



**FINAL
PUGET SOUND
FEDERAL TASK FORCE
ACCOMPLISHMENTS
REPORT**

August 2018

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Executive Summary

On September 30, 2016, nine federal agencies and cabinet departments signed a [Memorandum of Understanding \(MOU\)](#) creating the Puget Sound Federal Task Force (PSFTF). This was an update and renewal of an existing 2008 MOU. The signatories developed a five-year Action Plan (FY2017-2021), which was accepted for implementation. The purpose of the Puget Sound Federal Task Force Action Plan (Action Plan) is to provide a shared federal vision of a healthy and sustainable Puget Sound ecosystem and a blueprint for leveraging federal agencies and resources across diverse programs on a targeted suite of priorities.

The Action Plan was developed using priorities identified in [Washington State's 2016 Puget Sound Action Agenda](#), local salmon recovery plans and programs, the Western Washington Treaty Rights at Risk Initiative, tribal habitat priorities, and the Northwest Indian Fisheries Commission's ["2016 State of our Watersheds" Report](#). The Action Plan includes more than 75 key actions to protect and restore Puget Sound, organized under seven subsections and aligned with the 2016 Puget Sound Action Agenda. Each subsection has an assigned team with a lead who coordinates the group to implement and track its actions.

The PSFTF has been working successfully under the Action Plan for over a year. This report provides an update on the following Action Plan sections: crosscutting actions, fish passage barriers, floodplains, in-stream and riparian habitat, nearshore and estuaries, stormwater, federal lands and facilities, vessel traffic, shellfish, and science and monitoring. Task Force members have used a tracking table to document progress on each action (Appendix A).

This report features some of the PSFTF's key accomplishments since the National Task Force accepted the Action Plan in January 2017. Many of these accomplishments were realized through the strong, ongoing collaboration among the federal family and their partners at the state, tribal, and local levels over many years under the Puget Sound National Estuary Program and salmon recovery efforts under the Endangered Species Act (ESA).

Key accomplishments are described in detail in the report and include the following highlights:

- The Mud Mountain Dam fish passage project contract was awarded, and construction will begin June 2018. Up to 60,000 fish, including ESA-listed species, will be moved upriver daily, once construction is completed. The project is designed for 95% survival of salmon smolts traveling downstream past the dam.
- Joint Base Lewis-McChord (JBLM) Environmental Division completed a new wastewater treatment plant with biological nutrient removal (nitrogen) capability to produce Class A Reclaimed Water. There was noticeable reduction in nitrate loading to the Sound in 2017.
- Nearly 1,000 acres of harvestable shellfish beds have been reopened since January 2017.
- The Puget Sound Restoration Fund and NOAA's Ken Chew Center produced over 4.9M native Olympia oyster seeds, which were spread at priority restoration sites, including Drayton Harbor- newly re-opened shellfish beds in North Puget Sound.
- The state/federal Shorelines Workgroup is finalizing recommendations and implementation strategies for tackling barriers associated with the federal permitting process for habitat restoration and beach stabilization projects that include soft shore approaches along the marine shoreline. One

such recommendation is to develop an activity-based ESA programmatic consultation process for marine shoreline stabilization and restoration projects, which is already underway. This work will increase certainty, shorten the permitting process, reduce costs for landowners while incentivizing fish friendly projects.

- Cutting edge research conducted by a consortium of scientists from federal and state resource agencies, Washington State University, the Suquamish Tribe, and others determined Coho salmon (*Oncorhynchus kisutch*) are particularly vulnerable to toxic stormwater from roadways and suffering high rates of pre-spawn mortality. This collaborative research also revealed that bioretention methodologies to treat stormwater are highly effective in removing toxic pollutants, which can reverse the pre-spawn mortality. The group will include local governments in their research as they test recommended methods.

Nearly all of the actions from the Action Plan are currently being implemented; the few delayed actions can generally be attributed to a lack of necessary appropriations (e.g., Puget Sound Nearshore Ecosystem Restoration Project). The regional federal leaders met multiple times with the Tribal Management Conference, state leaders, and tribal leaders. The regional federal leaders formed four new workgroups to implement specific actions or sections within the Action Plan. The PSFTF continues to actively participate in the Puget Sound Management Conference, including participation on the Ecosystem Coordination Board, the Salmon Recovery Council, and the Science Panel.

One of the primary benefits of the PSFTF has been the support by regional federal and state leaders for staff participation in the various workgroups and subteams established under the Action Plan. Subteams for each of the sections of the Action Plan track progress and provide support for each of the actions.

The PSFTF's Regional Implementation Team (RIT) recommends that the Action Plan be presented to the National Task Force leadership group for approval, with this accomplishments report and tracking table as supporting evidence of the group's efficacy and a blueprint for future progress.

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Introduction

Puget Sound is a vital resource for the State of Washington and is a national asset, supporting highly valuable seafood, agricultural, forest and port industries. Puget Sound was one of the first of 28 Estuaries of National Significance under section 320 of the Clean Water Act, because it is critical to the environmental and economic well-being of the region and nation.

However, Puget Sound is experiencing significant challenges, largely due to heavy pressures from human population growth. This has resulted in a marked decline in native salmon runs- to the point several are listed as threatened under the ESA. In addition, thousands of acres of shellfish beds are closed due to pollution, roughly 70% of Puget Sound's original estuaries and wetlands have been lost, and nearly a third of the Puget Sound shoreline is armored.

These ecological stressors have impacted tribal treaty rights to harvest salmon and shellfish in usual and accustomed fishing areas. Tribal treaty rights and trust responsibilities are important factors in Puget Sound recovery and protection efforts. The PSFTF MOU recognizes the importance of respecting Puget Sound tribal treaty rights and the federal government's obligation to do so. The PSFTF consulted with Puget Sound Tribes in the development and update of the Action Plan and coordinates and partners with tribes in the implementation of the Action Plan. Regional Federal Task Force leaders meet with Puget Sound tribal leaders at least once a year.

The PSFTF formed in 2016 with the purpose to:

- Strengthen intergovernmental (federal, state, and local), tribal, Puget Sound Management Conference, and public coordination;
- Strengthen the federal contribution of scientific and technical expertise;
- Help to fulfill federal trust responsibilities to the Puget Sound federally recognized tribal governments as they relate to the Action Plan and priority actions; and
- Create a standing federal venue through which to share information, meet and engage in government-to-government consultation related to the action plan and priority actions.

The PSFTF is comprised of two primary entities:

- The National Federal Task Force is the Washington, D.C.-based leadership group comprised of senior, executive-level staff with two co-chairs: one from the Council on Environmental Quality and one rotating from the federal agencies - the Environmental Protection Agency (EPA) is first.
- The RIT is comprised of regional principals or their designees from each participating federal agency, as well as pertinent subject matter expert staff. The focus of the RIT was to develop (and now implement) the Puget Sound Federal Action Plan. The group is co-chaired by the EPA Region 10 Regional Administrator and a rotating regional federal leader (National Oceanic and Atmospheric Administration first). At the staff level, EPA's Puget Sound Team manager and NOAA's Fisheries North Puget Sound Branch manager co-chair biweekly meetings and oversee implementation and tracking of the Action Plan.

