

Fiscal Year 2010
Accomplishment Highlights
U.S. Fish and Wildlife Service
Pacific Region Fisheries Program

2010: A Year of Milestones, Challenges, and Opportunities

Region One's Fisheries Program is the largest in the United States and one of the most diverse. Our 300 employees are engaged in an array of challenges at 15 National Fish Hatcheries (NFHs), 5 Fishery Field Offices, 3 Fish Health Centers, a nationally-renowned Fish Technology Center, the Lower Snake River Compensation Plan Office, and the Regional Office. They are all united in the task of conserving and restoring native fish and other aquatic resources in the Pacific Northwest and Pacific Islands. We work extensively with other co-managers — Tribes, Native Hawaiians, States, and others — on behalf of you, the reader of this report.

In the following pages, you'll see selected examples of the good work our Fisheries Program supported in 2010. We've highlighted six areas which we feel demonstrate the breadth of our achievements. These areas are: aquatic invasive species prevention, hatcheries, strategic habitat conservation, fish passage and habitat restoration, Pacific Lamprey and reconnecting youth to the outdoors. These are just some of the many modern storylines of a program with a 140 year legacy.

I encourage you to use this report as a stepping stone to learn more about who we are in Fisheries and what we do through our regional and field station websites. Contact us and tell us how we're doing. Better yet, join with us to help conserve, protect, and recover the remarkable, and precious, aquatic ecosystems, species and fisheries we all treasure.



Regional Director Robyn Thorson, shown here holding a pallid sturgeon in the Midwest, brings her passion for fisheries to the Pacific Region.
Credit: USFWS

**Robyn Thorson,
Regional Director, Region 1
U.S. Fish and Wildlife Service**

Cover Page:

Salmon River, Mt. Hood National Forest

Credit: Alan Dyck, Wildlife Program Manager
USDA Forest Service, Mt. Hood National Forest

Aquatic Invasive Species (AIS)

Prevention, Detection, and Management

Protecting the Columbia River Basin from Quagga and Zebra Mussels

The Columbia Basin is one of the few remaining major U.S. river systems not invaded by invasive quagga or zebra mussels. The Service plays a leading role in the Quagga-Zebra Mussel Action Plan, which outlines an integrated management approach to protect western U.S. states against these aquatic invaders.

In fiscal year 2010 the Service worked with the Pacific States Marine Fisheries Commission and other partners to update watercraft decontamination protocols and train inspectors. The Service also helped lead a rapid response exercise for Lake Roosevelt in Washington State, and supported several projects to improve mussel detection methods.



Credit: Idaho Department of Agriculture

The ability of zebra and quagga mussels to clog water pipes contributes to their billion-dollar impacts in the eastern United States.

New Pacific Islands AIS Coordinator Hired

In August 2010 the Service hired Josh Fisher as the new Pacific Islands Aquatic Invasive Species Coordinator. Fisher has a Bachelor's of Science in Natural Resource Management.

Fisher will balance his time between coordinating activities to prevent, detect, or control aquatic and terrestrial invasive species,

and management of terrestrial invasions.

Prior to his current appointment, Fisher addressed the effects of avian influenza in the Pacific Islands, and spent

four years as the Oahu Invasive Species Committee's Field Operations Coordinator.

FY 2010 AIS Highlights:

- Supported implementation of state AIS Management Plans in Idaho, Washington, Oregon, and Hawaii
- Hawaii's Division of Aquatic Resources AIS Coordinator led community-driven alien algae clean-ups with high school volunteers
- Trained federal, state, and other partners to identify and limit activities that may unwittingly spread aquatic invasive species
- Surveyed 17 miles of Washington's Chehalis River for the presence of Brazilian elodea and removed eight acres of elodea from the watershed

"[Invasive] species are probably the single greatest threat in our country to our native wildlife."

- Sam Hamilton, late Director, U.S. Fish and Wildlife Service

Working With Partners to Manage Invasive Nutria

The Service, U.S. Geological Survey and Portland State University (PSU) continued to collaborate on reducing the impact of nutria, a large, South American rodent, in the Pacific Northwest.

