho ESU (T)
- Upper Willamette River Steelhead DPS (T)

Oregon Coast

- Oregon Coast Coho ESU (T)

Southern Oregon/Northern California Coasts

- S. Oregon/N. California Coasts Coho ESU (T)

North-Central California Coast

- California Coastal Chinook ESU (T)
- Northern California Steelhead DPS (T)
- Central California Coast Coho ESU (E)
- Central California Coast Steelhead DPS (T)

Central Valley

- Sacramento River Winter-run Chinook ESU (E)
- California Central Valley Spring-run Chinook ESU (T)
- California Central Valley Steelhead DPS (T)

South-Central/Southern California Coast

- S. Central California Coast Steelhead DPS (T)
- Southern California Steelhead DPS (E)

PCSRF Timeline

- 1989 Sacramento River winter-run Chinook are listed as threatened.
- 1991 Snake River sockeye are listed as endangered by NOAA Fisheries Service 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.
- 1994 Sacramento River winter-run Chinook are listed as endangered under ESA. NOAA Fisheries Service begins a complete review of the ESA status for all anadromous species along the West Coast.
- 1996 Central California Coast coho are listed as threatened.
- 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. Governors of Washington, Oregon, and Alaska meet to discuss coast-wide salmon issues.
- 1998 Southern California steelhead are listed as endangered. Lower Columbia River steelhead, Oregon Coast coho, and Central Valley steelhead are listed as threatened.
- 1999 Upper Columbia River spring-run Chinook are listed as endangered. Hood Canal summer-run chum, Ozette 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.
- 1999 Pacific Salmon Treaty Agreement is signed by the U.S. and Canada.
- 2000 Northern California steelhead are listed as threatened. The PCSRF is first funded by Congress, dedicating funds to the states of WA, OR, CA, and AK and regional tribes* to protect declining salmon populations.
- 2002 Population boundary for endangered Southern California Coast steelhead is extended to the Mexico border.
- 2004 Idaho is added as a PCSRF recipient recognizing upstream spawning habitat as critical to Pacific salmon and steelhead survival.
- 2005 PCSRF Performance Framework of goals and measures is developed and implemented. Central California Coast coho are reclassified as endangered (originally listed in 1996). Lower Columbia River coho are listed as threatened.
- 2006 Upper Columbia River steelhead are upgraded to threatened status.
- 2007 Puget Sound steelhead are listed as threatened. NOAA Fisheries Service reviews and implements a competitive selection process to allocate PCSRF funds among grantees to improve the likelihood that projects are funded to address limiting factors.
- 2009 Nevada is added as a PCSRF recipient, recognizing the historic geographic extent of anadromous fish in the Columbia Basin.
- 2010 PCSRF implements the second phase of performance metric reporting to more comprehensively track project implementation data to support scientific analyses and adaptive management.

* 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 (KRITFWC) 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)). 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)).

2010 Report to Congress:

Pacific Coastal Salmon Recovery Fund

FY 2000–2009



This Report is organized into four major sections. The first section provides a synopsis of the PCSRF Program and funding. The second section is an overview of the PCSRF Program, including identified performance metrics. The third section is a series of maps and grantee descriptions of PCSRF accomplishments to date. The final section describes the current status of various populations of salmon and steelhead.

PCSRF 10th Anniversary!

2010 marks the 10th anniversary of the Pacific Coastal Salmon Recovery Fund. Over the last ten years, thousands of PCSRF projects throughout the Pacific Coast region have made important contributions to improve the status of ESA-listed species, reduce the likelihood of extinctions, and help protect currently healthy populations.

Synopsis

Pacific salmon and steelhead¹ have been under intense pressure due to natural and human forces for more than a hundred years. Salmonids² are anadromous fish that spawn and rear in freshwater and spend their adult life in the open ocean. They are an important component of watershed health throughout the Pacific Coast, with a role in many ecosystem processes such as a food source for predators and nutrient source for riparian plants. Salmonids bring vital nutrients from the ocean to support upland riparian and freshwater ecosystems.³

The Pacific Coastal Salmon Recovery Fund (PCSRF) was established by Congress in fiscal year (FY) 2000 to protect, restore, and conserve Pacific salmonids and their habitats, and to address the impacts of the Pacific Salmon Treaty Agreement between the United States and Canada. Under PCSRF, NOAA Fisheries Service provides funding to states and tribes of the Pacific Coast region (California, Nevada, Oregon, Washington, Idaho, and Alaska) to implement habitat restoration and conservation projects focused on improving the status of salmonid populations

¹ Steelhead are the anadromous form of freshwater rainbow trout. Steelhead migrate to the ocean as juveniles and return to freshwater streams to spawn.

² In this Report, the term 'salmonids' refers to both salmon and steelhead.

³ Mary F. Willson and Karl C. Halupka. 1995. Anadromous fish as a keystone species in vertebrate communities. *Conservation Biology* 9(3):489-497.

and their habitats. This 2010 Report to Congress documents the activities and progress under the PCSRF over the last ten years. Key accomplishments for PCSRF funded activities are noted below:

- ▶ PCSRF projects have restored, protected, and made accessible nearly 700,000 acres of habitat. Degraded habitat is considered a major limiting factor in all areas where salmonid populations are listed along the Pacific Coast.
- ▶ Over 4,400 miles of stream have been opened by PCSRF projects since FY 2000.
- ▶ Nearly 240,000,000 fish have been marked supporting efforts to gather data for improved stock identification, more accurate fish abundance estimates, and more effective management of selective fisheries on hatchery fish. These markings improve harvest opportunities and provide economic benefits to communities throughout the region.

PCSRF has provided an important source of stable funding allowing project managers to assess, plan, implement, and monitor a comprehensive network of habitat improvement and salmonid management projects through full project life-cycle processes. Examples of several projects are described in this document. Funding amounts allocated by NOAA Fisheries Service over the last ten years are shown in Table 1.

PCSRF Program Overview

Human land and water use, harvest, and hatchery practices, as well as changing ocean conditions, have increased the vulner-

Table 1: PCSRF Allocations to States and Tribes (in Millions of Dollars)

PCSRF	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	TOTAL
Washington	18.0	30.2	34.0	27.8	26.0	24.6	23.7	24.1	23.8	27.6	259.8
Alaska	14.0	19.5	27.0	21.9	20.6	23.7	21.7	16.7	14.6	9.3	189.0
California	9.0	15.1	17.0	13.9	13.0	12.8	6.4	7.9	9.6	16.5	121.3
Oregon	9.0	15.1	17.0	13.9	13.0	12.8	6.4	7.3	9.2	14.6	118.3
Idaho	–	–	–	–	4.9	4.4	2.2	2.8	2.4	2.8	19.5
Pacific Coastal Tribes	6.0	7.4	11.0	8.9	8.4	7.9	4.9	6.1	5.5	6.5	72.6
Columbia River Tribes	2.0	2.5	4.0	3.0	3.1	2.5	1.2	1.7	1.9	2.6	24.4
Totals	58.0	89.8	110.0	89.4	89.0	88.7	66.5	66.6	67.0	79.9	804.9

ability of salmonid populations, contributing to their decline and the listing of many populations as threatened or endangered under the federal Endangered Species Act (ESA). Over the course of their life cycle, salmonids require suitable habitat in mainstem rivers, tributaries, coastal estuaries, wetlands, and the Pacific Ocean. A number of environmental challenges affect the survival of salmonids, including variability in ocean conditions, destruction of nearshore and freshwater habitats, and other natural and human-caused ecosystem changes. Global climate changes are likely to continue to affect environmental conditions, challenging the ability of populations to survive, recover, and sustain themselves. Congress recognized the cultural, ecological, and economic importance of establishing means to address salmonid conservation and recovery and since 2000 has funded PCSRF.

Over the ten-year evolution of the PCSRF Program, NOAA Fisheries Service, states, tribes, and local project managers have developed an integrated approach to track progress, measure performance, and ensure accountability in the use of PCSRF funds. Performance metrics designed to report consistent indicators and data on project activities are described in the *Pacific Coastal Salmon Recovery Fund Performance, Goals, Measures and Reporting Framework* (referred to as the Reporting Framework).⁴ Indicators of performance have been developed for each PCSRF goal in the Reporting Framework, focusing on specific investments made within the PCSRF for salmonid restoration and conservation. The metrics for the short-, mid-, and long-term goals outlined in the Reporting Framework and shown below, recognize and address the major habitat limiting factors identified across the Pacific Coast region.