Many of the actions in the Action Plan are on-going agency programs that contribute to the achievement of Action Plan goals and objectives. However, there are other high priority actions that

require cross-agency coordination, and some actions need state and tribal involvement for the best outcomes. Four workgroups were formed under the Action Plan to better collaborate with federal, state and tribal partners, and to focus on specific priority areas identified by state and regional federal leaders. Those workgroups are focused on riparian habitats, marine shoreline habitats, fish passage barriers, and science and monitoring.

An addendum to the Action Plan was recently developed at the advice of the regional federal leaders to capture those actions that are new, significantly changed, or those that should be removed. The seven new actions in the Addendum are described in *Actions Outside of the Action Plan* in this Accomplishments Report along with their recent achievements. None of the actions warrant significant changes, but two actions were recommended for removal. See Appendix B for the Action Plan Addendum.

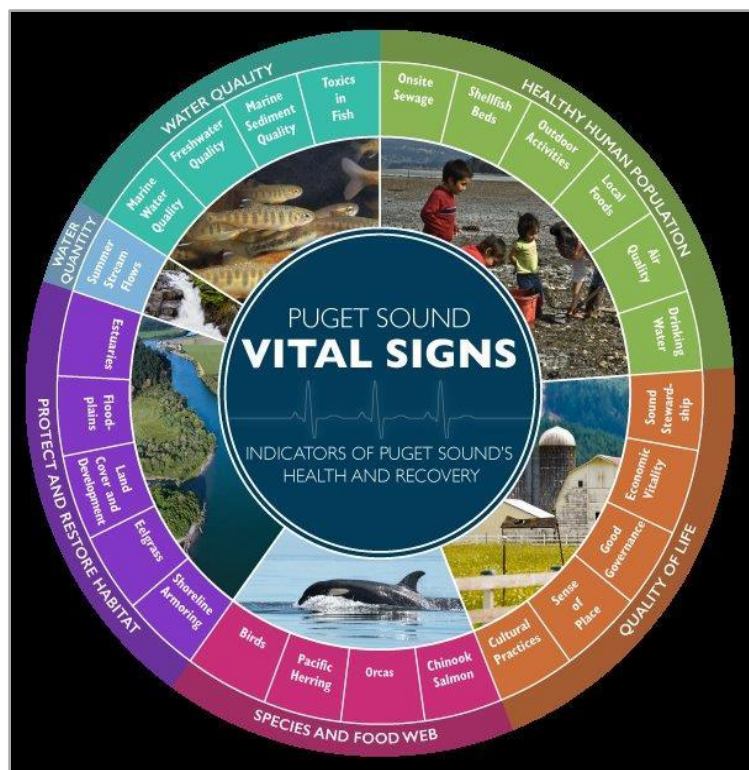
The following sections of this report closely match those of the Action Plan and describe key accomplishments achieved for each action item. Within each section, there is a description of goals for 2018, for either a specific action, subteam, or identified workgroup.

Crosscutting Actions

Crosscutting actions are those that address multiple priorities identified in the Action Plan. Two actions were identified as crosscutting, *Actions 2.1.1* and *2.1.2*.

The Action Agenda for Puget Sound, under the National Estuary Program (*Action 2.1.2*) charts the course to recovery of our nation's largest estuary—it identifies the goals and strategies for recovery and describes how the work of many partner organizations contributes to improving the health of Puget

Sound. EPA and the Puget Sound Partnership (the state's backbone agency of Puget Sound's National Estuary Program), have made significant progress since the beginning of 2017 in implementing a new and improved funding model, finalizing four additional implementation strategies for the Floodplains, Land Development and Cover, Chinook Salmon, and Shoreline Armoring vital signs, and restoring or permanently protecting over 2,578 acres of habitat and opening 946 acres of shellfish beds.



Each Vital Sign represents an important component of the Puget Sound ecosystem.

2018 Goals for the Puget Sound Action Agenda include:

- Finalizing the Comprehensive Plan, which outlines overarching strategies for successful protection and restoration as part of the Action Agenda. The 2018–2022 Action Agenda update will include minor revisions to the Comprehensive Plan published in 2016.
- Finalizing the Implementation Plan, which is the action component of the Action Agenda. It will represent the collective effort to advance Puget Sound recovery in 2018—2022. Based on the fundamental framework and broad strategies described in the Comprehensive Plan, the Implementation Plan defines the suite of Near Term Actions and ongoing programs that will advance recovery of Puget Sound over the next four years.
- Developing and finalizing three additional Implementation Strategies for the Benthic Index of Biotic Integrity, Toxics in Fish, and Marine Water Quality vital signs.
- Continuing to operationalize the Puget Sound Partnership’s existing seven Implementation Strategies.

Another crosscutting action is formation of the Regulatory Assistance Federal Team (RAFT) soon after the finalization of the Action Plan (*Action 2.1.1*). The RAFT is addressing two topics: 1) determining which habitat types/issues to focus regulatory improvements and 2) approaches for developing those improvements. The RAFT decided a pilot project would be useful to get an understanding of the existing regulatory complexities between state and federal agencies and agency roles and authorities in permitting restoration projects. State and regional federal leaders discussed shared interests and recommended that this group focus on barriers to permitting soft shore approaches that require permits from the Corps of Engineers. The RAFT ultimately became the Shorelines Workgroup, as described in the Nearshore and Estuaries section of this document (See Nearshore and Estuaries section).

In 2018, the RAFT will resume periodic meetings to help implement some of the federal regulatory streamlining activities identified by the Shorelines Workgroup, pilot shoreline restoration projects, and broaden the work plan to riparian areas, floodplains and culvert replacements.

Streamlining restoration project permitting will reduce costs for practitioners, landowners, and agency regulatory staff, which will result in greater numbers of restoration projects. More restoration projects means more jobs and more restored habitat in the Puget Sound basin.

Fish Passage Barriers

Mud Mountain Dam Fish Passage Project (*Action 2.2.1.4*) involves building the largest trap and haul fish passage facility in the nation based on a design completed in cooperation with NOAA, US Fish and Wildlife Service (USFWS), state agencies, and the Muckleshoot and Puyallup Indian Tribes. US Army Corps of Engineers (USACE) awarded a construction contract for \$112 million to complete the facility by December of 2020 in accordance with the Biological Opinions from NOAA and USFWS. The fish passage facility is designed to move up to 60,000 fish per day, including ESA-listed Puget Sound Steelhead, Puget



Sound Chinook, and coastal-Puget Sound Bull Trout. Mud Mountain Dam provides flood protection for more than 400,000 homes and businesses in and around Tacoma, WA.

A 3D rendering of the fish passage facility design at Mud Mountain Dam.

Formation of the Fish Passage Workgroup, which was recommended by state and regional federal leaders, has created critical networking opportunities across federal and state programs responsible for planning and implementing fish passage restoration. Working together has allowed for identification and discussion of other issues, such as the potential for adjusting agency fish passage priorities and funding to higher, more effective sites; addressing project permitting mechanisms or strategies; and providing assistance to one another to help address unique agency issues involved in implementing fish passage programs. The group has also identified a need for potentially using a common fish barrier assessment database in Puget Sound (i.e., federal agencies feed fish passage data into a Washington Department of Fish and Wildlife (WDFW) database that the state, tribes and other local governments use) and how best to align federal grant funding programs (i.e., Natural Resources Conservation Service's (NRCS) Environmental Quality Incentives Program, USFWS Fish Passage program, etc.) with key elements of the state's Fish Passage Removal Board.

