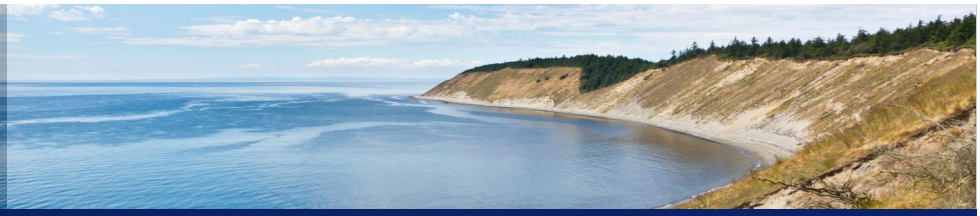
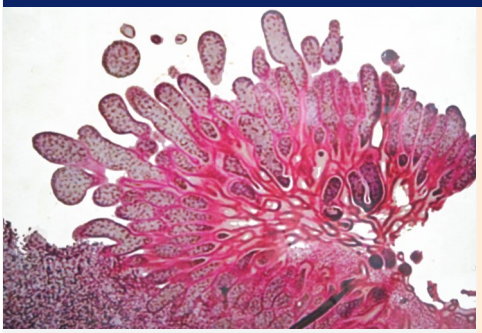


Western Fisheries Research Center



Center Facts and History

- WFRC was founded in 1935 as part of the first federal fish hatchery program designed to compensate for hydroelectric development on the Columbia River.
- Over the years WFRC staff have won multiple awards recognizing the global importance of their science.
- WFRC's Columbia River Research Laboratory is a world leader in telemetry and modeling.
- WFRC pioneered techniques to rear pathogen free herring in captivity— an important advance for studying disease dynamics.
- WFRC houses the country's first aquatic biosafety level 3 disease containment facility.
- WFRC was instrumental in bringing several species of desert fish back from the brink of extinction.
- WFRC's Seattle facility contains six artificial streams valuable for conducting ecological experiments.
- WFRC scientists identified factors critical for the recovery of endangered Klamath Lake suckers in southern Oregon.
- The World Organisation for Animal Health designated WFRC as an OIE world reference center of expertise for fish pathogens.

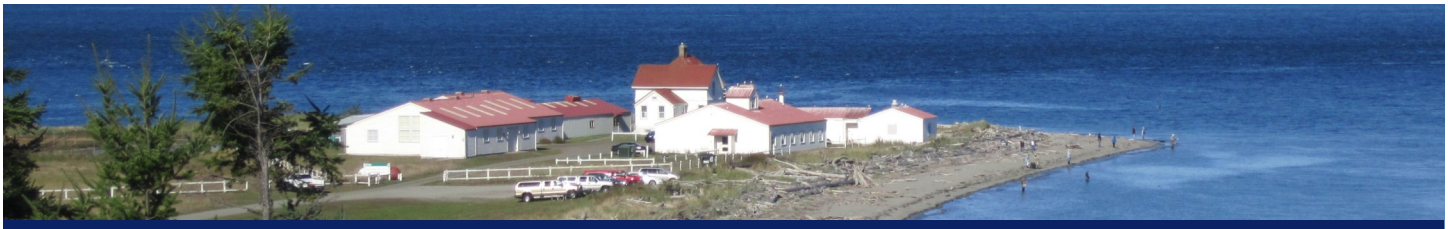
Excellence in Aquatic and Fisheries Science

The mission of Western Fisheries Research Center (WFRC) is to provide scientific understanding and technological capacity to support sound management and conservation of natural resources, with an emphasis on aquatic ecosystems, fisheries biology and fish health. WFRC strives to provide natural resource managers, policy makers and the scientific community with unbiased and socially relevant scientific information to support informed decision-making. The Center stays responsive to changing and emerging issues by maintaining a highly skilled and adaptive workforce and infrastructure. Ongoing research falls into three primary science themes:

Drivers of Ecosystem Change: Supporting natural resource management in a rapidly changing environment.

Aquatic Animal Health: Improving understanding and control of diseases affecting wild fish and other aquatic animals.

Restoration Ecology and Species Recovery: Helping restore the health and resilience of species and ecosystems impacted by human activity.



Western Fisheries Research Center Field Stations

WFRC is headquartered in Seattle, WA and has laboratories on Marrowstone Island, WA and in the Columbia River Gorge, WA; Klamath Falls, OR; and Reno, NV. These five sites are located near important ecosystems, allowing WFRC to address priority science needs of the Department of Interior and external partners.

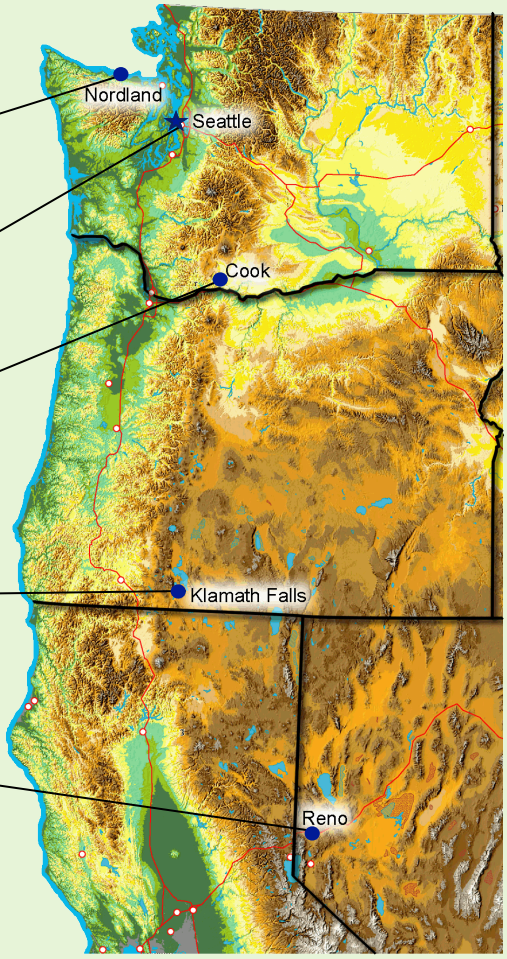
Marrowstone Marine Field Station, Nordland, WA
http://wfrc.usgs.gov/fieldstations/marrowstone/
Phone: (360) 385-1007

