

2017 – 2018 HERSHMAN FELLOWSHIP PROJECT DESCRIPTIONS

Project: Enhancing Coastal Community Resilience

Host and Mentor

Washington State Department of Ecology, Shorelands and Environmental Assistance

- Manager: Brian Lynn, Coastal Program Manager
- Project Mentor: Bobbak Talebi, Coastal Planner

Overview

Washington was the first state in the Nation to earn federal approval for its Coastal Zone Management Program (Coastal Program), established under the authority of the 1972 Coastal Zone Management Act (CZMA). The Coastal Program, housed within the Department of Ecology, meets the goals of the federal law through a comprehensive approach to coastal resource management. This work requires us to balance the often competing — and occasionally conflicting — demands of coastal resources use, economic development, and conservation. We partner to achieve this mission and focus our efforts on key priorities, which include:

- Protecting and restoring coastal wetlands.
- Preventing or reducing threats from coastal hazards.
- Attaining increased opportunities for public access.
- Partnering to manage the impacts of growth and development.
- Planning for the use of ocean resources.

While this year has a focus on community resilience to coastal hazards, we value growth and development of fellows in all areas of coastal management. The fellow will have the opportunity to explore interests and build on important tools developed during graduate studies through practical application across the different scales of governance.

Depending on the fellow's interests and the program's activities, the fellow's work could involve research and writing, policy analysis, strategic planning and project management, event planning and facilitation, partnership building and coordination, web design and maintenance and internal and external communications.

Specific Tasks and Major Project Components

Coastal flooding, wave damage and shoreline erosion will increase as climate change continues to raise sea levels and create more severe storms along Washington's coast. The 2017-2018 fellow will play an active role in Washington's Coastal Resilience Project – a three-year effort to rapidly increase the state's capacity prepare for natural events that threaten the coast. The project will improve risk projections, provide better

guidance for land use planners and strengthen capital investment programs for coastal restoration and infrastructure. Specifically, the fellow will work with other state agencies, organizations and local planners to develop state-level guidance for local governments that are using shoreline planning to address sea level rise. The fellow will also manage the Washington Coastal Hazards Resilience Network, a network of more than 75 practitioners working in hazards resilience around the state.

The Fellow will work with the Shorelands and Environmental Assistance Program at the Department of Ecology in Olympia, WA. The fellow will have a mentor and a supervisor that will oversee activities and guide development. The fellow will have a tailored Performance and Development Plan that provides a comprehensive and integrated approach to managing the relationship between mentors and fellows, evaluating fellows' progress on tasks and professional growth, and ensuring clear and open discussions about opportunities for improvement - using goal-setting, self-evaluation, and supplemental information. These elements establish the foundation for a successful fellowship and career.

Interagency and Private Sector Connections

The fellow will also be supported by a range of coastal management experts, including ocean policy, shoreline management, coastal geology and engineering, floodplain management, wetlands and critical areas and legislative engagement professionals.

Primary Partners

- Washington Sea Grant
- Federal Emergency Management Agency
- Island County
- City of Tacoma
- University of Washington Climate Impacts Group
- Western Washington University
- Oregon State University
- Washington Floodplain Management
- Washington Department of Fish and Wildlife
- U.S. Geological Survey
- Washington Emergency Management Division
- Padilla Bay National Estuarine Research Reserve
- NOAA Office for Coastal Management
- Washington State Department of Transportation
- Department of Commerce
- The Nature Conservancy

The Fellow will be encouraged to attend relevant coordination meetings, trainings or other opportunities to gain exposure and understanding of how government and non-governmental organizations work on regional coastal management. When opportunities arise, the Fellow will be encouraged to present work to a variety of regional audiences. This experience will connect the fellow to state, regional, and national partners and encourage coordinated participation in larger resilience conversations centered on fundamental and unified approaches to protecting resources, people, and systems.