The workgroup continued to meet in 2018 and identified the following goals:

- Enhance consistency of fish barrier assessment data collection, storage and use in Puget Sound by identifying a process by which federal agency fish barrier assessment is linked to the WDFW Barrier Database.
- Identify a process to address fish passage barrier data gaps.
- Prioritize fish barriers for corrective actions on federal lands and where federal agencies implement actions on non-federal lands.
- Organize recommended priorities by watershed.
- Identify ways to integrate information sets to help with the larger scope of Puget Sound recovery and outreach to the Puget Sound Partnership, Salmon Recovery Council, etc. to help bring resources and organization to this effort.
- Work with the Puget Sound Partnership to assist in coordinating the diverse array of Puget Sound programs such as existing fish passage barrier databases and knowledge bases including recovery plans, tribal priorities, etc.

Floodplains, In-stream and Riparian Habitat

The Floodplains Implementation Strategy emphasizes a multi-benefit approach (*Action 2.2.2.1*) and was completed due to collaboration between federal, state, tribal, local and non-governmental partners. The baseline conditions assessment for this strategy is being refined, so progress toward the vital sign can be measured and assessed in a consistent manner across federal, state and local flood management programs.



Fennel Creek restoration site, Pierce County.

The Coordinated Investment Initiative (*Action 2.2.2.16*) has progressed through collaboration with federal and state programs that focus on funding salmon and water projects. The groups have published a draft coordinated funding list called the “Fund Finder”. This tool provides easy access to information on funding opportunities for the Puget Sound ecosystem coordination community, which will help expedite well planned restoration projects to benefit landowners, practitioners and the Puget Sound ecosystem. 2018 goals include refining the draft web product and soliciting participation from additional funding sources.

Members of the Riparian subteam (*Actions 2.2.2.2, 2.2.2.3, 2.2.2.8*) joined forces with the Nearshore and Estuaries subteam (*Action 2.2.3.8*) to co-host a workshop with The Nature Conservancy on removing inefficiencies in the land acquisition process. Conflicting requirements and timelines often result in lost opportunities for riparian and

shoreline restoration with landowners who were willing to sell. The more than 40 practitioners and funding agency representatives identified solutions to previously known obstacles. Some example solutions include revising the appraisal process, incentivizing landowner stewardship, and setting

geographic priorities for future acquisition. 2018 goals include completing workshop outputs and getting input from participants to refine key implementation actions.

In 2018, the Riparian subteam is focused on accelerating actions to improve riparian habitat by reviewing the current “tool box”, with the goals to:

- Identify specific policy, science or program needs that, if addressed, would catalyze additional riparian protection or restoration efforts.
- Identify specific local watersheds where coordinated investment in riparian protection/restoration would most benefit specific resource recovery objectives (Chinook, shellfish, etc.).
- Convene a workshop to vet identified watershed and program priorities and to offer coordinated implementation support in areas where local efforts are ready to receive and help guide that support.

Nearshore and Estuaries

The Shorelines Workgroup is identifying and working to resolve the regulatory permitting inefficiencies for habitat restoration and beach stabilization projects that include soft shore approaches along the marine shoreline. The group was formed under the Nearshore and Estuaries section of the Action Plan, but fits within *Actions 2.1.1, 2.2.3.8, 2.2.3.9, and 2.2.3.11*. The group compiled a set of preliminary recommendations to streamline the federal permitting process to encourage landowners to opt for soft shore approaches over hard armoring. To date, recommendations include developing an activity-based programmatic permitting and ESA process, forming a multi-agency review team, and training regulatory staff and contractors in soft shore approaches. Implementation of these recommendations would speed up the federal permitting process and provide more certainty and reduced costs to landowners. It would also reduce workload on federal and state regulatory staff.



Before and after beach restoration using a soft shore approach. Photo: Puget Sound Institute

The 2018 goals of this group are to finalize recommendations and develop an implementation plan for how best to improve the federal permitting process for appropriate soft shore

projects. NOAA and USACE are in the early stages of developing an activity-based programmatic permit to incentivize the use of soft shore techniques and expedite permitting of these approaches.

The Nearshore and Estuaries subteam, in conjunction with the riparian subteam and The Nature Conservancy, co-hosted an acquisition workshop to explore solutions to inefficient land acquisition processes which would better support willing land owners and those who work with them on habitat restoration and protection (see the Floodplains, In-stream and Riparian Habitat section for more detail and 2018 goals).

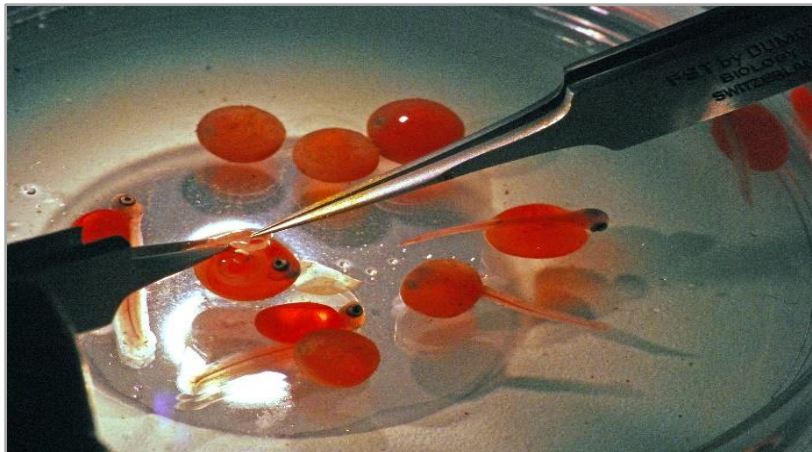
Stormwater

Stormwater is one of the largest contributors to the degradation of Puget Sound water quality. As such, significant milestones have been achieved under the Action Plan. For example, a multi-entity team of scientists has conducted important research throughout 2017 under *Action 2.3.1* to further understand the toxic effects of stormwater on salmonid populations and the effectiveness of green infrastructure. The research is revealing that Coho salmon are particularly vulnerable to toxic stormwater from roadways and are suffering high rates of acute pre-spawning mortality in urban watersheds in Puget Sound. Modeling has shown a positive correlation between motor vehicle traffic density and proximity to spawning habitats. Through their data collection efforts, scientists have provided evidence that bioretention methods that pre-treat stormwater runoff is being shown to adequately remove toxic pollutants to allow Coho salmon survival (see Appendix C for references and more details).



A female coho salmon that suffered pre-spawn mortality is examined after being pulled from a stream.