This past year, the project refined a predictive model of nutria range, evaluated impacts on restoration sites and began studying movement of radio-tagged nutria.

In August 2010 the Service,



Credit: Tess McBride/USFWS

Weighing and tagging nutria will help the Service and its partners better understand their movement and migration

PSU, and Pangolin Films profiled nutria and their impact on Northwest ecosystems. The documentary will run on National Geographic Television in 2011.

For more information, visit:

<http://www.fws.gov/pacific/fisheries/aquaticnus/index.cfm>

Hatcheries

*Providing Harvest,
Minimizing Impacts to Wild Fish*



Our Goals:

- Establish scientific foundations for our hatcheries and cooperative programs
- Conserve genetic resources for salmonid and other native species
- Assist the recovery of naturally spawning salmon populations
- Provide for sustainable fisheries
- Conduct needed scientific research
- Improve quality and cost-effectiveness of our hatcheries

Forward Momentum on Service Hatchery Review

Five years after launching a comprehensive scientific review of Pacific Northwest National Fish Hatcheries (NFHs) the Service owns, funds, or manages, 75% of the Service Hatchery Review Team's recommendations have been initiated, are ongoing as part of current operations, or completed.

In Fall 2010 the Service completed its analysis of 24 facilities and 53 hatchery programs in Oregon, Washington, and Idaho. The reviews of Service-owned hatcheries yielded 465 site-specific recommendations to improve operations. Of these, 353 have been addressed. Newly completed reviews for nine state-operated facilities administered by the Service via the Lower Snake River Compensation Plan include 429 additional recommendations that will now be considered with hatchery co-managers.

Region One's hatchery program is committed to leading by example as we adjust and improve hatchery practices that contribute to recovery of listed populations, avoid unintended effects and continue to provide high quality fisheries for the enjoyment of our citizens and benefit to our region's economy."

—Michael Carrier, Assistant Regional Director,
Pacific Region Fisheries Program



Tribal subsistence fishing on the Big Quilcene River. Based on our review, Quilcene Hatchery coho production will now reduce risks and improve benefits.

Credit: Ron Wong/USFWS

The Future of Hatchery Management

The Hatchery Review presents a unique opportunity for the Service and its co-managers to [take a broader ecological and long-term perspective for 21st Century hatchery management](#). For example, the Service switched production of Entiat NFH Chinook stocks to avoid risks to endangered fish in the Entiat River, modified infrastructure at Winthrop and

Kooskia NFHs to improve the efficiency and safety of broodstock collection, and reduced the number of Fall Chinook produced at Spring Creek NFH to more efficiently release fish during normal outmigration periods. Changes to existing programs are first discussed, evaluated, and then coordinated with co-managers prior to implementation.

Improvements at Idaho's Hagerman NFH

In 2010, Hagerman National Fish Hatchery worked with the Idaho Department of Fish and Game and the Shoshone Bannock and Nez Perce tribes to complete a "Stock Swap"—addressing seven Hatchery Review recommendations-- with Magic Valley Fish Hatchery. The swap will ensure that healthy Idaho steelhead are produced in a cost-effective manner and support tribal and sport fish harvests. Hatchery staff also conducted tests addressing hatchery rearing density



Sustaining sport fishing for Salmon River, Idaho, steelhead is an Service priority

Credit: Jeremy Trimpey/USFWS

issues, benefitting production and helping meet required targets. Equipment purchased to more efficiently vacuum raceways will improve fish health and save money.

For more information, visit:

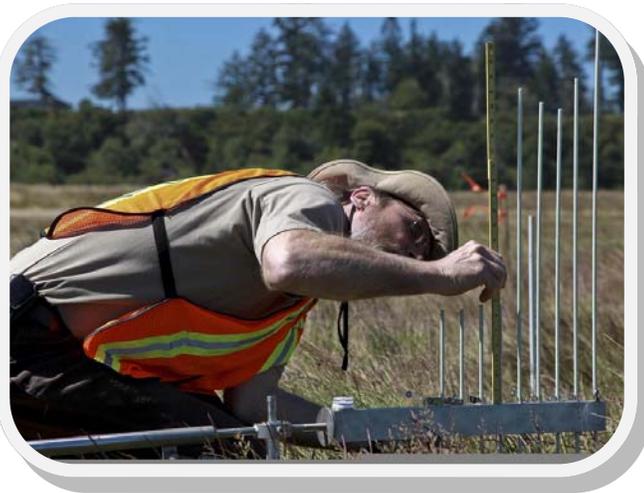
<http://www.fws.gov/pacific/fisheries/hatcheryreview>