► **Short-term Goals**

- Enhanced availability and quality of salmonid habitat
- Improved management practices
- Major habitat limiting factors addressed

► **Mid-term Goals**

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

► **Long-term Goals**

- Overall sustainability of Pacific salmon

Habitat restoration activities funded by PCSRF are an important component of overall salmonid recovery efforts in the region. Restoration projects provide increased quality and quantity of spawning and rearing habitat from stream headwaters to coastal estuaries. Upstream riparian restoration activities provide erosion control, enhance instream flow and stream bed conditions, and provide the habitat necessary for successful spawning and egg survival. Estuary and wetland restoration projects closer to the coast protect and improve feeding and rearing habitat

used by juvenile fish as they transition from freshwater to the open ocean. A number of PCSRF restoration projects also focus on removing barriers along small creeks and streams which often limit access to otherwise high quality habitat. Additionally, these habitat projects+ provide a number of human community benefits including enhanced water quality, recreation opportunities, flood control, and coastline protection.

Over the last ten years, PCSRF has funded over 8,000 projects across the region that contribute to preventing extinction and improving the status of ESA-listed species and their habitats, as well as supporting and protecting healthy populations. Projects range from single-site culvert replacements to hundreds of acres of habitat acquisition and restoration. As projects are completed, grantees at the state and local levels are required to collect and report data for the performance metrics defined under each of the goals in the Reporting Framework. Table 2 highlights the progress for the metrics from program inception through October 2009.

Table 2: Region-wide Performance Reporting Results, FY 2000-2009*

Output	Regional Indicator	Completed**
Instream Habitat Projects	Stream Miles Treated	949
Wetland Habitat Projects	Acres Created	2,057
	Acres Treated	26,786
Estuarine Habitat Projects	Acres Created	1,134
	Acres Treated	1,996
Land Acquisition Projects	Acres Acquired or Protected	141,681
	Stream Bank Miles Acquired or Protected	3,178
Riparian Habitat Projects	Stream Miles Treated	5,654
	Acres Treated	53,992
Upland Habitat Projects	Acres Treated	468,072
	Number of Barriers Removed	1,926
	Stream Miles Opened	4,401
Fish Passage Projects	Number of Fish Screens Installed	1,146
	Number of Fish Marked for Management Strategies	238,643,775
Watershed Planning and Assessment Projects	Number of ESUs and DPSs with Factors Limiting Recovery Identified	27 of 28
Research, Monitoring and Evaluation Projects	Miles of Stream Monitored	135,664
	Number of Assessments Completed	516

* As part of NOAA's efforts to ensure that the PCSRF project implementation and performance metrics are as accurate as possible, NOAA staff conducts detailed semi-annual reviews of the information reported for each project in the PCSRF project database. Grantees work with NOAA staff to verify the location information of the projects in the database. As a result of the FY 2009 reviews, a number of state-matching projects were removed from the database because they were confirmed to be outside of recovery domains for ESA-listed salmon and steelhead. As such, these projects may only provide indirect benefits to ESA-listed salmon and steelhead. For this reason, the above indicator values cannot be directly compared to those in the 2009 PCSRF Report. These semi-annual reviews will continue to ensure that PCSRF and state-matching projects in California, Oregon, Washington, and Idaho directly benefit ESA-listed salmon and steelhead populations.

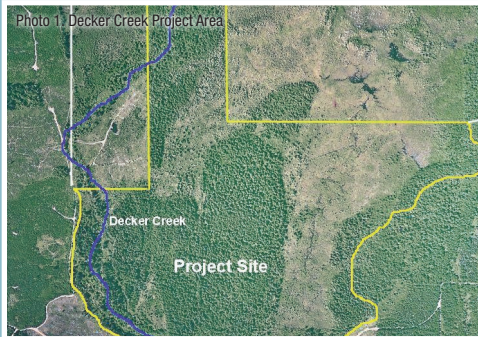
** PCSRF grantees report indicator values to the nearest 0.1 acres or stream miles. The region-wide totals above may not match the sum of the Geographic Area metrics (Tables 3, 6, 7, and 9) due to rounding.

⁴ The Reporting Framework is available online at: <http://www.nwr.noaa.gov/Salmon-Recovery-Planning/PCSRF/upload/PCSRF-Perf-Framework.pdf>.



Geographic Area – Northern Pacific Coast

The northern Pacific Coast geography includes Washington and Oregon from the Cascade Mountains to the ocean. This area is divided into three recovery domains, including Puget Sound, Willamette/Lower Columbia, and Oregon Coast as shown on the map below. These recovery domains encompass the major centers of human development on the north Pacific Coast, with significant loss and degradation of stream, estuarine, riparian, and upland habitat. Within these domains, there are eleven ESA listings of threatened salmonids. Table 3 summarizes the PCSRF metrics within these three domains. Table 4 below describes the limiting factors contributing to the listings in these recovery domains.



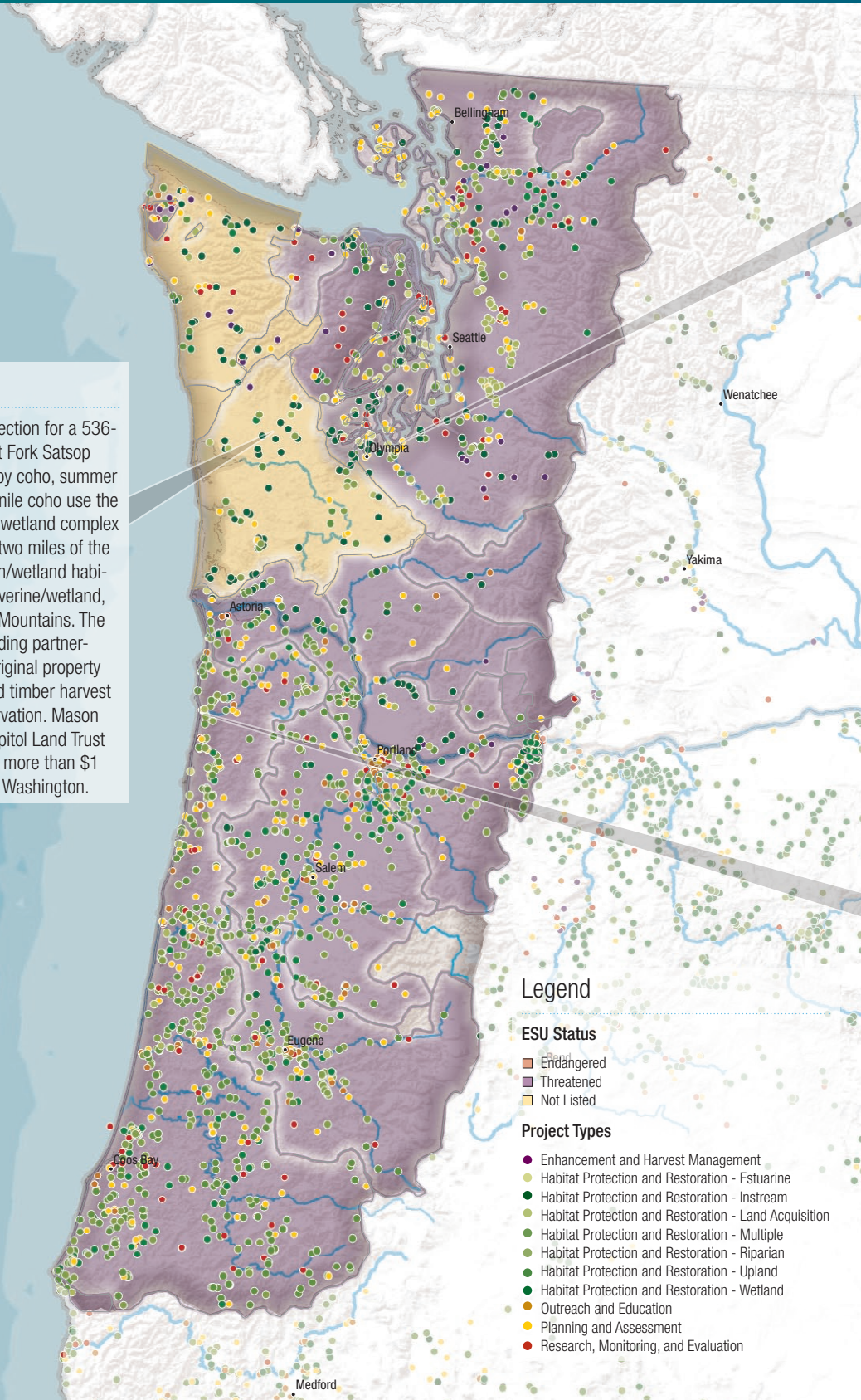
Washington: Habitat Acquisition

Washington used PCSRF funding to provide permanent protection for a 536-acre salmon-producing riparian/wetland complex in the East Fork Satsop River watershed. The site is used for spawning and rearing by coho, summer and fall Chinook, chum, steelhead, and cutthroat trout. Juvenile coho use the system heavily for rearing and move freely in and out of the wetland complex from Decker Creek. The project site includes approximately two miles of the mainstem of Decker Creek and diverse, intermingled riparian/wetland habitats, creating an outstanding example of an intact, natural riverine/wetland, characteristic of watersheds draining the southern Olympic Mountains. The Capitol Land Trust guided the project from its inception, building partnerships, securing funding, and overseeing negotiations. The original property owner, Green Diamond Resource Company, halted a planned timber harvest and worked with the Land Trust to ensure permanent preservation. Mason County helped secure the funding and is now the owner. Capitol Land Trust will act as the long-term steward. The total project cost was more than \$1 million, with half provided by PCSRF and half by the state of Washington.