Photo: NOAA



Coho salmon eggs being removed from their protective casing as part of the study looking at the deadly impacts of storm water. Photo: NOAA/Fish and Wildlife

The group's goals for 2018 include:

- Implementing biofiltration systems with two or three local jurisdictions and municipalities.
- Identifying and promoting clean water strategies to guide stormwater management and species conservation activities in urbanizing areas of Puget Sound.
- Continuing a long-term collaboration between EPA, NOAA Fisheries, USFWS, Washington State University's Stormwater Center, and the Suquamish Tribe. The specific aims of this proposed effort are to: 1) identify the toxic contaminants in stormwater, 2) investigate affordable, scalable, and effective green infrastructure technologies, 3) develop a spatially-explicit population model for the Snohomish River basin to identify where green infrastructure is most needed for Coho conservation, 4) examine sublethal effects of stormwater in multiple salmonid species, and 5) examine the effects of stormwater on forage fish during early life stages.

Building on the success of Joint Base Lewis McChord's municipal stormwater permit and approach, EPA has been working collaboratively with the Navy throughout 2017 to develop a municipal stormwater general permit for the Navy facilities in Puget Sound (*Action 2.3.2*). EPA has offered assistance along the way and will continue to support the Navy as it implements the program.

Goals for 2018 include a draft permit for public review in September 2018, as well as a draft Biological Evaluation submitted to the National Marine Fisheries Service (NMFS) and USFWS.

Federal Lands and Facilities

Under *Action 2.4.1*, the Olympic National Forest made substantial progress decommissioning and stabilizing 5 miles of forest roads in the Calawah watershed and conducted NEPA analysis for future road treatments in the Dungeness watershed. The Olympic National Forest continues to work towards holistic watershed restoration in subwatersheds in the headwaters draining into the Puget Sound.



*Before road decommissioning.
Photo: USFS*



*After road
decommissioning.
Photo: USFS*

Goals for the Olympic National Forest in 2018 include:

- Implement forest restoration and stewardship projects in the Skokomish Watershed. As a part of these restoration efforts, road drainage will be improved and several culverts have been identified for upsizing and replacement.
- Complete the analysis of the larger Dungeness watershed and decide on opportunities to decommission or stabilize roads with a high risk of sediment delivery to the Puget Sound. In 2019, the Forest was tentatively approved for legacy roads funding to decommission or close around 5 miles of road in the Dungeness watershed and stabilize an additional 10 miles of road in 2020. All essential project work in the Middle Dungeness is expected to be completed by 2021.

The Mt. Baker-Snoqualmie National Forest decommissioned 5.2 miles, hydrologically closed 2.5 miles and stabilized (storm proofed) 2 miles of road in the Tenas Creek and Big Creek sub-watersheds (Suiattle River). This work helps accomplish the Forest Service's Watershed Condition Framework and will improve water quality and aquatic habitat conditions for federally listed Chinook salmon, steelhead, and bull trout.

In 2018, The Mount Baker Snoqualmie National Forest will be focusing more on the watershed scale approach to evaluating road-derived impairments on water quality, federally listed species, etc. They will also perform field assessment and design work for road decommissioning and closure in both the North Fork Nooksack River and Greenwater River watersheds, which should be implemented in 2019.

Vessel Traffic

The Ports and Waterways Safety Assessment was completed in October 2017 (*Action 2.5.5*). There were over 80 participants, including tribal governments and congressional delegation staff. The primary mitigation measure identified was to solidify the Salish Sea Transboundary Marine Safety Forum organized through the Puget Sound Harbor Safety Committee (USA) and Pacific Coast Marine Review Panel (CAN) by continuing dialogue to ensure waterway safety, protection of tribal treaty rights, efficient traffic management, environmental protection, and preservation of natural resources. The forum is intended to, at a minimum, foster cooperative exchanges between interested parties necessary to ensure the safety of navigation in waters near the common boundary of Canada and the United States.

The U.S. Coast Guard is cooperating with Transport Canada and the Canadian Coast Guard through the Cooperative Vessel Traffic System's Joint Coordination Group (*Action 2.5.4*) in support of its voluntary lateral displacement of vessel traffic within a portion of the lanes to study the potential impact of noise on Southern Resident Killer Whale (SRKW) population in the Strait of Juan de Fuca. Specifically, the program will study vessel noise impacts in key SRKW feeding areas along the southern shore of Vancouver Island. The trial period will run from August 20, 2018 to October 31, 2018, and is intended to include both deep sea vessels using the outbound lane of the Traffic Separation Scheme (TSS), as well as inshore traffic in Canadian waters north of the TSS.



Vessel approaching the Port of Seattle

The U.S. Coast Guard has been working on the Northwest Area Contingency Plan Biological Assessment on federal actions in support of pollution response in U.S. Coast Guard D13 AOR (*Action 2.5.6*). The Coast Guard and EPA, through a subcommittee of the National Response Team, are working with NOAA and Department of Interior at the headquarters level and in consultation with field offices to find ways to reduce cost and improve collaboration in the field.

On May 14th - 16th, 2018 the US Coast Guard and Canadian Coast Guard hosted four Tribes and six First Nation communities in Port Angeles, WA for a Canada and US Pacific Joint Response Team oil spill and

Incident Command System workshop (*Action 2.5.7*). The more than 80 participants included federal, state, and local members of the Northwest Area Committee and their counterparts from Canada educated and trained Tribes and First Nations on the Incident Command System with a particular focus on how they can contribute to an Environmental Unit and ultimately an oil spill response that could impact tribal and first nations land, waters, and rights. Background information on the Canada and US Joint Response Team, Regional Response Team, Northwest Area Committee and respective contingency plans (US and Canada) in the region was also provided, so they understand how each country responds to oil spills and how we jointly respond in cases of a transboundary incident.

Goals for 2018 include:

- Working with the local maritime community and tribes to provide outreach on preliminary findings or recommendations of the Ports and Waterways Safety Assessment in anticipation of the published report.
- Collaborate with Cooperative Vessel Traffic System's Joint Coordination Group in assessing results of its voluntary lateral displacement of vessel traffic within a portion of the lanes to study the potential impact of noise on Southern Resident Killer Whale (SRKW) population in the Strait of Juan de Fuca.
- U.S. Coast Guard and EPA are completing the Biological Assessment for the Northwest Area Contingency Plan with the goal of submitting it to NMFS and USFWS (trustee agencies) for Endangered Species Act Section 7 Consultation. At the National Response Team level, the U.S. Coast Guard continues to work with members of National Response Team in developing tools for ESA section 7 pre-spill consultations to advance Biological Evaluation consistency and thoroughness.

Shellfish

Puget Sound and the larger transboundary Salish Sea is one of the largest producers of shellfish in North America. Areas that are closed to shellfish harvesting can impact the livelihood of growers, workers, supermarkets, restaurants, hotels, and sales of recreational equipment, among other economic losses. Shellfish closures also impact tribal shellfish harvesting rights, which have been part of their traditions and economies for thousands of years.

EPA's Puget Sound program provides approximately \$5 million for shellfish protection and restoration projects each year, with the goal of restoring 10,800 acres by 2020 to upgrade status ensuring harvest of shellfish is safe for human consumption. The Shellfish Strategic Initiative Advisory Team, which is led by the Washington State Department of Health, has recommended that EPA funding focus on pollution identification and correction, sampling and monitoring, regulatory enforcement, education and behavior change across the region to protect and restore shellfish beds (*Action 2.6.1*).

