



Western Fisheries Research Center (WFRC)

## Western Fisheries Science News



Detroit Dam on the North Fork Santiam River, a major tributary of the Willamette River, poses a challenge to juvenile fish on their journey to sea. Photo by Philip Haner

### USGS Helps Spring Migrating Salmon

As spring gets underway in the Pacific Northwest, many juvenile fish begin their migration from natal waters to the ocean. For some fish, however, this migration is impeded by man-made barriers. In the Willamette River Basin of western Oregon, home to ESA-listed Chinook salmon and steelhead trout, barriers pose a substantial challenge for downstream migrants. The Willamette Project—a series of dams, revetments, and hatcheries—primarily serves a need for flood control, but also provides hydroelectricity, irrigation water, navigation, instream flows for wildlife, and recreation. Although the dams play important roles in the region, there is often a cost to migrating fish. In a 2008 Biological Opinion, the National Oceanic and Atmospheric Administration determined that the Willamette Project was jeopardizing the sustainability of anadromous fish stocks and called for improvements in fish passage and other areas. USGS plays a critical role in providing the science to reduce the costs of dams on the fish that are so important to our region ecologically, economically and culturally.

Scientists from the Western Fisheries Research Center (WFRC) are currently working with the U.S. Army Corps of Engineers, Oregon Department of Fish and Wildlife, and Ore-

### Events

**USGS at Fish Health Immune Reagent Meeting:** On April 12th WFRC researchers met with collaborators from University of Mississippi, Cornell University, University of Massachusetts and the USDA-ARS for an annual meeting to discuss tool and reagent development for addressing immune responses in agriculturally important species like rainbow trout, catfish, cattle, swine, horses and chickens. The group develops and distributes tools as part of the US Veterinary Immune Reagent Network. For more information, **contact John Hansen; [jhansen@usgs.gov](mailto:jhansen@usgs.gov); 206-526-6282.**

**USGS Shares Research with Middle School Students:** On April 22nd WFRC biologist Lisa Wetzel spoke with middle school students at Orca K-8 in Seattle. Wetzel highlighted WFRC research in Olympic National Park (ONP) and the Elwha River to prepare the 6th graders for an upcoming trip to ONP. Students learned about research and monitoring associated with the Elwha dam removal and about ONP natural resources. For more information, **contact Lisa Wetzel at [lwetzel@usgs.gov](mailto:lwetzel@usgs.gov); 206-526-6282.**

**USGS Ecologist Speaks About Elwha Dam Removal:** On April 10th WFRC ecologist Jeff Duda presented a seminar on dam removal and river restoration in the Elwha River at the Huxley College of the Environment, Western Washington University in Bellingham, WA. The talk highlighted progress on removal of the dams, physical and biological responses, and sediment release. For more information, **contact Jeff Duda at [jduda@usgs.gov](mailto:jduda@usgs.gov); 206-526-6282.**

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gon State University to help improve downstream passage of fish at two flood control reservoirs on tributaries of the Willamette River. The movements of juvenile salmonids in these reservoirs and in the Willamette River downstream are studied using acoustic transmitters surgically-implanted in the fish. The data from these fish are used to estimate their 3-dimensional positions near the dam outlets to evaluate operational or structural changes to improve downstream passage rates. Data from the same fish are also used to describe general behaviors throughout the reservoirs and migration timing in the Willamette River downstream. Researchers work with local governments and railroads near Salem and Portland to gain access and establish detection sites at several bridges spanning the Willamette River. The field work is year-round, allowing scientists to better understand factors that affect dam passage. Results from these studies inform decisions about potential alternatives for improving downstream passage conditions for juvenile salmon and steelhead in these flood-control reservoirs.

Scientists at the Columbia River Research Laboratory, a field station of WFRM, have extensive experience using a broad range of biotelemetry technologies to study fish behavior in response to structures, flows, and natural habitats. Much of their research is in the Pacific Northwest, although their resources and expertise have been used in other parts of the nation and also internationally. Their researchers are in the forefront of applying novel biotelemetry approaches. Through applied research, such as the current work in the Willamette River Basin, the USGS is playing a critical role in providing sound science to reduce the impact of dams on important natural resources.

For more information see <http://pubs.usgs.gov/of/2013/1079/> <http://pubs.usgs.gov/of/2012/1250/> or contact John Beeman at [jbeeman@usgs.gov](mailto:jbeeman@usgs.gov) or 509-538-2299.

### WFRM Awarded Grant to Study Health of Yukon River

**Salmon:** Paul Hershberger, Diane Elliott and Maureen Purcell have been awarded a 2-year grant by the Arctic Yukon Kuskokwim Sustainable Salmon Initiative to conduct research on the fish parasite *Ichthyophonus*. This parasite may drive declines in Yukon River Chinook salmon. The project comprises controlled laboratory parasite exposures and will complement field studies.

For more information, contact Diane Elliott, at [dge Elliott@usgs.gov](mailto:dge Elliott@usgs.gov) or 206-526-6282.

## New Publications

**WFRM Scientists Study Food Web Interactions with Juvenile Forage Fish:** In the latest issue of the *USGS Sound Waves* Monthly Newsletter, WFRM researchers describe surveys conducted for juvenile surf smelt and sand lance and their prey in Puget Sound. These forage fish provide a key link in the marine food web between zooplankton near the bottom of the

food web and economically and socially valuable predators as salmon and killer whales. For more information see <http://soundwaves.usgs.gov/2013/04/> or contact Theresa Liedtke at [tliedtke@usgs.gov](mailto:tliedtke@usgs.gov) or 509-538-2299.

### USGS Scientists Contribute to Assessment of Potential Climate Change Effects in the Olympic Coast National Marine Sanctuary:

USGS scientists Nancy Elder and Steve Rubin authored sections on sea urchins and fish in a new report entitled "Climate Change and the Olympic Coast National Marine Sanctuary: Interpreting Potential Futures." The report was published last week and is available at <http://go.usa.gov/TEjC>. For more information contact Steve Rubin at [srubin@usgs.gov](mailto:srubin@usgs.gov) or 206-526-6282.

### New USGS Publication on Pacific Lamprey:

A new manuscript titled "Distribution of Pacific Lamprey *Entosphenus tridentatus* in Watersheds of Puget Sound Based on Smolt Monitoring Data" is presented in the latest issue of *Northwest Science*. In it WFRM biologists and colleagues report on the current status of Pacific lamprey in 18 major watersheds. For more information visit <http://www.bioone.org/toc/nwsc/87/2> or contact Mike Hayes at 206-526-6282.

## In The News

WFRM biologist Mike Parsley was quoted in an article of the *Columbia Basin Bulletin* on April 19th about the reduced predation by Stellar sea lions on white sturgeon observed this year compared to past years downstream from Bonneville Dam. Visit <http://www.cbbulletin.com/426182.aspx> or contact Mike Parsley at [mparsley@usgs.gov](mailto:mparsley@usgs.gov) or 509-538-2299.

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