Table 3: Northern Pacific Coast Metrics, FY 2000–2009

Regional Indicator	Measure
Instream Miles Treated	612
Wetland Acres Created	1,078
Wetland Acres Treated	12,497
Estuarine Acres Created	1,110
Estuarine Acres Treated	1,716
Land Acres Acquired or Protected	42,397
Stream Bank Miles Acquired or Protected	1,585
Riparian Stream Miles Treated	2,881
Riparian Acres Created	25,443
Upland Acres Treated	101,933
Fish Passage Barriers Removed	843
Fish Passage Miles Opened	1,528
Fish Screens Installed	322
Hatchery Fish Marked	380,000
Stream Miles Monitored	46,984
Assessments Completed	309

Measure totals are approximate, as some projects occur statewide, not by recovery domain.



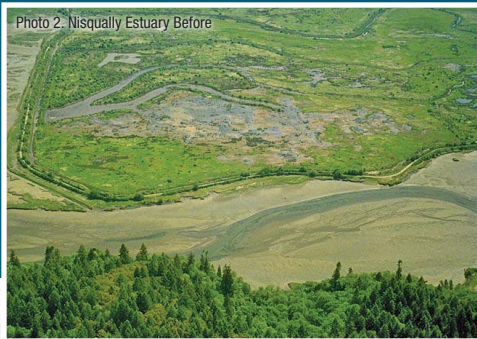
Legend

ESU Status

- Endangered
- Threatened
- Not Listed

Project Types

- Enhancement and Harvest Management
- Habitat Protection and Restoration - Estuarine
- Habitat Protection and Restoration - Instream
- Habitat Protection and Restoration - Land Acquisition
- Habitat Protection and Restoration - Multiple
- Habitat Protection and Restoration - Riparian
- Habitat Protection and Restoration - Upland
- Habitat Protection and Restoration - Wetland
- Outreach and Education
- Planning and Assessment
- Research, Monitoring, and Evaluation



Northwest Indian Fisheries Commission (NWIFC): Estuary Restoration

The NWIFC administers PCSRF funds for 20 treaty tribes in western Washington. The Nisqually Tribe is one of the member tribes that received PCSRF funding from the NWIFC to undertake salmon recovery work in the Nisqually watershed. They have developed a strategic plan and are working with partners to address the highest priority in the watershed, the restoration of the Nisqually estuary. They've restored habitat on 140 tribally-owned acres and are conducting extensive monitoring of habitat and juvenile salmon to understand the effects of restoration. The estuary provides vital rearing habitat for salmonids, including Puget Sound Chinook and steelhead, both threatened with extinction.

The tribe also provided planning, support staff, and facilitation that helped to identify funding and coordinated efforts to remove historic dikes that blocked saltwater access to nearly 1000 acres of the estuary; to construct a new dike to protect acreage of some remaining freshwater wetlands; and to plant a surge-plain riparian forest. These efforts will greatly expand the available estuary habitat, providing major benefits to salmonids as they transition between marine and freshwater habitats. This work was partially funded through PCSRF funds from Washington State to the U.S. Fish and Wildlife Service (USFWS) and Ducks Unlimited. The U.S. Geological Survey is partnering with the tribe and the USFWS to support ongoing monitoring.

The Nisqually National Wildlife Refuge was originally established in 1974 and the land was managed as freshwater wetlands for migratory birds. The Refuge Estuary Restoration Project is the single largest estuary restoration effort in the Pacific Northwest. The estuary restoration was completed in late 2009 and brackish tidal waters began to flood more than 760 acres of the Nisqually delta for the first time in a century. By reconnecting the wetlands with the Nisqually River, McAllister Creek, and Puget Sound, more than 21 miles of tidal channels and sloughs have been restored in the estuary. Restoration of this pristine estuary habitat is a fundamental step in recovering the Nisqually River population of threatened Puget Sound Chinook salmon (<http://www.nisquallydeltarestoration.org/>).



Oregon: Circle Creek

The Oregon Watershed Enhancement Board (OWEB) leverages PCSRF funds to conduct restoration and monitoring evaluations of properties funded for conservation acquisition in support of salmon recovery. The Circle Creek property along the Necanicum River in Clatsop County is an excellent example of the use of PCSRF funds

to analyze current hydrology and unique geomorphic features to identify design alternatives for enhancing the natural hydrology and connectivity to the Necanicum River floodplain. This use of PCSRF funds complements OWEB Lottery funds in targeting activities that will recover coho, Chinook, and chum salmon and steelhead populations. The Conservation acquisition of a 365-acre floodplain property along the Necanicum River in Seaside contains significant Sitka Spruce swamp and associated upland habitat that expands an existing block of protected habitats from estuary to upland forests in the Lower Necanicum River floodplain at Tillamook Head. The acquisition project was funded with Oregon Lottery funds matching U.S. Fish and Wildlife Service Coastal Wetlands Program funds. The PCSRF funds are critical for designing the improvement to habitat conditions on the old dairy property and reconnecting the river to its floodplain.

Table 4: Northern Pacific Coast Limiting Factors

ESU/DPS Number		1	2	3	4	5	6	7	8	9	10	11
Degraded Habitat	Estuarine & Nearshore Marine	●			●	●		●				
	Flood Plain Connectivity & Function	●		●	●	●	●	●	●	●	●	●
	Channel Structure & Complexity	●		●	●	●	●	●		●	●	●
	Riparian Areas & Large Woody Debris Recruitment	●		●	●	●	●	●	●	●	●	●
	Stream Substrate	●		●	●	●		●	●		●	●
	Stream Flow				●	●		●	●	●	●	●
	Water Quality	●						●		●		●
	Fish Passage					●	●	●	●	●		
Hatchery-related Adverse Effects							●	●			●	
Harvest-related Adverse Effects								●			●	
Predation/Competition/Disease (non-native species)				●					●			●

ESUs and DPSs

1. Puget Sound Chinook ESU
2. Puget Sound Steelhead DPS*
3. Ozette Lake Sockeye ESU
4. Hood Canal Summer-run Chum ESU
5. Columbia River Chum ESU
6. Upper Willamette River Chinook ESU
7. Lower Columbia River Chinook ESU
8. Lower Columbia River Steelhead DPS
9. Upper Willamette River Steelhead DPS
10. Lower Columbia River Coho ESU
11. Oregon Coast Coho ESU

* Recovery planning is underway for Puget Sound Steelhead DPS, and a formal analysis of population limiting factors has not yet been completed.



Geographic Area – Interior Columbia Basin

The Interior Columbia Basin includes the Snake River Basin and portions of eastern Washington and Oregon, and central Idaho. This area includes the Interior Columbia recovery domain with five ESA listings of threatened salmonids and two ESA listings of endangered salmonids. The domain is composed of agricultural and range lands with a number of large dams preventing natural fish passage upstream. Table 5 below describes the limiting factors contributing to the listings in this recovery domain. Table 6 below summarizes the PCSRF metrics within the domain.