Strategic Habitat Conservation

Planning, Design, Program Delivery, and Outcome-Based Monitoring on a Landscape Level

Anticipating Potential Climate Change Effects to Northwest National Fish Hatchery Operations

Abernathy Fish Technology Center biologists Ken Ostrand and Kyle Hanson developed a peer-reviewed, [published](#) manuscript detailing the potential effects of global climate change on Pacific Region National Fish Hatcheries. The analysis focuses on topics that are relevant to operations (e.g. water availability, sea level rise, and river temperatures). It includes a set of recommendations that can help identify climate change threats to operations at specific hatcheries and allow flexibility to adjust programs to continue in the face of an uncertain future.



USFWS biologist Bill Bridgeland taking measurements which will allow the Service to detect changes in marsh surface elevation from restoration efforts and changes associated with sea-level rise.

Decision Support Tools for Conserving Aquatic Habitat

The Pacific Region and Ecotrust have partnered to develop an aquatic habitat restoration decision support system for Oregon, Washington, and Idaho. This unique system builds on existing geographic priority areas in the Pacific Northwest for a number of

fishes by overlaying predictions of ecological changes that are foreseen due to climate change (water temperature and other hydrologic changes) and the risk associated with aquatic invasive species. When complete, it will help guide future investments in aquatic habitat conservation and restora-

Credit Roy Lowe/USFWS

The Fisheries

Program Landscape

- Includes 22 major river basins in the Pacific Northwest whose waterbodies encompass 277,600 square miles.
- 365 perennial streams located on the five largest Hawaiian Islands (Kauai, Oahu, Maui, Molokai and Hawaii).
- Focus Areas: Oregon Coast, Columbia River Basin, Olympic Peninsula and Puget Sound, Hawaii; Idaho's Bear Lake and Clearwater Basins

“Now more than ever our conservation work must be science-driven, and ... strategically support achievement of our conservation goals at broader scales...”

-Dan Ashe, Director, U.S. Fish and Wildlife Service

Applied Science In Western Washington

The Western Washington Fishery Resource Office helped launch the North Pacific Landscape Conservation Cooperative (LCC). This LCC provides scientific information and technical assistance to better understand species and habitat responses to climate change and other ecological processes (e.g. fire, invasive species). Staff provided outreach to prospective external



Region 1 is active in three Pacific Northwest LCCs: the Great Northern, Great Basin, and North Pacific LCCs

partners to set the stage for future collaborations.

Learn about Climate Change and Science Applications

<http://www.fws.gov/pacific/Climatechange/>

RESTORING AQUATIC HABITAT AND FISHERIES

The National Fish Habitat Action Plan

Grassroots, Science Based, Partner-Driven Conservation

In fiscal year (FY) 2010, the Pacific Region Fisheries Program provided technical and financial support (\$701,336) to six fish habitat partnerships, four of which are officially recognized by the National Fish Habitat Action Plan Board (NFHAP Board), and two of which are candidates for Partnership. We are continuing these efforts in FY 2011. The Region provides support to 25% of the NFHAP Board-approved Partnerships, listed below:

- Hawaii Fish Habitat Partnership
- Western Native Trout Initiative
- Desert Fish Habitat Partnership
- Reservoir Fisheries Habitat Partnership
- North American Salmon Stronghold Partnership (Candidate)
- Pacific Marine Estuarine Fish Habitat Partnership (Candidate)

Partnerships develop strategic plans identifying priority actions to restore target fish species and habitat. Stakeholders apply for NFHAP funds through the Service to implement restoration actions.