EPA Puget Sound funding established or supported pollution identification and correction programs through local health districts in all 12 Puget Sound counties. Pollution identification and correction programs use innovative methods to pinpoint fecal pollution- from advanced GIS water quality mapping, to a sewage sniffing dog who can detect leaky septic systems, to a fun and quirky "Poop Smart" social marketing campaign. The EPA Puget Sound program has also supported onsite sewage system programs in Puget Sound counties.



Crush, the sewage sniffing dog working his shift

Approximately 5,000 acres of Puget Sound shellfish beds have been upgraded since 2007.

Recent successes include:

- 760 acres of commercial shellfish beds upgraded in Liberty Bay. Kitsap County teamed up with local stakeholders to apply progressive pollution identification and correction strategies.
- 129 acres of Birch Bay in Whatcom County upgraded to allow year-round shellfish harvest by both recreational and commercial fishers.



Shellfish bags at low tide in Eld Inlet, South Puget Sound

In order to ensure a streamlined, transparent, and predictable regulatory process for shellfish aquaculture activities (*Action 2.6.9*), USACE finalized the 2017 Nationwide Permit 48 and associated regional conditions, and NMFS completed a separate

programmatic ESA consultation with the USACE for shellfish activities in Washington State.

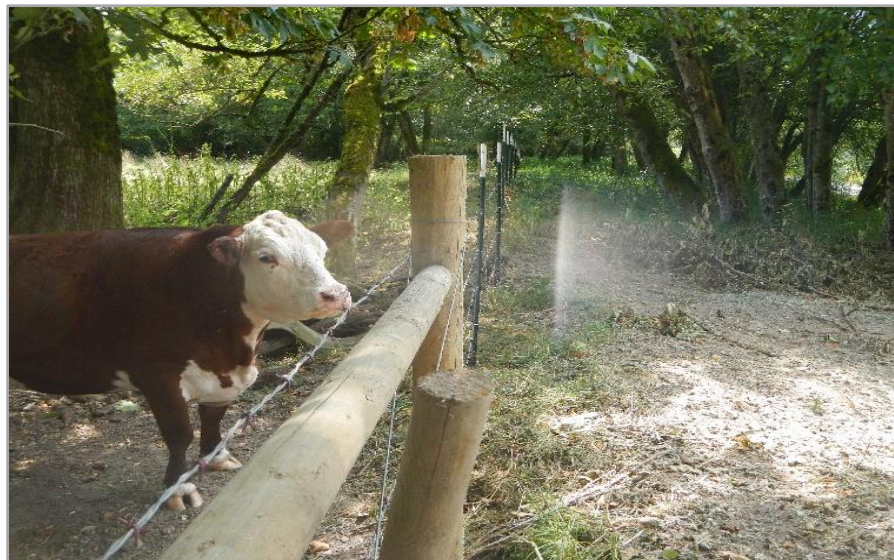
Approximately 750 NWP 48 shellfish aquaculture applications (94% of previous verifications) were re-verified under 2017 NWP 48 using a proffered 2017 NWP 48 process and using the Programmatic ESA consultations. This effort has created certainty and significantly reduced permitting time and costs for the commercial shellfish industry.

In 2017, the Puget Sound Restoration Fund and NOAA’s Ken Chew Center for Research and Restoration produced over 4.9M Olympia oyster seed, including 690 bags of seeded cultch with 3.7M spat-on-shell, and 1.2M single oysters (*Action 2.6.11*). Oysters were spread at priority restoration sites, including Drayton Harbor, Chuckanut Bay, Similk Bay, Sequim Bay, and Dyes Inlet. Four successful spawns of abalone were completed, settling over 3M larvae from 15 families. A total of 4,171 juvenile abalone produced previously were out planted at eight restoration sites. \$50K was provided by NOAA and \$448K (for the 2017-2019 Biennium) provided by the state to support operations at the Center, however additional funding is still required to complete five-year goals.

In 2018, production is underway for Olympia oyster seed to be outplanted at priority locations in the North Sound and Central Sound. A focus on spawning pinto abalone (*Haliotis kamtschatkana*) broodstock began in May, outplanting 12-month old juveniles (vs 18-month juveniles) to improve cost-effectiveness, as well as upgrading buffering, heating, and flow systems in the abalone nursery to provide more optimal conditions for post-set abalone.

Shellfish goals for 2018 include:

- Continuing to make progress on current efforts, particularly in native shellfish restoration and nonpoint source pollution control.
- Enhancing coordination with federal and local counterparts in Canada, including Environment and Climate Change Canada, Transport Canada, British Columbia Ministries, and Metro Vancouver.



*Livestock exclusion fencing keeps these cows away from a tributary in the Samish watershed.
Photo: Skagit County staff*

The Puget Sound scientific community recognizes the critical need for increased coordination and leveraging of existing programs to meet science and monitoring needs, in

addition to securing sufficient and stable funding for science. The federal Science and Monitoring workgroup has been striving to improve coordination between federal, state, tribal, local agencies, academia, and nongovernmental organizations regarding science and monitoring activities in support of Puget Sound ecosystem recovery and taking a hard look at why Puget Sound vital signs, as identified in the Puget Sound Action Agenda, are not being met.

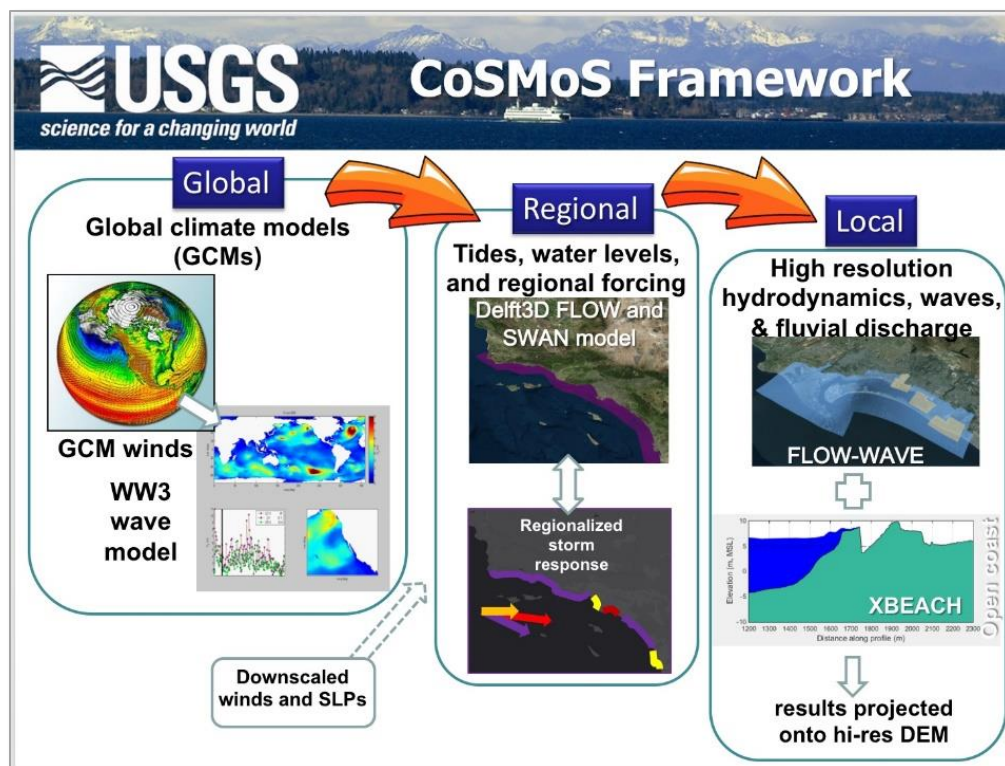
In 2017, the workgroup focused on developing the “science enterprise” concept to support Puget Sound ecosystem recovery science needs and has reached out and enlisted state and tribal leaders of Puget

Sound science programs. So far, the group has agreed to rethink the science and monitoring programs developed over the last decade, and approach the work via systems thinking to:

- Understand the current system, what it accomplishes, and develop a theory of success.
- Describe functions needed to assure credible, relevant, legitimate science is available to support ecosystem recovery.
- Develop structures and processes to support those functions.