Columbia River Inter-Tribal Fish Commission (CRITFC): Habitat Improvements

Since 2000, the Yakama Nation has used PCSRF funds to implement key habitat and fisheries enhancement actions. Several projects have been completed in the Klickitat Basin, including constructing 17 large woody debris jams to enhance spawning and rearing habitat for spring Chinook and Mid-Columbia steelhead populations along 2.3 miles of the Klickitat River, reconnecting approximately 3000 feet of side-channel habitat, restoring nearly 0.75 mile of riparian habitat, and stabilizing roughly 0.3 mile of stream bank. These activities were funded with PCSRF dollars through the Washington State Salmon Recovery Funding Board and funding from the Bonneville Power Administration. In the White Salmon Basin, CRITFC is supporting the Buck Creek Watershed Fish Population/Habitat Analysis. The goal is to analyze physical and biotic conditions in the creek above Condit Dam in advance of the fall 2010 dam removal. These data will determine the creek's potential for anadromous salmonid spawning, rearing, and refugial habitat.

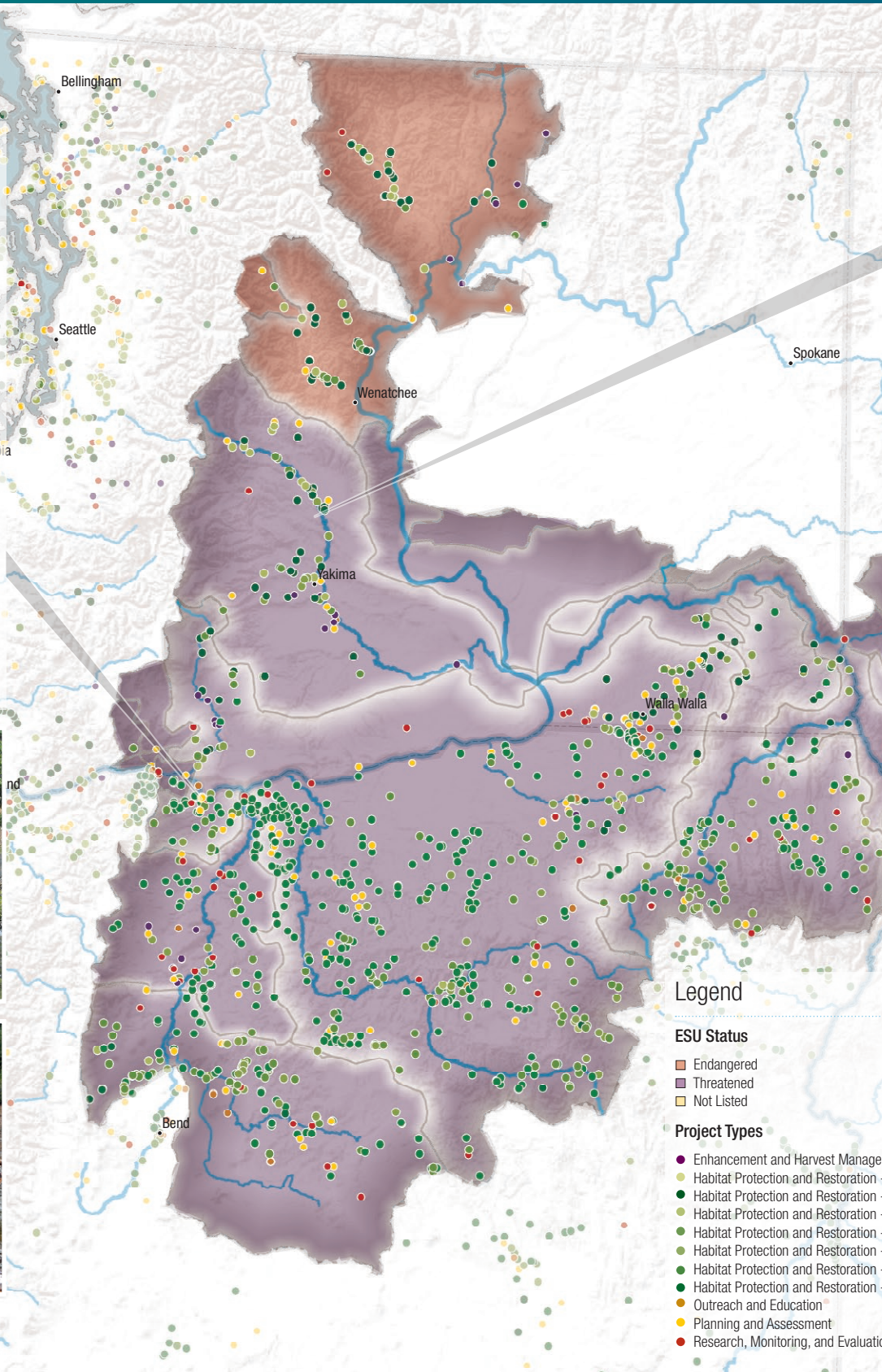
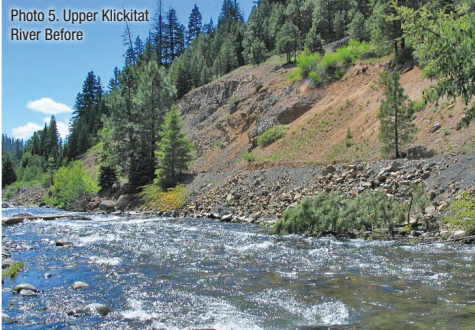


Photo 7. Taneum Creek Before



Photo 8. Taneum Creek After



Washington: Taneum Creek

In November 2009, Bruton Dam was removed from Taneum Creek, a tributary of the Yakima River. Salmon can now reach 30 miles of premier habitat in the river tributaries that have been inaccessible since the late 1800s. Kittitas Conservation Trust sponsored the deconstruction and removal of the dam and is rebuilding the creek as a "roughened channel" constructed from a range of streambed materials including large boulders (e.g., 6 feet diameter), smaller cobbles, gravel, and fine sand. The project will improve habitat for coho salmon and Mid-Columbia River steelhead, as well as all resident and migratory fish and aquatic species in the upper Yakima River basin. Funding was provided by PCSRF, Washington State Department of Ecology, the Community Salmon Fund program, the Bureau of Reclamation, and the Yakima Tributary Access and Habitat program.

Table 5: Interior Columbia Basin Limiting Factors

ESU/DPS Number	1	2	3	4	5	6	7
Degraded Habitat	Estuarine & Nearshore Marine			●			
	Flood Plain Connectivity & Function	●	●	●		●	●
	Channel Structure & Complexity		●	●		●	●
	Riparian Areas & Large Woody Debris Recruitment	●		●		●	●
	Stream Substrate	●		●		●	●
	Stream Flow	●		●		●	●
	Water Quality	●		●		●	●
	Fish Passage	●		●		●	●
	Hatchery-related Adverse Effects			●			●
	Harvest-related Adverse Effects		●				
Predation/Competition/Disease (non-native species)	●					●	
Mainstem Columbia River Hydropower-related Adverse Effects	●	●	●	●	●	●	

Table 6: Interior Columbia Basin Metrics, FY 2000–2009

Regional Indicator	Measure
Instream Miles Treated	199
Wetland Acres Created	978
Wetland Acres Treated	10,300
Estuarine Acres Created	24
Estuarine Acres Treated	235
Land Acres Acquired or Protected	72,958
Stream Bank Miles Acquired or Protected	1,588
Riparian Stream Miles Treated	2,334
Riparian Acres Created	24,494
Upland Acres Treated	347,556
Fish Passage Barriers Removed	313
Fish Passage Miles Opened	2,061
Fish Screens Installed	667
Hatchery Fish Marked	1,205,444
Stream Miles Monitored	70,994
Assessments Completed	156

Measure totals are approximate, as some projects occur statewide, not by recovery domain.

ESUs and DPSs

1. Middle Columbia River Steelhead DPS
2. Snake River Fall-run Chinook ESU
3. Upper Columbia River Spring-run Chinook ESU (endangered)
4. Snake River Sockeye ESU (endangered)
5. Snake River Spring/Summer-run Chinook ESU
6. Snake River Basin Steelhead DPS
7. Upper Columbia River Steelhead DPS

Idaho: Pottlatch River

PCSRF funding has been used to support monitoring and evaluation projects in the Pottlatch River by the Idaho Department of Fish and Game to increase the understanding of ESA-listed steelhead species in the Pottlatch drainage. Information from these projects has and will continue to be used by co-managers to better determine steelhead status, distribution, and habitat protection needs in the Lower Clearwater River.

Photo 9: Pottlatch River



ment
 Estuarine
 Instream
 Land Acquisition
 Multiple
 Riparian
 Upland
 Wetland

Boise



Geographic Area – California and Southern Oregon

The California and Southern Oregon area includes four recovery domains, including the Southern Oregon/Northern California Coasts, North-Central California Coast, South-Central/Southern California Coast, and the California Central Valley. These recovery domains encompass large tracts of suburban, forest, and agricultural lands, as well as several major population centers. Issues in the area include habitat degradation, low water quality, limited water availability, and barriers to fish passage. There are ten ESA listings of salmonids, two of which are endangered. Table 7 summarizes the PCSRF metrics within these four domains, and Table 8 describes the limiting factors contributing to the listings.

