

Northwest Indian Fisheries Commission 2024-2025 Washington Sea Grant Hershman Fellowship Description

Host Organization

Northwest Indian Fisheries Commission
6730 Martin Way East, Olympia, Washington 98516

Fellowship Location

Northwest Indian Fisheries Commission Olympia office plus some travel in western Washington

Fellowship Mentor/Supervisor

Eliza Ghitis, Climate Scientist, eghitis@nwifc.org, 360-438-1180, ext. 377

Other Key Mentors

Fran Wilshusen, Director of Environmental Protection

Marcia House, Tribal Fish Health Program Manager

Project Title

Climate Resilience Planning for Tribal Fish Hatchery Programs

Position Description

The Northwest Indian Fisheries Commission (NWIFC) is a support organization for the 20 Native American treaty tribes in western Washington. It acts as a central coordinating body and clearinghouse for scientific, technical, policy, and management issues. The NWIFC also serves as a unified voice on matters of mutual concern to the treaty tribes. In the proposed project, the Hershman Fellow will work with NWIFC staff, tribal staff, and non-tribal partners to evaluate the effects of climate change on tribal fish hatcheries and to identify potential science-based solutions and adaptation strategies. In addition to the climate change vulnerability assessment and preliminary adaptation plan for long-term tribal hatchery resilience, the fellow will also support climate policy analysis and planning for tribes and at the state and federal levels.

Traditions of fishing are essential to tribal culture and the treaty rights of the NWIFC member tribes. Over the last century, Pacific salmon and trout populations have declined from historical levels throughout western Washington. Although direct counts are not available, it is estimated that native salmonid runs are less than 10% of the runs in the late 1800s.¹ Since 1999, there have been three species of salmon and steelhead in western Washington listed as threatened or endangered under the Endangered Species Act (ESA). Tribal fish hatcheries play a role in the exercise of tribal treaty rights by mitigating the loss of natural fish production due to human-caused disturbances, such as habitat loss and climate change. In Puget Sound, hatcheries contribute 70 to 80% of the coastal salmon and steelhead catch.²

Tribal hatchery programs generally provide either harvest or conservation benefits, and some provide both. By maintaining the abundance of a local fish population, hatchery conservation programs offer a safety net for the genetic identity and diversity of the natural population threatened with demographic extinction. However, tribal fish hatchery operations and output are subject to the negative effects of climate change that are already occurring and will likely accelerate in the future: warmer water, subsequent increases in fish disease, lower summer water

availability, changes to hydrograph timing and patterns, and flooding and erosion from more intense winter storms and rising sea levels. Understanding of the challenges facing tribal fish hatcheries will inform decisions around investments to make hatcheries more resilient to climate impacts, thus helping to ensure that treaty-protected fish runs persist for generations to come.

Major Project Components and Tasks

The Hershman Fellow will have opportunities to learn and contribute through the activities described below. In addition, the fellow will participate in shaping these activities based on the fellow's expertise, experience, and learning goals. Components of the project include:

- Supporting NWIFC staff in convening and participating in a series of meetings throughout western Washington to document concerns, needs, observations, and goals for adaptation with tribal hatchery managers and natural resources staff.
- Compiling and describing climate adaptation efforts underway at tribal fish hatcheries.
- Supporting NWIFC staff in identifying environmental and biological sources of resilience in each watershed of the NWIFC member tribes.
- Supporting NWIFC, treaty tribes, and non-tribal partners in identifying infrastructure and operational improvements that would promote resilience in each facility.
- Supporting NWIFC and tribal staff in drafting a regional report covering climate change vulnerabilities and potential adaptation options for the tribal fish hatcheries within the watersheds of the NWIFC member tribes.
- Supporting NWIFC and tribal staff in tracking and evaluating opportunities for climate-related policy, funding, and engagement opportunities at the state and federal levels.

Networking and Professional Development Opportunities

The proposed project will occur in partnership with tribal staff and non-tribal experts in climate change and science-based adaptation solutions. The project will include opportunities to work closely with tribal hatchery and natural resources staff to include their deep knowledge of their watersheds. All information and decision-making tools resulting from this project will be produced in collaboration and shared with the NWIFC member tribes and their intertribal organizations: Hoh, Jamestown S'Klallam, Lower Elwha Klallam, Lummi, Makah, Muckleshoot, Nisqually, Nooksack, Port Gamble S'Klallam, Puyallup, Quileute, Quinault, Sauk-Suiattle, Skokomish, Squaxin Island, Stillaguamish, Suquamish, Swinomish, Tulalip, Upper Skagit, Point No Point Treaty Council, and Skagit River System Cooperative. The fellow will also work with the staff at state hatcheries (Washington Department of Fish and Wildlife) and national fish hatcheries (U.S. Fish and Wildlife Service). We will also work with experts from academic and research institutions and consulting groups as needed, such as the University of Washington Climate Impacts Group. The fellow also will have opportunities to attend professional meetings and conferences related to fisheries, hatcheries, and climate change.

¹ Lackey, R. 2000. Restoring wild salmon to the Pacific Northwest: Chasing an illusion? In: Koss, P. and M. Katz (Eds). What We Don't Know about Pacific Northwest Fish Runs – An Inquiry into Decision-Making. Portland State University, Portland, OR. Available at <http://www.epa.gov/wed/pages/staff/lackey/pubs/illusion.htm>

² National Marine Fisheries Service. 2015. Draft Environmental Impact Statement to Analyze Impacts of NOAA's National Marine Fisheries Service Proposed 4(d) Determination under Limit 6 for Five Early Winter Steelhead Hatchery Programs in Puget Sound. Seattle, WA.