Key science and monitoring studies conducted in 2017 include:

- Implement the Coastal Storm Modeling System (CoSMoS) at the scale of Puget Sound to model the combined impacts of sea level rise, increased winter river flooding, and storm surge on large storm-related coastal flood events (USGS).



The CoSMoS model

- Continue annual zooplankton monitoring program through a distributed network approach with multiple collaborators.
- EPA’s Office of Research and Development “Velma” project to model effectiveness of riparian buffers and other watershed management practices.
- WSU Puyallup Stormwater Center and USFWS research partnership (See Stormwater section).

Goals for 2018 include:

- Enlist a larger group of regional scientists, in collaboration with the Puget Sound Partnership Science Panel, to help formalize the systems thinking process for developing a proposed design for a Puget Sound Recovery Science Enterprise.

- Prioritize short-term actions to improve coordination between science providers, leverage science and monitoring activities, and address recognized gaps in science and monitoring, consistent with the proposed Science Enterprise.
- Participate in the review and plan for the ecosystem monitoring and assessment program (includes state, tribal, NGO, academic and local partners), scheduled to be finalized by fall 2018.

Accomplishments Outside of the Action Plan

Development of the Action Plan was well coordinated and planned by the RIT in late 2016/early 2017. Many actions were considered for inclusion into the Action Plan, but it was quickly realized that the RIT could not possibly implement all the proposed actions, and not all were high priority. Therefore, there are many federal projects and programs occurring throughout Puget Sound that are not in the Action Plan. We highlighted some examples of significant accomplishments below.



Orting setback levee project on the Puyallup River. Photo: Floodplains by Design

Floodplains by Design

The Floodplains by Design (FbD) partnership is working to reduce flood risks while restoring habitat in Washington’s rivers, maintaining agricultural production, water quality and open space/recreation. Thriving communities can be supported by transforming how floodplains are managed on a landscape scale. The collaborative framework of the program provides a venue for discussions among stakeholders, regulators, and floodplain managers including federal and state agencies, tribes, local governments, and non-government entities. FbD was kick-started by EPA funding in both 2012 and 2014 and with technical support from USGS and FEMA, the program exceeded expectations from the start. The Washington State legislature quickly recognized the significance of FbD and has provided over \$115

million of capital funding since 2013 to implement the program. \$35,389,000 was provided for the program in the 2018 capital budget, and FEMA continues to provide technical assistance on project permitting.

Navy land preservation

Under the Department of Defense Readiness and Environmental Protection Integration (REPI) program, the U.S. Navy Region Northwest has partnered with the Trust for Public Land, Jefferson Land Trust, the Washington Department of Natural Resources in Hood Canal and Jefferson County, and the Whidbey Camano Land Trust in Island County to conserve lands and protect waterways. In the Hood Canal partnership, the Navy has received \$24.1M since 2011, and has preserved over 12,000 acres to date, leveraging additional funds provided by partners and donors. Notable accomplishments include significant protections of the Dosewallips and Duckabush estuaries and watersheds. Many of these lands will remain as working lands in forestry and agriculture, others are being preserved as natural areas. The Navy and Whidbey Camano Land Trust have been partnering since 2007, and in 2017 alone, completed 10 land transactions that protected 544 acres (using \$6M in Navy funds and \$1.7M from the land trust). Notably, transactions including acreage at Dugualla Bay, Crockett Lake, and Swan Town all contributed to protection of wetlands, island aquifers and natural drainage courses. The Navy's partnership supports working forests and helps further and develop local agribusiness, while protecting the watershed and the Navy mission. In the case of Dugualla Bay partnership, coordination on restoration projects has ensured that habitat restoration does not create Bird Aircraft Strike Hazards for Navy aircraft.

Timely approval of Hatchery and Genetic Management Plans (HGMPs)

NOAA hired additional staff and contractors to support the HGMP review process. Hatchery co-managers are developing responses to NMFS requests for data to support the subject consultations. NMFS anticipates co-managers submitting many outstanding HGMPs.

The Tribal Nations Research Forum and Round Table

The Tribal Nations Research Forum and Round Table was hosted by the Northwest Indian Fisheries Commission. The forum had two general topics: causes and mechanisms of stormwater's adverse impacts to tribally important species and communities, and solutions that prevent or reduce stormwater's adverse impacts.

The tribes have been keenly interested in research exploring stormwater's contribution to lethal and sublethal impacts to Coho, Chinook, Pacific herring, and other finfish and shellfish species. Discussions have included impacts to other culturally important species or communities, including traditionally harvested plants, invertebrates, etc.; chemical and other stressors that impact both fish and marine mammal and human well-being; and synergistic impacts of stormwater's alterations to chemical, thermal, and flow conditions on salmonids at each of their life stages. The tribes are hopeful in light of research suggesting the promise of solutions such as biofiltration, which appear to reduce pre-spawn mortality in Coho salmon. These types of solutions might also address adverse impacts to other tribally important species and resources (whether impacts stem from altered chemical, thermal, and flow regimes). It was discussed how this research might be framed to ensure that it is policy-relevant, and informing discussions about the differences in impacts to salmonids of stormwater treated with "basic" vs "enhanced" water quality treatment requirements, as defined in Ecology's 2014 Stormwater Management Manual for Western Washington in Chapter V-3 of Volume 5 (Runoff Treatment BMPs)

given that many proposed development projects at present are only required to meet “basic” treatment requirements. Finally, opportunities were explored where tribes could partner with researchers to identify and develop pilot projects, and to monitor and evaluate effectiveness of potential solutions.

New Wastewater Treatment Plant

Joint Base Lewis-McChord (JBLM) Environmental Division completed a new wastewater treatment plant with biological nutrient removal (nitrogen) capability to produce Class A Reclaimed Water. There was noticeable reduction in nitrate loading to the Sound in 2017. The plant was turned over to JBLM in November 2017, and the operators are still learning how to operate the plant to meet design performance metrics for nitrogen removal. There are many challenges associated with the complexities of biological parameters required to remove nitrogen from the waste stream. The facility managers are developing a plan for documenting procedures, management practices for dischargers, and required treatments that must be in place.