Table 7: California and Southern Oregon Metrics, FY 2000–2009

Regional Indicator	Measure
Instream Miles Treated	134
Wetland Acres Created	2
Wetland Acres Treated	9
Estuarine Acres Created	0
Estuarine Acres Treated	1
Land Acres Acquired or Protected	26,326
Stream Bank Miles Acquired or Protected	5
Riparian Stream Miles Treated	433
Riparian Acres Created	3,950
Upland Acres Treated	18,584
Fish Passage Barriers Removed	427
Fish Passage Miles Opened	758
Fish Screens Installed	157
Hatchery Fish Marked	0
Stream Miles Monitored	1,803
Assessments Completed	38

Measure totals are approximate, as some projects occur statewide, not by recovery domain.



California: Removal of Fish Passage Barriers

In 2009, the California Department of Fish and Game used PCSRF dollars to spearhead the removal of the last remaining fish passage barriers on Carpinteria Creek in Santa Barbara County. This project culminates 10 years of work on the Creek enhancing access to over 16 miles of riparian habitat, including the predominantly

pristine upper watershed within the Los Padres National Forest. The habitat is essential to the recovery of the endangered Southern California Steelhead. PCSRF dollars were used to conduct an overall watershed assessment; develop a restoration plan; remove multiple stands of invasive grass; replace culverts; restore stream banks; replant the riparian corridor with native plants; remove instream-bed paved road crossings; and engineer, redesign, and reconstruct a massive debris basin on a major tributary. Participation and support came from city, county, state, and federal agencies; private land owners; and a variety of non-governmental conservation groups. The project received the 2009 Riparian Challenge Award from the Western Division of the American Fisheries Society for its unique watershed-wide scope, extraordinary mix of participants, and significance to the recovery of the endangered Southern California steelhead.

Oregon: Rogue River Dam Removal

A major area of focus for PCSRF funding in Oregon has been the removal of dams that have blocked steelhead and coho salmon returns on the Rogue River. The Gold Hill Dam was removed in 2008 and the Savage Rapids Dam in 2009. The Gold Hill Dam had provided power and local drinking water, both services now provided by alternate sources. On Savage Rapids Dam, Oregon Watershed Enhancement Board (OWEB) and Bureau of Reclamation funds were used to design and construct a new pumping station for the Grants Pass Irrigation District, remove the dam, and restore habitat. For the first time in more than 100 years, the Rogue flows unimpeded for 157 miles from the Cascade foothills to the Pacific Ocean, increasing salmon returns by an estimated 22 percent. The Rogue Valley Council of Governments is coordinating monitoring using PCSRF and OWEB funding.



Table 8: California and Southern Oregon Limiting Factors

ESU/DPS Number	ESU/DPS Number										
	1	2	3	4	5	6	7	8	9	10	
Degraded Habitat	Estuarine & Nearshore Marine	●	●	●	●	●	●	●	●	●	●
	Flood Plain Connectivity & Function	●	●	●	●	●	●	●	●	●	●
	Channel Structure & Complexity	●	●	●	●	●	●	●	●	●	●
	Riparian Areas & Large Woody Debris Recruitment	●	●	●	●	●	●	●	●	●	●
	Stream Substrate	●	●	●	●	●	●	●	●	●	●
	Stream Flow	●	●	●	●	●	●	●	●	●	●
	Water Quality	●	●	●	●	●	●	●	●	●	●
	Fish Passage	●	●	●	●	●	●	●	●	●	●
Hatchery-related Adverse Effects	●										
Harvest-related Adverse Effects						●	●				
Predation/Competition/Disease (non-native species)	●	●	●	●	●	●	●	●	●	●	

ESUs and DPSs

1. S. Oregon/N. California Coasts Coho ESU
2. Northern California Steelhead DPS
3. California Coastal Chinook ESU
4. Central California Coast Coho ESU (endangered)
5. Central California Coast Steelhead DPS
6. California Central Valley Spring-run Chinook ESU
7. Sacramento River Winter-run Chinook ESU (endangered)
8. California Central Valley Steelhead DPS
9. S. Central California Coast Steelhead DPS
10. Southern California Steelhead DPS (endangered)

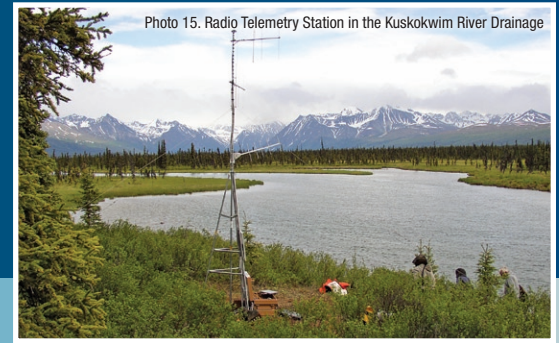
See legend on previous page.

Geographic Area – Alaska

Alaska's program focuses on habitat protection and maintaining healthy populations of salmon through research and monitoring efforts. There are no listed salmonids and thus no recovery domains in Alaska. Table 9 below shows the metrics for Alaska activities to date.