Project: Continued Development of Tribal Oil Spill Response Efforts, Implementation of Makah Ocean Policy and Climate Change Adaptation Planning

Host and Mentor

Makah Tribe

- Chad Bowechop, Manager, Office of Marine Affairs
- Katie Wrubel, Natural Resource Policy Analyst, Fisheries Management

Overview

The Makah Tribal Council is a trustee of coastal and marine resources that are critically important to our culture, economy, and the well-being of our people. The changes in the environment due to climate change present a threat to those resources and a challenge for the Tribal Council's ability to uphold its shared trust responsibilities with the federal government. The Makah Tribal Council has developed an ocean policy to facilitate coordination between natural resource managers as they work to deal with climate change and other ocean management issues. The 2017-2108 Makah Hershman Fellow will support the development of oil spill response guidance documents for both internal and external use. S/he will assist with the development of the Makah Ocean Policy implementation plan and assist with associated marine planning efforts. This will require a wide breadth of engagement in the areas of oil spills, vessel traffic, climate change, marine planning, community education and outreach and partnership building. S/he will be exposed to ocean policy, the process of government-to-government consultation, traditional ecological knowledge perspectives as part of climate change adaptation and marine planning. The location of the Fellow is flexible between Seattle, Port Angeles and Neah Bay.

Specific Tasks and Major Project Components

1. Support the Makah Tribe's oil spill response efforts by:
 - Developing a Makah oil spill response manual in collaboration with relevant staff and Makah Tribal Council to aid in tribal response efforts. This will include conducting research on response methods (boom, in-situ burning, and dispersants) and developing policy briefing and decision memos, understanding Incident Command System and response procedures, developing internal geographic response plans, and natural resource damage assessment.
 - Develop a Tribal Oil Spill Response handbook for other tribes to develop tribal oil spill response programs.
 - Support continued efforts with federal partners including navigational channel improvements with the Army Corps of Engineers and a number of spill related efforts with the US Coast Guard.
 - Attend relevant oil spill forums such as the Regional Response Team/Northwest Area Committee, Puget Sound Harbor Safety Committee, and others.

- Compile lessons learned report on working across Makah Tribe's natural resource departments in developing guidance to inform the Makah Ocean Policy Implementation Plan.
2. Assist or lead ongoing Makah Marina projects, including work related to environmental impact assessments and derelict vessel removal.
 3. Participate in the Climate Change Adaptation Plan Core Team and work with policy and science staff in both the Office of Marine Affairs and the Makah Fisheries Department and contribute to the ongoing develop a climate change adaptation plan.
 4. Track potential emerging climate legislation and participate in developing as appropriate.
 5. Support the Makah Tribe's engagement in state and regional marine planning and climate adaptation forums, such as MRAC, the West Coast Regional Planning Body, and the West Coast Ocean Partnership.
 6. Collaborate with Makah Tribal staff to produce grant proposals, reports, presentations, and outreach efforts that support the above.

Interagency and Private Sector Connections

- Natural resource and fisheries agencies of treaty tribes in Washington State
- Federal and state agencies engaged in oil spill prevention/response, climate change adaptation and ocean policy, particularly those with jurisdiction on ocean and coastal waters: US EPA, Bureau of Indian Affairs, NOAA, USDA, Washington Department of Ecology, Puget Sound Partnership, Regional Response Team/Northwest Area Committee, Puget Sound Harbor Safety Committee
- Non-governmental organizations, particularly The Nature Conservancy
- Regional partnerships, federal and state forums that address ocean health and planning potentially including the Regional Planning Body, the West Coast Ocean Partnership, the Marine Resources Advisory Committee, Washington Coastal Marine Advisory Council, Northwest Indian Fisheries Commission, and the Governance Coordinating Committee of the National Ocean Council
- Academic groups focused on climate change and ocean acidification such as the Climate Impacts Group and Washington Sea Grant

Project: Advancing Habitat Conservation and Community Resilience for Washington's Marine Waters

Host and Mentor

The Nature Conservancy, Washington Field Office (Seattle)

- Jodie Toft, Acting Director of Marine Conservation/Senior Marine Ecologist
- Kara Cardinal, Marine Projects Manager
- Garrett Dalan, Coast Conservation Coordinator

Overview

The Nature Conservancy (TNC) engages in marine conservation strategies that sustain diverse marine life, abundant fisheries, and coastal economies and cultures. We collaborate with coastal communities, tribes, industry and policy makers to develop innovative practices and policies to advance sustainable fishing and aquaculture for increased resilience of marine ecosystems, economies and coastal communities throughout Washington. The 2017-18 Marc Hershman Marine Policy Fellow will have opportunities to participate in several of the major projects listed below as they align with the Fellow's interests, knowledge, and skills.