Regional FY 2010 NFHAP Highlights:

- 6 projects initiated
- 2 projects finalized
- 1 fish passage barrier removed
- 17 miles stream habitat reconnected
- 3.2 miles stream habitat enhanced
- \$315,200 in partner resources matched with Service funds, a 1: 4.2 cost share ratio



The National Fish Habitat Action Plan Mission:

To protect, restore and enhance the fish and aquatic communities through partnerships that foster fish habitat conservation and improve the quality of life for the American People.

FEATURED PROJECT: Waipa Stream Restoration (Hawaii Fish Habitat Partnership)

The Waipa Foundation, through support from the U.S. Fish and Wildlife Service, is implementing a restoration project along Waipa Stream – a drainage into Hanalei Bay (pictured, top right) on Kaua'i Island. Hau, an invasive species, has overgrown the stream (pictured, center right) impeding upstream migration of native fish, such as the endemic Hawaiian goby – *O'opu nopili* (pictured, bottom right) and invertebrates that are diadromous. These species must complete a migration to and from the sea in order to complete their life cycle. Hau will be removed and a mix of native and Polynesian-introduced riparian species will be planted by students who come to visit the Waipa watershed, which is managed as a learning center where Hawaiians and the local community can renew ties to 'aina (land and resources).



Visit the NFHAP website at:

<http://www.fishhabitat.org/>

THROUGH PARTNER-FOCUSED, SERVICE PROGRAMS

Regional FY 2010 NFPP Highlights:

- 14 fish passage barriers removed
- 106.7 miles stream habitat reconnected
- 13.6 miles stream habitat enhanced
- 762 acres estuary habitat re-opened to fish passage
- \$7.3 million Partner funds matched
- 1 to 6.7 cost share



Before



After



The Result

The National Fish Passage Program

Voluntary, Incentive-based Approaches to Reopening Waterways

The National Fish Passage Program (NFPP) enables on-the-ground, partner-oriented efforts to restore self-sustaining fish populations and improve aquatic habitat in the Pacific Region and elsewhere nationwide. Originating in 1999 as part of an effort to reconnect fish to historic, isolated habitats and to develop a national fish passage database, the NFPP grew in 2008 with the help of the Open Rivers Initiative to its current, national level of \$11 million in annual appropriations.

Regionally we now focus on a broader suite of fish species and tackle passage issues at a larger scale. In fiscal year 2010, we used a little over \$1 million to support 15 projects in Oregon, Washington, Idaho, and Hawai'i.

Our Fish Passage Program objectives are:

- 1) Reduce aquatic habitat fragmentation by removing or bypassing fish passage impediments;
- 2) Provide funding and technical assistance to partners on cooperative fish projects;
- 3) Promote stewardship of fishery resources; and
- 4) Increase public understanding of fish passage challenges.

FEATURED PROJECT:

Indian Creek (Adams County, Idaho)

A culvert (top left photo) on a road in Adams County, Idaho historically blocked upstream passage for bull trout (bottom left) and redband trout in Indian Creek, an important coldwater habitat refugia in the Hells Canyon Region of the Snake River Basin. In 2010, the U.S. Fish and Wildlife Service provided funding and partnered with Idaho Power Company, the Idaho Office of Species Conservation and the U.S. Forest Service (Payette National Forest) to replace the culvert barrier with a full-spanning bridge (middle left) allowing 4.5 miles of upstream passage for all life stages of fish. This project was identified as an important recovery plan task for listed bull trout, and it also promotes a healthy functioning stream system by simulating the natural streambed and allowing full routing of sediment and woody debris. The cost-share ratio on this project was 1 to 8.3 in matching partner funds.