Municipal Separate Storm Sewer System (MS4) Stormwater Program

JBLM Environmental Division collected over three years of sampling data on Clover Creek, Murray Creek, American Lake, and Puget Sound to help determine overall water quality of JBLM surface waters. JBLM completed development and implementation of its Stormwater Management Plan, which outlines procedures and plans to comply with requirements set forth by the MS4 Permit to control discharges to surface waterbodies and the Puget Sound. They conduct illicit discharge investigations, quarterly assessments of industrial facilities and construction sites and visual inspections of outfalls, and in-service stormwater training to ensure pollution prevention practices are upheld. They participate as a stakeholder in Clover Creek TMDL Alternative Working Group to review findings of the state’s Clover Creek dissolved oxygen, fecal coliform, and temperature TMDL study and assemble a series of next steps to address contamination. An EPA inspection of the JBLM Stormwater Program in November 2017 resulted in no findings for the installation.

Goals for the near future include:

- Conduct a trend analysis on sampling data to determine potential sources of pollutants/contaminants entering the stormwater system, concentrate on areas of concern, and pursue corrective actions to eliminate/reduce pollutant sources.
- Develop an installation-wide stormwater education program tailored to outline actions individuals can take to protect water resources.
- Implement action items identified by the Clover Creek TMDL Alternative Working Group to mitigate pollutants contributing to Clover Creek poor water quality.

In-stream and riparian habitat enhancement

The focus of JBLM’s stream habitat management program is to improve riparian habitat, enhancement of spawning habitat, improve fish passage and control invasive non-native species (primarily reed canary grass).



*Before reed
canarygrass
removal*



*After reed
canarygrass
removal*

Past accomplishments include the following:

- Conversion of all culverts on Muck Creek to three-sided box culverts
- Creation of a 900-foot spawning channel
- Riparian habitat enhancement of several miles along Muck Creek
- Herbicide treatment for reed canary grass in critical spawning habitat
- Mechanical removal of heavily infested sections of Muck Creek
- Adding spawning gravel to springs

Goals for the remainder of 2018 include:

- Continue treating reed canary grass infestations with an emphasis on keeping critical spawning habitat open and keeping stream channels open for fish migration.
- Continue working on riparian habitat enhancement along sections of Muck Creek.

The main challenge going forward is control of reed canary grass. As riparian plantings grow, they will help shade out some of the grass, but we will always need to treat some of the more open areas.

Summary

There are many more activities occurring in each of the subject areas in the Action Plan than described above. The on-going programs are largely dependent on appropriations, and work is dependent on resources allocated. Only 5 of the more than 75 actions are currently not being implemented, and this inactivity is due to a lack of appropriations.

Actions that would benefit from state participation are progressing, largely due to state and federal leadership and the dedication of the groups formed under them. The venue for partner collaboration provided by the PSFTF RIT has allowed state and federal staff to feel supported and empowered to give their time and energy to solving problems associated with Puget Sound degradation and subsequent recovery. Our shared efforts in aligning our federal actions is already resulting in more efficient and effective use of federal resources, streamlined regulatory approaches that benefit our state, tribal and local partners along with private landowners, significant leverage of federal resources and implementation of projects that are improving habitat and water quality for salmon and shellfish.

RIT members are generally active participants in Action Plan implementation. They recognize and appreciate how the PSFTF supports their participation, which has greatly increased their ability to engage and be active members. For example, the shellfish subteam lead reflected, "Utilizing the Federal Task Force as a vehicle for project prioritization and recognition of support for funding of these programs in the future are key ways to increase progress and support for shellfish restoration in Puget Sound." The US Coast Guard is appreciative of the awareness brought by the collaboration of federal and state environmental agencies and tribal nations of the work the Coast Guard does beyond Search and Rescue. The RIT functions well because of the coordinated support by their regional leaders and the hope is that this will continue along with critical funding resources.

RIT members also participate in bi-weekly conference calls, and they have provided valuable input to this document. For more detail on the status and investment in each of these subject areas, please see Appendix A.

Next Steps

The PSFTF has been successfully working under the Action Plan for over a year. The PSFTF has used a tracking table to document progress on each action (Appendix A) and will continue to do so at regular intervals.

As co-chairs of the RIT, EPA and NOAA help guide the work of the subteams and workgroups to ensure success. The RIT is prepared to continue to work under the existing Action Plan, and it recommends that

the Action Plan be submitted for approval with no changes except the inclusion of this accomplishments report and tracking table to document refinements and changes as we implement the actions. The RIT hopes the Action Plan will be formally adopted by the National PSFTF by the end of Summer 2018.

A meeting of the National PSFTF with the Regional Leaders and Co-Chairs would provide a valuable introduction to the benefits of the PSFTF and the Action Plan.

**Appendix A:
Puget Sound Federal Task
Force Action Plan Tracking
Table**

***Green** – Achieved and/or actively being worked on; **Yellow** – not current/delayed progress (mostly due to funding); **Red** – Not being worked on (mostly due to funding)

| Focus | Action Lead Agency | Action | Resource (Subject to appropriations) | POC | Status | Timing |
|-----------------------|--------------------|--|--|---|---|--|
| Cross Cutting Actions | 2.1.1 NOAA | Evaluate existing programmatic or streamlined regulatory tools/processes for activities related to Puget Sound habitat | No additional resources needed at this time. If new tools/processes are identified for development, additional resources may be necessary. Requested new funding and FTE support to develop a HEA calculator for shoreline armoring permit processes (NOAA). | Susan Meyer (EPA); Elizabeth Babcock (NOAA) | <p>A Workgroup has been formed to implement this action. The workgroup, known as the Shorelines Workgroup is specifically focused on incentivizing soft shore stabilization vs. hard armoring through the federal permitting process.</p> <p>Tools discussed for this effort include:</p> <ul style="list-style-type: none"> • The Nationwide permits • A new programmatic with the Services (NOAA and USFWS). • A multi-agency review team • Regulatory staff and contractor training • A new NTA was submitted on behalf of the workgroup to advance the recommendations made by this group for this action. | The workgroup started in December 2017, and will wrap up the planning phase and transition to a different role in mid-August 2018. |
| | 2.1.2 EPA | Implement the National Estuary Program for Puget Sound protection and recovery | \$30M/year Puget Sound Geographic Funds | Michael Rylko, EPA | Completion and implementation of the Puget Sound funding model – including large multi-year cooperative agreements (through RFP processes – competed) to support shellfish, stormwater, habitat and tribal project | Ongoing program subject to appropriations. |

*Green – Achieved and/or actively being worked on; Yellow – not current/delayed progress (mostly due to funding); Red – Not being worked on (mostly due to funding)

| Focus | Action Lead Agency | Action | Resource (Subject to appropriations) | POC | Status | Timing |
|-------|--------------------|--------|---|-----|--|--------|
| | | | | | implementation. These are priority actions for recovery and protection and support the National Estuary Program backbone role that the state provides including for science and monitoring – over \$26 million awarded under these agreements Shellfish Successes 760 acres of commercial shellfish beds in Liberty Bay were opened for harvest through collaborative efforts to improve water quality including pollution protection identification and correction programs to locate leaky septic systems and provide funding and tools to work with farmers to reduce manure runoff Habitat Successes. | |