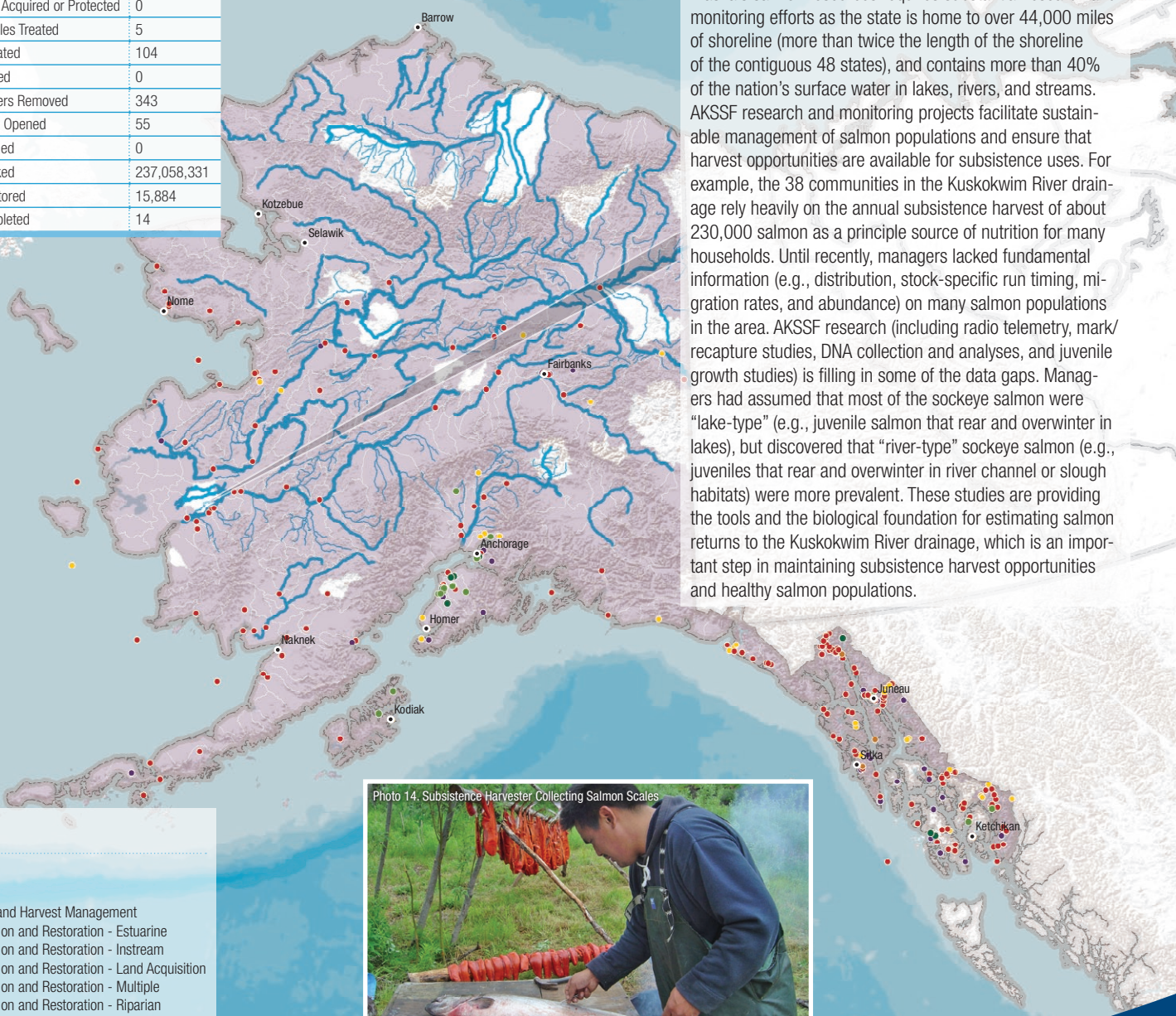
Table 9: Alaska Metrics, FY 2000–2009

Regional Indicator	Measure
Instream Miles Treated	4
Wetland Acres Created	0
Wetland Acres Treated	3,980
Estuarine Acres Created	0
Estuarine Acres Treated	45
Land Acres Acquired or Protected	0
Stream Bank Miles Acquired or Protected	0
Riparian Stream Miles Treated	5
Riparian Acres Created	104
Upland Acres Treated	0
Fish Passage Barriers Removed	343
Fish Passage Miles Opened	55
Fish Screens Installed	0
Hatchery Fish Marked	237,058,331
Stream Miles Monitored	15,884
Assessments Completed	14



Alaska: Conserving Wild Salmon Populations

PCSRF dollars are distributed via the Alaska Sustainable Salmon Fund (AKSSF). The AKSSF supports a myriad of projects necessary to maintain salmon populations and to protect or restore their habitats. Ensuring sustainability of Alaska's salmon resources requires substantial research and monitoring efforts as the state is home to over 44,000 miles of shoreline (more than twice the length of the shoreline of the contiguous 48 states), and contains more than 40% of the nation's surface water in lakes, rivers, and streams. AKSSF research and monitoring projects facilitate sustainable management of salmon populations and ensure that harvest opportunities are available for subsistence uses. For example, the 38 communities in the Kuskokwim River drainage rely heavily on the annual subsistence harvest of about 230,000 salmon as a principle source of nutrition for many households. Until recently, managers lacked fundamental information (e.g., distribution, stock-specific run timing, migration rates, and abundance) on many salmon populations in the area. AKSSF research (including radio telemetry, mark/recapture studies, DNA collection and analyses, and juvenile growth studies) is filling in some of the data gaps. Managers had assumed that most of the sockeye salmon were "lake-type" (e.g., juvenile salmon that rear and overwinter in lakes), but discovered that "river-type" sockeye salmon (e.g., juveniles that rear and overwinter in river channel or slough habitats) were more prevalent. These studies are providing the tools and the biological foundation for estimating salmon returns to the Kuskokwim River drainage, which is an important step in maintaining subsistence harvest opportunities and healthy salmon populations.



Legend

Project Types

- Enhancement and Harvest Management
- Habitat Protection and Restoration - Estuarine
- Habitat Protection and Restoration - Instream
- Habitat Protection and Restoration - Land Acquisition
- Habitat Protection and Restoration - Multiple
- Habitat Protection and Restoration - Riparian
- Habitat Protection and Restoration - Upland
- Habitat Protection and Restoration - Wetland
- Outreach and Education
- Planning and Assessment
- Research, Monitoring, and Evaluation



The Status of Pacific Salmonids

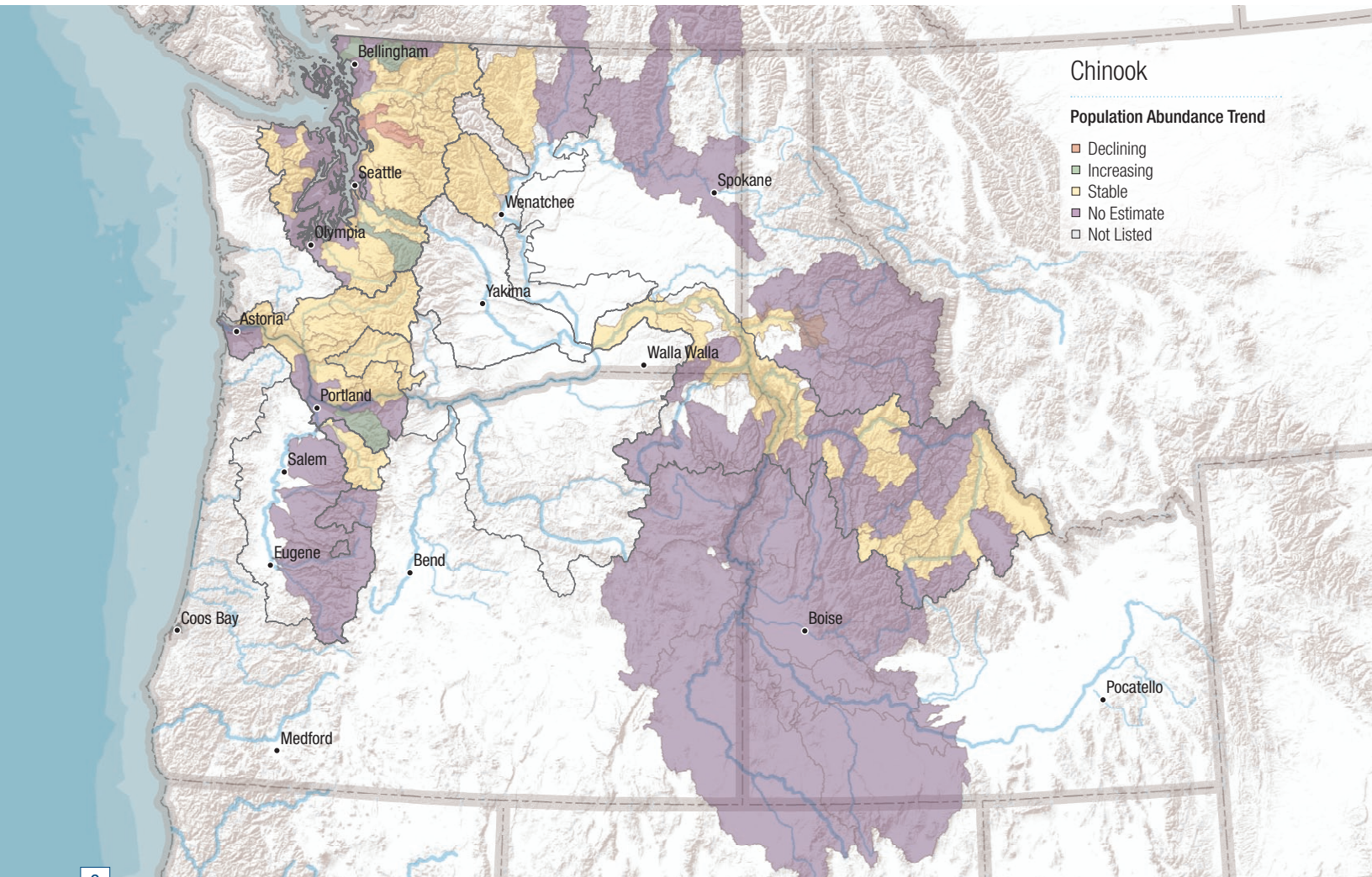
Assessing the status of salmonid populations requires understanding their life cycle and genetic variability and having means to monitor their populations. Wild salmonids generally spend one to four years in the open ocean before returning to spawn in their birth streams. They are isolated into genetically distinct populations that have evolved unique adaptations over time based on geography and other factors, including the season when the fish return to freshwater. Seven different species of Pacific salmonids are found in the five-state region, with five of these species (Chinook, coho, sockeye, chum, and steelhead) having populations listed as threatened or endangered under the ESA.

Salmonid populations are described as Evolutionarily Significant Units (ESUs) for salmon and Distinct Population Segments (DPSs) for steelhead.⁵ Each of the 37 ESUs and 15 DPSs repre-

⁵ An ESU is defined as a population that 1) is substantially reproductively isolated from conspecific populations, and 2) represents an important component in the evolutionary legacy of the species. From: Waples, R.S. 1991. Pacific salmon – *Oncorhynchus* spp., and the definition of “species” under the Endangered Species Act. Mar. Fish. Rev. 53(3):11-22.

sents a specific genetic stock within a watershed or basin. Of the 52 ESUs and DPSs, 17 ESUs and 11 DPSs are listed as threatened or endangered under the ESA. ESUs and DPSs are comprised of individual populations which are monitored within specific reaches of watersheds. Populations are tracked based on where they spawn in the basin, and can vary from year-to-year due to external pressures and changing ocean conditions. The following maps provide an overview of the current understanding of recent abundance trends in these populations based on monitoring and best available science. Most California populations do not have ten years of available data and so are not depicted on these maps.