For more information on Pacific Region Fish Passage, visit:

<http://www.fws.gov/pacific/fisheries/fishpassage/index.html>

Pacific Lamprey

Taking action on a tribal species of concern in collaboration with partners



“Earthworms” of our Rivers

- Lampreys spend the first three to seven years of life as larvae buried in the bottom of streams in slow-moving water
- Like salmon and steelhead, lamprey migrate to sea to mature for one to three years then return as adults to freshwater streams, where they live for about a year before spawning
- To many Pacific Northwest Indian tribes, Pacific lamprey, or ‘eels,’ are culturally significant and have value as a food source and medicine
- Pacific lamprey range from the Pacific Northwest to Baja California, Mexico, and around the Pacific Rim to Japan
- Lamprey have been caught as far as 62 miles offshore and at depths up to 2,600 feet

Publishing best practices guidelines for federal land managers and partners to conserve Pacific Lamprey

In response to requests from tribes, federal agencies and others, the Service released the [*Best Management Practices to Minimize Adverse Effects to Pacific Lamprey*](#) on April 29, 2010. The document focuses on recommended practices for Pacific lamprey conservation in upstream and upriver habitat. Significant declines of Pacific lamprey throughout its range over the past three decades make such voluntary practices important. The Best Management Practices complement partners’ conservation efforts such as tribal restoration plans and the U.S. Army Corps of Engineers’ 10-year passage plan. Although the focus is on minimizing the impact of stream disturbing activities on federal public lands, it can also help other state, tribal and private land managers protect populations of this culturally- and ecologically-significant species.



Credit: U.S. Geological Survey

Pacific Lamprey ammocetes, or larvae, can live in the muddy substrate of freshwater streams for up to three to seven years.

We need to educate people about not only importance of lamprey to [Pacific Northwest] tribes, but their importance to the ecosystem.

— Elmer Crow, Nez Perce Tribal Elder

The path towards a Rangewide Conservation Plan

Working with Tribes to Conserve Lamprey

In 2010 the Fisheries Program hired Tui Malinga of the Nez Perce tribe to radio track adult lamprey in Idaho; assessed genetic diversity of lamprey collected in Oregon by tribal partners; monitored fish health of the Yakama Nation’s Lamprey program; co-funded efforts to remedy juvenile lamprey entrapment in water

diversion fish screens; and began work on an educational video highlighting both lamprey’s ecological significance and cultural importance to tribes. Tribal and Service collaboration continues in 2011 with data-gathering, stakeholder meetings, and setting shared priorities.

The Service reached a major milestone in 2010 with the publication of the Pacific Lamprey Draft Assessment and Template for Conservation Measures.

The Template documents range-wide historic and current distribution of Pacific lamprey, their conservation status, threats and limiting factors to area populations, research needed, and recommended conservation actions to sustain or rebuild depressed populations.

Tribes, government agencies,



Credit: High Country News

Elmer Crow is a Nez Perce Tribal Elder and longtime Pacific Lamprey advocate

scientific institutions, non-profit groups, utility companies and private landowners provided input to help finalize the Template into a Rangewide Conservation Plan in 2011.

For more information about Pacific Lamprey, visit:

<http://www.fws.gov/pacific/Fisheries/sphabcon/lamprey/index.html>

Youth and the Great Outdoors

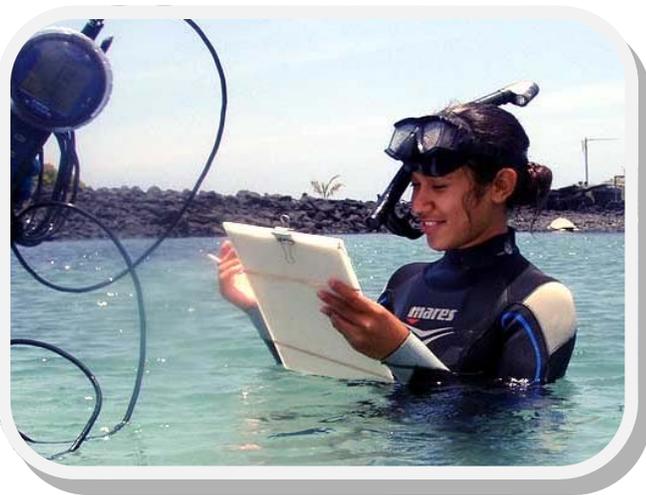
Educating, Engaging, And Employing America's Youth



Fisheries Program Highlights

The Service's Connecting People With Nature Campaign and the Secretary of the Interior's Youth and the Great Outdoors Initiative connect Americans, especially children and young adults, to the natural world and natural resource career opportunities.