Specific Tasks and Major Project Components

1. Collaborate with TNC Washington, Oregon, California, Alaska and Canada teams, fishermen, scientists, coastal MRCs, WCMAC, Marine Resources Advisory Council and Olympic Coast National Marine Sanctuary Advisory Council to further TNC's sustainable fisheries and aquaculture projects and community climate resiliency strategy.
2. Work with a team from NOAA fisheries, Washington Sea Grant and local shellfish growers to better understanding the ecological role of shellfish aquaculture to help resource managers assess tradeoffs when planning sustainable expansion of shellfish aquaculture.
3. Help evaluate the cumulative impacts, drivers and pressures on ecological, economic (including supply chains) and social components of fisheries and aquaculture in the region, and explore the effects of climate change, ocean acidification, fishing, the onset of new uses, and market-driven changes in fishing behavior.
4. Participate in a preliminary characterization of the seafood supply chain in Washington and examination of its resilience properties in the face of large-scale change.
5. For the Washington Coastal Resilience Project (WCRP):
 - Help develop a community of practice database with case histories of climate resilience projects and planning for inclusion on the Coastal Hazards Resilience Network website, and for use as course content to train resilience ambassadors through the Coastal Training Program resilience course.

- Help connect TNC “resilience ambassadors” with updated sea level rise data and state guidance as they work at the local scale to build momentum for potential coastal resilience projects along Puget Sound and the outer coast.
6. Collaborate with TNC staff to produce grant proposals, reports, presentations, and outreach and marketing materials that support the preceding projects.

Interagency and Private Sector Connections

- Non-governmental organizations, particularly global and North American operating units of The Nature Conservancy, and the Surfrider Foundation
- Industry groups representing fishermen, shellfish growers, and other marine uses
- Coastal tribal governments
- Pacific County and Grays Harbor County Marine Resource Committees (MRC) and county staff (shoreline planners, county contractors and conservation districts)
- State policy advisory bodies, including the Washington Coast Marine Advisory Council and the Marine Resource Advisory Council
- State agencies, particularly:
 - Department of Ecology
 - Department of Natural Resources
 - Department of Fish and Wildlife
- The University of Washington
 - Climate Impacts Group
 - Washington Sea Grant
- Olympic Coast National Marine Sanctuary

Project: Enhancing Shellfish-Related Norovirus Illness Prevention and Response

Host and Mentor

The Washington State Department of Health

- Rick Porso, Office Director of the Environmental Health and Safety
- Scott Berbells, Manager of the Shellfish Growing Area Section
- Laura Johnson, Manager of the Shellfish Licensing and Certification Section

Overview

The Washington State Department of Health (DOH) Shellfish Program ensures shellfish that make it to the commercial market are safe to eat and that recreational shellfish harvesters have current information about which beaches are safe to harvest. To accomplish this, we:

- Monitor shellfish for biotoxins, pathogens, and other contaminants.
- Regularly test water quality in shellfish growing areas and check shorelines and surrounding areas for pollution sources.
- Classify growing areas based on water quality and current and potential pollution sources.
- Close shellfish areas when spills, stormwater runoff, biotoxins or other events compromise water quality or shellfish safety.
- License and inspect companies that harvest and sell shellfish commercially, ensuring they follow strict state and federal sanitation standards.
- Provide recreational harvesters with up-to-date information through the internet, Facebook, and a toll-free hotline on which beaches are open and safe for shellfish harvest.
- Manage the Pathogens Prevention, Reduction and Control Lead Organization, which administers funding for priority activities to advance the Puget Sound Action Agenda. Focus areas include implementing local on-site sewage system management plans, Pollution Identification and Correction (PIC) programs and reducing pathogen loading by improving manure management.
- Manage the Shellfish Strategic Initiative of the Puget Sound Action Agenda, which seeks to protect, and restore shellfish beds in partnership with the Washington State Departments of Ecology and Agriculture. This work is part of the National Estuary Program, a place based initiative to protect and restore the water quality and ecological integrity of the estuaries of national significance funded through the U.S. Environmental Protection Agency. Primary work includes granting and managing sub-awards to partners around Puget Sound and related policy and planning efforts with the Puget Sound Partnership. Current awards include projects focused on pollution identification and correction, sampling and monitoring, regulatory enforcement, education and behavior change.