Abundance trends at the ESU/DPS-level can be determined from the 10-year trends of the component populations (see Table 10). If data are available, an ESU/DPS is classified as “increasing” when 75% or more of its populations exhibit a statistically significant upward trend in abundance. When 75% or more of the populations exhibit a statistically significant downward trend in abundance, the ESU/DPS is classified as “declining.” Otherwise it is classified as “stable.” While populations may vary from year-to-year, the long-term habitat restoration and protection activities funded by PCSRF can assist in sustaining the species through changing conditions by addressing the major limiting factors for each ESU/DPS. With the exception of Puget Sound steelhead and Central California Coast coho, all ESUs/DPSs with ten or more years of abundance data are currently stable or increasing.



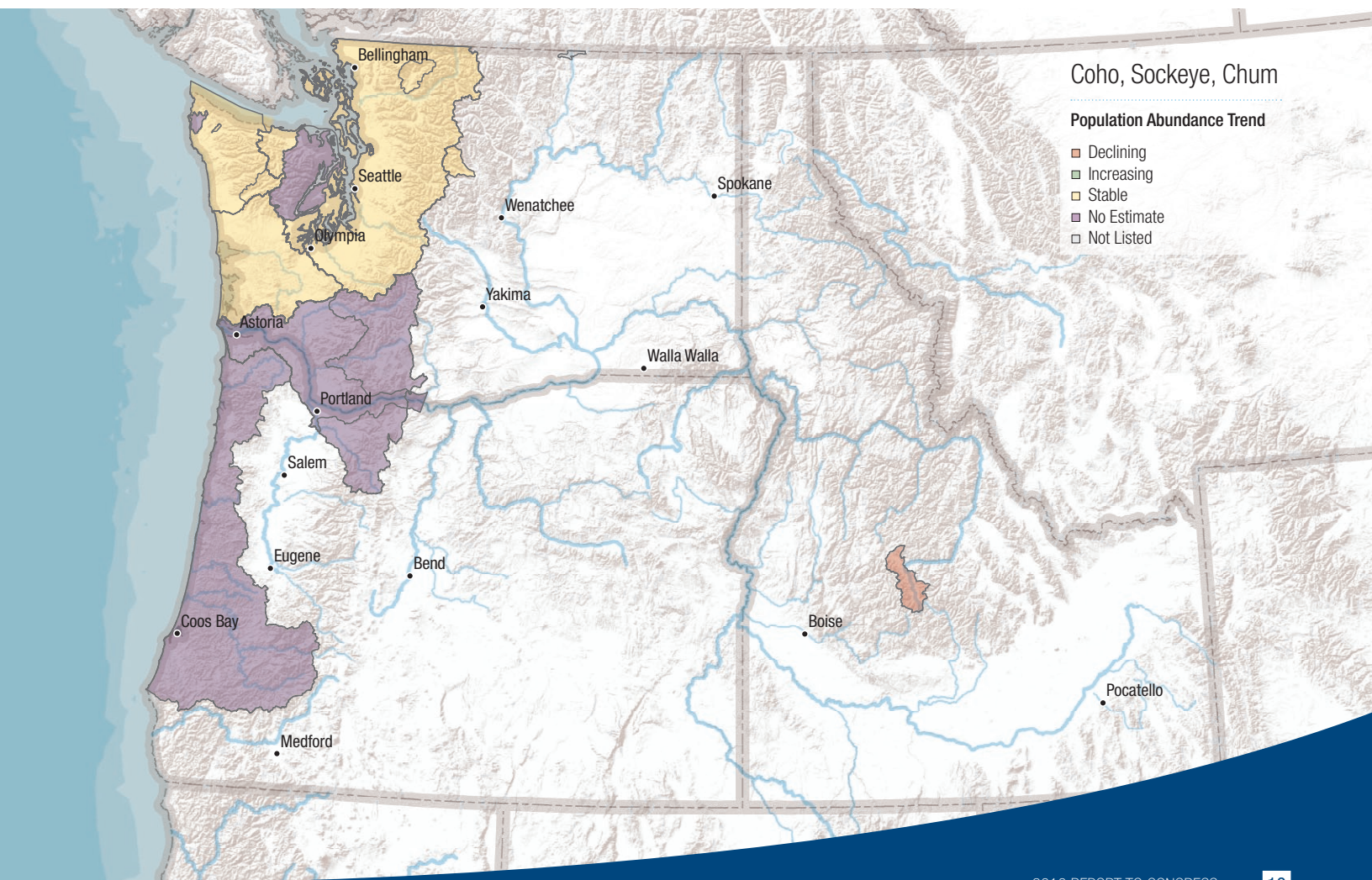
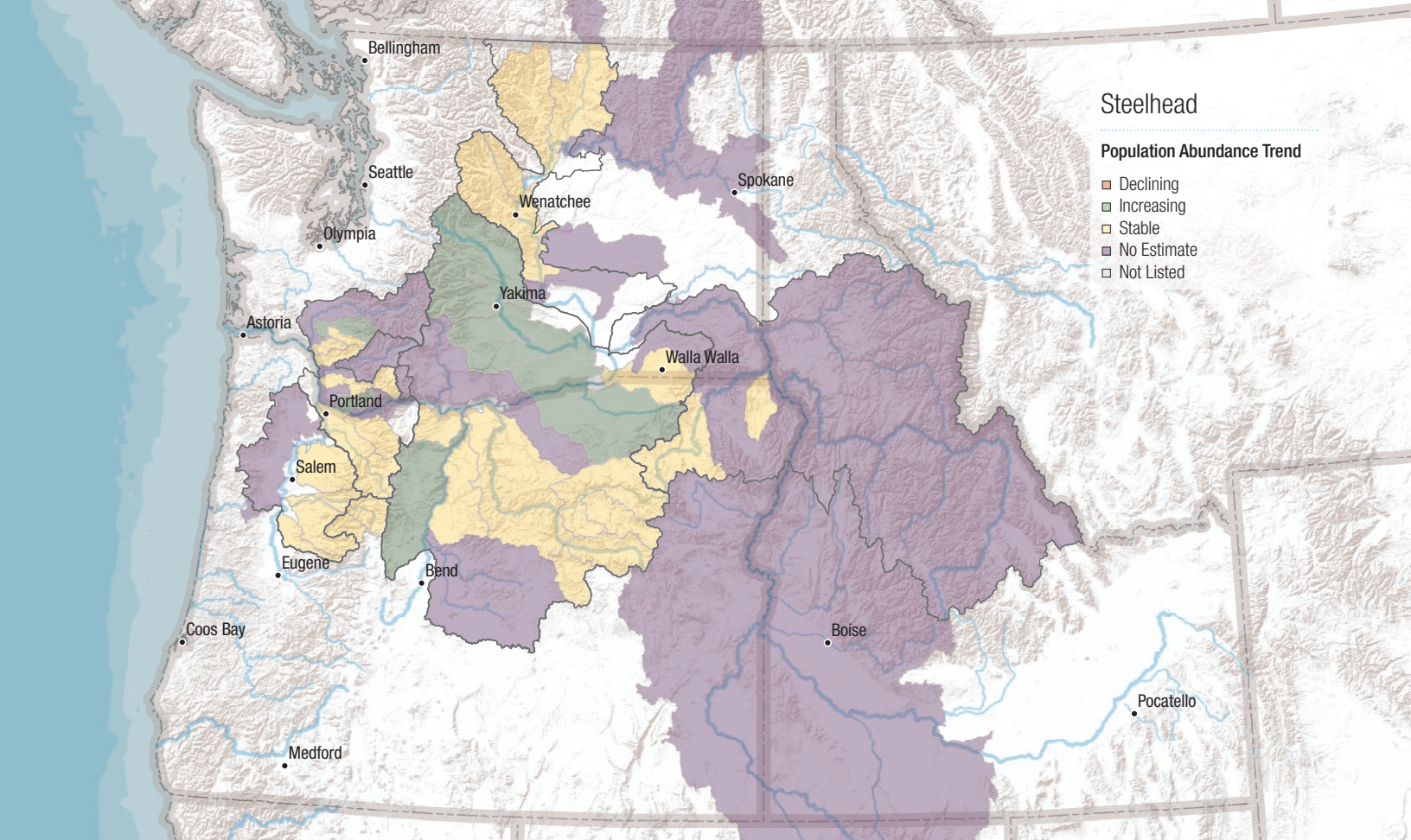