The Pacific Region Fisheries has a proven track record of using its facilities, its programs, and its people to learn about and connect to Pacific Northwest and Hawaii watersheds, aquatic habitats, and priority Service aquatic species. In 2010, 14 of our Fisheries Program facilities hired youth aged 15-25 either directly or through partnerships to raise salmon and steelhead, track and tag native fish populations and restore habitat.



Credit: USFWS

A "day in the field" for Service intern Raenne Cobb-Adams, studying the marine environment off the coast of Hawaii.

Spotlight: Youth and Habitat Conservation in Hawai'i

In FY 2010, the Pacific Islands Fish and Wildlife Office funded the University of Hawaii-Hilo Pacific Intern Program for Exploring Science (PIPES) to support an intern placed with the Hawaii Fish Habitat Partnership. The PIPES program is an academic internship

program that places Native Hawaiians and Pacific Islanders in resource agencies under the supervision of a mentor. Intern Raenne Cobb-Adams (above) helped study and restore unique, sensitive Hawaiian habitats like anchialine pools.

FY 2010 By the Numbers

- More than 260,000 visitors to Pacific Region Fisheries facilities
- 1,436 aquatic outreach and education activities sponsored
- 69 youth temporarily hired, a 60% increase over FY 2009 levels.
- More than 21,000 volunteer hours logged

We've got to make America healthier by making it easier for people, especially our nation's youth, to get outside.

-President Barak Obama, 2/16/11

SPOTLIGHT: Youth Fisheries Academy in Washington

In FY 2010, the Western Washington Fish and Wildlife Office designed and implemented a summer outreach program to promote eco-literacy and to inspire and educate future fisheries biologists. Hiring two students who assisted with outreach, field work and served as instructors, the Office developed five day camps called "Youth Fisheries Academy" offered to youth in Lacey,



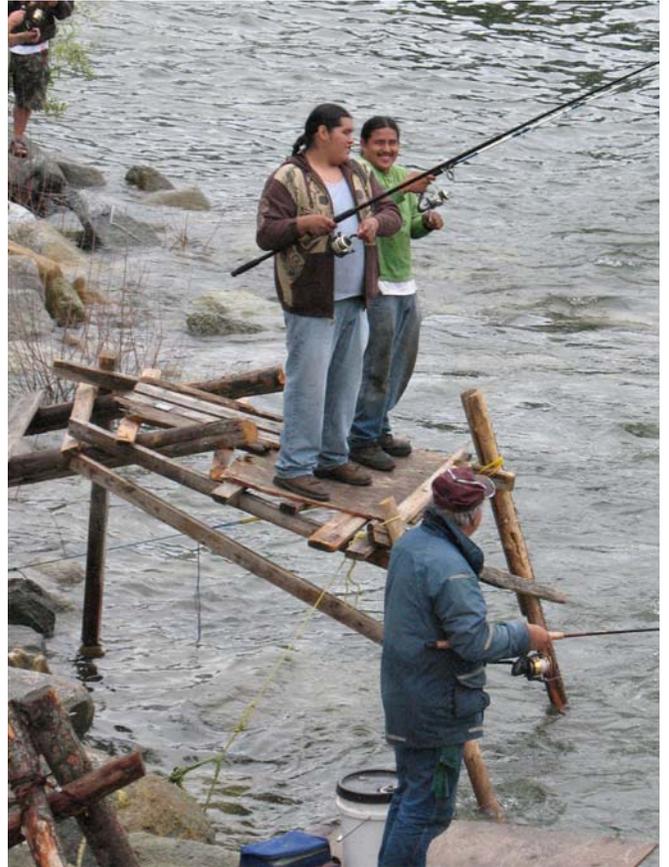
Credit: USFWS

Olympia, Tumwater and Shelton, Washington. Hands-on activities were designed to give participants a taste of what it is like to be a fisheries biologist.

Follow two field-based, youth-oriented Fisheries Blogs;

<http://fish-notes.blogspot.com>

<http://the-fish-files.blogspot.com/>



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