The 2017-2018 Hershman Fellow will assist the Shellfish Program in gaining a better understanding of norovirus in shellfish and provide policy guidance. Norovirus is a

highly contagious illness. Norovirus contamination in the marine water can be due to faulty septic systems or wastewater treatment plants, stormwater runoff, dumping of boat sewage, or vomiting overboard near areas where shellfish are grown. Shellfish are filter feeders and ingest norovirus if it is present in the water. Through filter feeding, they may concentrate the virus to much higher levels than might be found in the surrounding water. In 2017, over 100 norovirus illnesses were linked to the consumption of oysters harvested in Washington State. Although the state has had previous norovirus outbreaks linked to Washington shellfish, none have reached the scale of the 2017 illnesses.

The Shellfish Program is seeking a 2017-2018 Hershman Fellow to better understand the conditions and factors that led to the 2017 outbreaks and also make recommendations for potential policy changes and programmatic improvements to prevent future outbreaks including pollution identification and correction activities. The fellow will build on their graduate studies through activities such as conducting a literature review and researching norovirus in shellfish; coordinating with partners, tribes, and the commercial shellfish industry; analyzing existing policies and developing policy proposals; developing tracking systems and communication materials; and making recommendations to the Shellfish Program. The specific fellowship components will be determined in coordination with the Fellow considering their interests, knowledge, and skills. There will also be ample opportunities for the Fellow to gain greater familiarity with other aspects of the Shellfish Program and DOH during the course of the fellowship. The location of this Fellowship is Tumwater, which is just south of Olympia.

Specific Tasks and Major Project Components

1. Collaborate with DOH, local health jurisdictions, the Food and Drug Administration (FDA), shellfish Treaty Tribes, the commercial shellfish industry, other state shellfish programs, the Canadian shellfish program partners, the Interstate Shellfish Sanitation Conference, and researchers.
2. Work with the Shellfish Program, local health jurisdictions, and the FDA to better understand, research, and document the potential cause(s) of the 2017 outbreaks in Hammersley Inlet in Mason County WA.
3. Work with researchers, the FDA, and the Public Health Lab to build capacity for environmental sampling of shellfish for norovirus and develop a protocol for how and when testing is conducted.
4. Research other state and national policies for preventing and responding to norovirus outbreaks. Summarize and make policy recommendations to the Shellfish Program for improving DOH's response to potential outbreaks and provide related guidance to the National Estuary Program section.
5. Assess the Shellfish Program's current illness reporting and tracking tools, identify improvements, and make recommendations for a more efficient and effective tracking system.
6. Attend conferences, produce reports, and give presentations of research findings and policy recommendations. Potentially organize and execute a

regional workshop in partnership with west coast states and BC to highlight current scientific knowledge.

7. Develop web content and risk communication materials and resources for shellfish harvesters, consumers, and the commercial shellfish industry. Connect local health jurisdictions and shellfish harvesters with these resources.

Interagency and Private Sector Connections

- Local health jurisdictions (environmental health and epidemiology staff)
- Shellfish Treaty Tribes
- Northwest Indian Fisheries Commission
- Commercial shellfish industry
- Pacific Coast Shellfish Growers Association
- Pacific Shellfish Institute
- State agencies, particularly:
 - Puget Sound Partnership
 - Department of Agriculture
 - Department of Ecology
 - Department of Natural Resources
 - Department of Fish and Wildlife
- Washington Sea Grant
- Food and Drug Administration
- Environmental Protection Agency
- Interstate Shellfish Sanitation Conference
- BC Center for Disease Control, the Canadian Food Inspection Agency and additional Canadian partners.