Table 10: ESUs and DPSS

Recovery Domain	ESU/DPS	Abundance Stable or Increasing*
Puget Sound	Ozette Lake Sockeye (T)	Yes
	Hood Canal Summer-run Chum (T)	Yes
	Puget Sound Steelhead (T)**	Declining
	Puget Sound Chinook (T)	Yes
Willamette/Lower Columbia	Columbia River Chum (T)	Yes
	Lower Columbia River Chinook (T)	Yes
	Upper Willamette River Chinook (T)	Yes
	Lower Columbia River Steelhead (T)	Yes
	Lower Columbia River Coho (T)	Yes
	Upper Willamette River Steelhead (T)	Yes
Interior Columbia	Snake River Sockeye (E)	Unknown***
	Upper Columbia River Spring-run Chinook (E)	Yes
	Snake River Fall-run Chinook (T)	Yes
	Snake River Spring/Summer-run Chinook (T)	Yes
	Upper Columbia River Steelhead (T)	Yes
	Middle Columbia River Steelhead (T)	Yes
	Snake River Basin Steelhead (T)	Yes
Oregon Coast	Oregon Coast Coho (T)	Yes
S. Oregon/N. California Coasts	S. Oregon/N. California Coasts Coho (T)	Unknown***
Central Valley	Sacramento River Winter-run Chinook (E)	Yes
	California Central Valley Spring-run Chinook (T)	Yes
	California Central Valley Steelhead (T)	Unknown***
North-Central California Coast	California Coastal Chinook (T)	Unknown***
	Northern California Steelhead (T)	Unknown***
	Central California Coast Coho (E)	Declining
	Central California Coast Steelhead (T)	Unknown***
	S. Central/S. California Coast	S. Central California Coast Steelhead (T)
	Southern California Steelhead (E)	Unknown***

* Trends in abundance may not be indicative of true recovery status. Other risk factors such as low levels of abundance, lack of access to historical spawning habitats, extirpation of component populations, and the lack of spatial connectivity among extant component populations are significant factors in determining recovery status. See <http://www.nwfs.noaa.gov/trt/index.cfm> and <http://swfsc.noaa.gov/textblock.aspx?Division=FED&id=2242> for detailed information on ESU status and technical recovery planning.

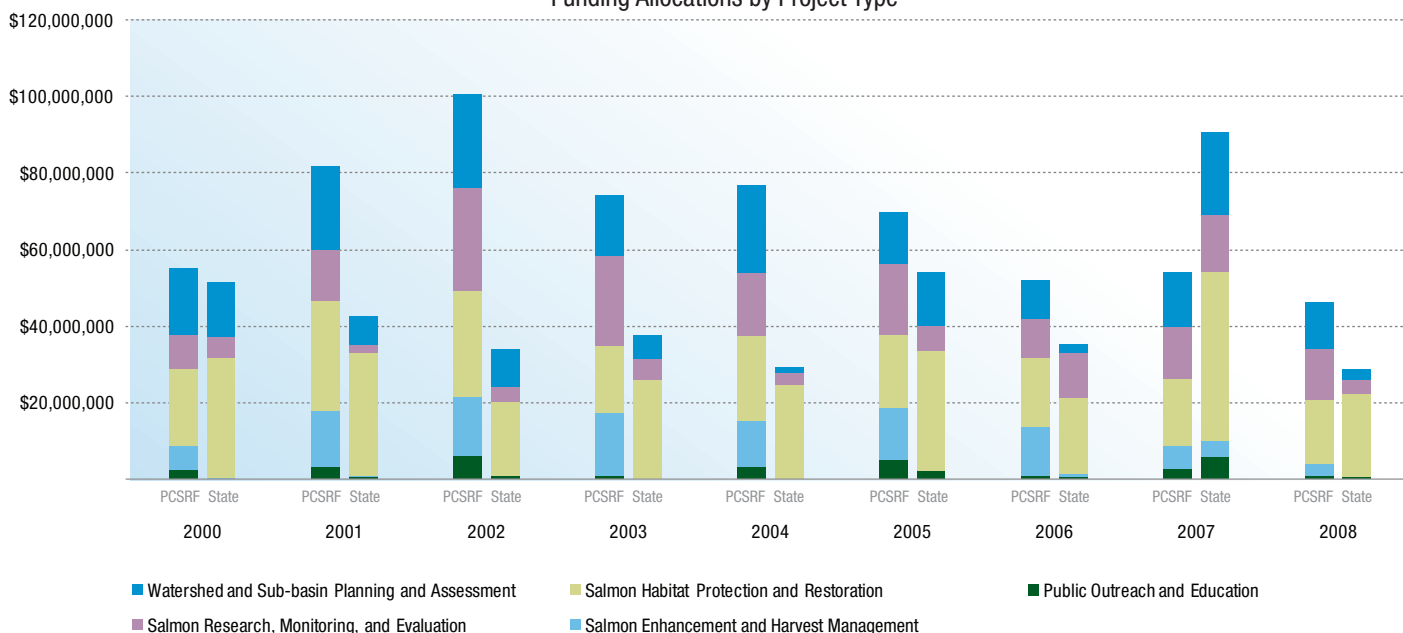
** The Puget Sound Steelhead DPS is not depicted in the steelhead figure on page 10 because population boundaries have not been mapped.

*** "Unknown" means that ten or more years of data are not available.

Summary

When combined with other important actions such as reducing habitat degradation, non-point source pollution, and fishing pressure, continued investments in salmonid protection and conservation will significantly advance the PCSRF Program's long-term goal of recovering populations to self-sustaining levels in fully functioning ecosystems. Congress, through PCSRF, has provided critical long-term support to state and tribal efforts to achieve this goal. The state and tribal entities have established competitive and accountable processes to allocate funds based on PCSRF Program goals and priorities. PCSRF funds leverage additional investments through the requirement that states provide at least a 33% match in funds, as well as in multi-jurisdictional partnerships and resource sharing across federal, state, tribal, local, and non-governmental entities. Through these partnerships, federal and state-matching funds are supplemented by significant private and local contributions at the project level, including supplies and equipment, volunteer time, additional funds, and other in-kind donations. The graph below shows the funding as it has been allocated by states and tribal entities by type of project over the last nine years. Funding from last year (FY 2009) has not been fully allocated and is not displayed. As described in the previous pages, these investments are making a difference in sustaining and recovering Pacific Coastal salmonid populations.

Funding Allocations by Project Type





▶▶ PCSRF LESSONS LEARNED

- ▶ The funding provided by PCSRF can be used for many stages in a program or project life cycle from planning, through contracting, implementation, and monitoring. The ability to support projects and programs through all these phases helps to focus resources on the projects that will make the strongest contributions to salmon conservation and recovery.
- ▶ The development and implementation of a robust performance reporting system for the PCSRF Program has proven essential in ensuring that the Program is accountable in achieving measurable goals and criteria. The successful implementation of this system has required political leadership, close coordination among grantees, considerable technical expertise, a willingness to adopt standards, and vigilance in accurately monitoring and reporting accomplishments. Emphasis on robust and transparent monitoring and reporting has no doubt contributed to the success and stability of the PCSRF Program.
- ▶ Based on best available science and an understanding of limiting factors and threats, NOAA Fisheries Service has prioritized specific activities for recovering and conserving Pacific salmon and steelhead. The stability of funding provided by the PCSRF Program has helped ensure not only that these priorities are being addressed, but has also served as a strong incentive for broad coordination and partnering such that all available resources are applied efficiently and effectively toward achieving the shared goals of Pacific salmonid conservation and recovery.

Photo Credits

Page 2 background (volunteer planting trees on the Nisqually River): Nisqually Tribe

Photo 1: Washington Recreation and Conservation Office

Photo 2: Washington Coastal Atlas

Photo 3: Washington Coastal Atlas

Photo 4: Oregon Watershed Enhancement Board

Photo 5: CRITFC June 2005

Photo 6: CRITFC November 2009

Photo 7: Washington Recreation and Conservation Office

Photo 8: Washington Recreation and Conservation Office

Photo 9: Idaho Department of Fish and Game

Photo 10: Oregon Watershed Enhancement Board

Photo 11: Oregon Watershed Enhancement Board

Photo 12: South Coast Habitat Restoration

Photo 13: South Coast Habitat Restoration

Photo 14: Alaska Department of Fish and Game

Photo 15: Alaska Department of Fish and Game



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