Headquarters and Seattle Laboratory, Seattle, WA
http://wfrc.usgs.gov/fieldstations/hq/
Phone: (206) 526-6282

Columbia River Research Laboratory, Cook, WA
http://wfrc.usgs.gov/fieldstations/columbia/
Phone: (509) 538-2299

Klamath Falls Field Station, Klamath Falls, OR
http://wfrc.usgs.gov/fieldstations/klamath/
Phone: (541) 273-8689

Reno Field Station, Reno, NV
http://wfrc.usgs.gov/fieldstations/reno/
Phone: (775) 861-6390



Surveying ecological changes following the decommissioning of two dams on the Elwha River, located on Washington's Olympic peninsula.

Releasing a tagged Lahontan cutthroat trout during a volunteer fish derby at Independence Lake in northern California.

Changes in water chemistry in agricultural areas impact species and ecosystems.

Non-native species like this walleye (shown with partially digested prey) are altering the food webs of local rivers.

Drivers of Ecosystem Change

Ecosystem services support all life on Earth, providing food, water, energy, minerals and natural hazard mitigation. For ecosystems to continue providing these benefits in the face of increasing global pressures, human interactions with the environment must be well-managed. Challenges expected in the coming decades include changes in climate, land cover and water availability; accelerated habitat loss; increased invasive species introductions; and heightened environmental contamination. WFRC will provide science to support the proactive management of biological resources in this rapidly changing world. Studies of past changes provide insight into how life reacts to large-scale alterations to climate and atmospheric chemistry. Predictive modeling, forecasting and monitoring will provide managers and policy makers with tools and data to manage resources in a time of unprecedented global change. Experiments to address specific challenges like fish passage at dams and the impacts of invasive species help managers protect natural resources.

Example Projects:

Warming Climate and Fish Health: http://go.usa.gov/WxsF

Aquatic Invasives: http://goo.gl/XgjUoB

Changing Deltas in the Skagit: http://goo.gl/Zrl1Tk

Aquatic Animal Health

Disease has important influences on the population dynamics and ecosystem functions of all aquatic and terrestrial systems. Disease impacts on free-ranging fishes often go unobserved and are difficult to study. In addition, fish face novel emerging diseases related to commercial aquaculture, the introduction of exotic pathogens through global trade, habitat alteration, climate change and contaminants. These pressures may act synergistically with naturally-occurring disease to have oversized impacts on free-living populations. WFRC research on aquatic health will improve our understanding of disease ecology among natural populations of freshwater and marine fishes and provide tools and predictive capabilities to aid in management.

WFRC biologists use cutting edge genetic, genomic and microbiological techniques to study important diseases of aquatic animals.

Example Projects:

Emerging Fish Virus in Western WA: http://go.usa.gov/Waqe

Bacterial Kidney Disease in Salmon: http://go.usa.gov/Wa3x

Viral Hemorrhagic Septicemia: http://go.usa.gov/Wa35

Program Overview: http://goo.gl/UjBCOS

Special lines of specific pathogen free fish reared in captivity allow WFRC scientists to isolate single variables of interest .

WFRC Partners

Western Fisheries provides technical and intellectual capacity to support the science needs of many partners throughout the Northwest and beyond. These include:

State and federal agencies and local governments

Non governmental organizations, private industry and universities

Native tribes, First Nations and international entities.

Learn more: http://go.usa.gov/WxeW

Restoration Ecology and Species Recovery

The Pacific Northwest has abundant natural resources of enormous value to society, both as raw capital and also for the ecosystems services they provide. Sometimes the economic and ecological values of natural resources conflict, resulting in changes to ecosystem function. For example, forests are valued for wood harvest, fish and wildlife habitat, recreation and aesthetics. Supporting these values simultaneously requires management. But management actions combine with natural processes to create new conditions. Natural resource managers are often tasked with changing current ecosystem processes to match historical or preferred patterns. These efforts vary in focus. One example is the regional removal of invasive annual grasses that alter the occurrence of wildfire. Management efforts can also focus on the recovery of individual species that have legal protection or significant economic value, like Pacific salmon. WFRC conducts ecological research to provide managers with the science they need to ensure that ecosystems function consistently with societal values. Science to support species recovery informs efforts to conserve biological diversity.

WFRC is monitoring ecological changes associated with the largest dam removal in history on the Elwha River.

WFRC scientists work with Fish and Wildlife Service to recover endangered suckers in the Klamath basin.

Example Projects:

Elwha River Restoration: http://www.usgs.gov/elwha

The Recovery of Klamath Lake Suckers: http://go.usa.gov/Wxpw

Recovering Endangered Desert Fish : http://goo.gl/WzoH8j

WFRC's Seattle Facility

For More Information Contact:

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