***Green** – Achieved and/or actively being worked on; **Yellow** – not current/delayed progress (mostly due to funding); **Red** – Not being worked on (mostly due to funding)

| Focus | Action Lead Agency | Action | Resource (Subject to appropriations) | POC | Status | Timing |
|------------------------|--------------------|--|--|--|--|---|
| Habitat – Fish Passage | 2.2.1.1 USFS | Correct salmon and steelhead culvert fish passage barriers on National Forest System roads | \$1.2M/year is needed to correct the 26 identified salmon and steelhead culvert barriers within the 5-year period. | <p>Olympic NF Tammy Hoem neher thoemneher@fs.fed.us</p> <p>Mt. Baker-Snoqualmie NF Richard Vacirca, Fish Program Manager rvacirca@fs.fed.us 425-783-6040</p> | <p>Olympic National Forest (ONF) decommissioned and stabilized 5 miles of forest roads in the Calawah watershed and conducted NEPA analysis for future road treatments in the Dungeness watershed.</p> <p>The Mt. Baker-Snoqualmie National Forest decommissioned 5.2 miles, hydrologically closed 2.5 miles and stabilized (storm proofed) 2 miles of road in the Tenas Creek and Big Creek sub-watersheds (Suiattle River). Both forests continue to work towards holistic watershed restoration in subwatersheds in the headwaters draining into the Puget Sound.</p> | <p>Ongoing work should be mostly completed by 2021, although subject to funding by the Legacy Roads Interagency Agreement from EPA and other federal funds.</p> |

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| | | | | | | |
|--|------------------------|--|---|--|--|--|
| | <p>2.2.1.2 NPS</p> | <p>Correct salmon and steelhead culvert fish passage barriers on National Park Service roads</p> | <p>\$100,000/year is needed to correct the 9 identified salmon and steelhead culvert barriers at MORA within the 5-year period.</p> | | <p>Additional resources needed to inventory and correct barriers at Olympic NP and North Cascades NP. Olympic National Park has received funding through Federal Highways to correct fish passage on two tributaries to Lake Crescent. While these tributaries support resident trout populations only, these are unique populations which are important to the park's ecosystem.</p> <p>No fish passage correction projects were funded at Rainier or North Cascades National Parks for FY17. Planning will continue for White River culvert replacements, potential replacement of culvert at SR 410 MP 59.5 in cooperation with FHWA, and Goodell Creek/Hwy 20 crossing.</p> <p>Mount Rainier National Park has plans and funding to replace 7 culverts in the White River area over a 2-year period. An additional culvert in the White River area located on Hwy 410 will be replaced in connection with a Federal Highways project (2020). The final culvert located in the Carbon River watershed is</p> | <p>Ongoing work as funding is available during the 5-year period</p> |
|--|------------------------|--|---|--|--|--|

***Green** – Achieved and/or actively being worked on; **Yellow** – not current/delayed progress (mostly due to funding); **Red** – Not being worked on (mostly due to funding)

| Focus | Action Lead Agency | Action | Resource (Subject to appropriations) | POC | Status | Timing |
|-------|-------------------------|--|--|--|---|---|
| | | | | | scheduled to be replaced in 2023 but a funding source must be identified. | |
| | 2.2.1.3 U.S. Navy | Correct salmon and steelhead culvert fish passage barriers on U.S. Navy property | The U.S. Navy is currently investigating how to fund culvert projects; however, all corrective actions are subject to the constraints of available resources (personnel, funds and equipment). | Layna Goodman layna.goodman@navy.mil | Funding sources remain under investigation. | Work is being done as funding is available. |
| | 2.2.1.4 USACE | Design and construct improved fish passage at Mud Mountain Dam | Total cost over \$100M. Annual resource needs will vary. | Jessie Winkler jessica.g.winkler@usace.army.mil 206-764-3462 | Design complete and contract awarded. Construction started June 2018. | Project due for completion by December 2020 |
| | 2.2.1.5 USFWS | National Fish Passage Program | The Western Washington National Fish Passage Program typically receives \$100,000 annually, dependent upon Congressional allocations. | Miranda Plumb Miranda_plumb@fws.gov 360-753-9560 | Proposal to delete \$100,000 and add “for western Washington projects” at the end. Two fish passage projects (funded in FY2014) will be implemented in June 2018. The projects will restore access to 3.2 miles of fish habitat. | Annual grant program. |
| | 2.2.1.6 NOAA | Coastal Ecosystem Resiliency Funding Community Based | \$10M National Competition Resiliency, \$8M Community-based | Paul Cereghino (NOAA) paul.r.cereghino | An RFP was released in early 2018. Pre-proposals were due 3/7/18 for FY18 funding. The FY18 | Annual grant program |

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| Focus | Action Lead Agency | Action | Resource (Subject to appropriations) | POC | Status | Timing |
|-------|--------------------|--|---|---|---|---|
| | | Restoration (NOAA Restoration Center) | Restoration National Competition | o@noaa.gov , 206-948-6360 | appropriation language resulted in transfer of the program to NFWF, which issued a new RFP, and NOAA is only providing indirect technical assistance in support of the program. | |
| | 2.2.1.7 NOAA | Salmon recovery efforts through local, state and regional organizations and the Salmon Recovery Funding Board (SRFB) | Washington’s award for FY16 was \$18.8M | Rob Markle/ Elizabeth Babcock (NOAA) | Washington’s FY2017 Pacific Coastal Salmon Recovery Fund (PCSRF) award was \$18,800,000. This reflects a \$300,000 increase from FY2016. The FY2017 award amount was determined through the standard PCSRF competitive process. Washington’s award remains the largest of any PCSRF grantee. | Annual grant program |
| | 2.2.1.8 NRCS | Environmental Quality Incentive Program (EQIP) | A combined total of \$5.5M dedicated financial assistance for salmon recovery received for 3 years (2012, 2013, & 2016) with additional funding requested for FY17. | Larry Johnson Larry.A.Johnson@wa.usda.gov 509-323-2955 | See shellfish section | Annual grant program |
| | 2.2.1.9 FHWA | Salmon and steelhead barrier correction | Washington State receives over \$600M in Federal-aid Highway funding annually. | USDOT Sharon Love | The WSFLs is collaborating with MBS NF on the design of 6 Emergency Relief for Federally | Projects proceed as funding is available. |

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| Focus | Action Lead Agency | Action | Resource (Subject to appropriations) | POC | Status | Timing |
|-------|--------------------|--|--|---|--|---|
| | | projects on Federal-aid eligible roadways | Additional Emergency Relief funds are provided in response to natural disasters. | Sharon.love@dot.gov | Owned Roads (ERFO - https://flh.fhwa.dot.gov/programs/erfo/) road crossing sites that will be required to meet aquatic organism passage criteria. There are 14 ERFO sites that will improve floodplain and channel features. The WSFLs is collaborating with MBS NF on the design of 6 ERFO road crossing sites that will be required to meet aquatic organism passage criteria. There are 14 ERFO sites that will improve floodplain and channel features. | |
| | 2.2.1.10 FHWA | Fish passage barrier correction projects on roads that access Federal and Tribal lands and on roads owned by Federal and Tribal entities (WFLHD) | The Federal Lands Transportation Program (FLTP) is an available funding source for federally owned routes. The Federal Lands Access Program (FLAP) is an available funding source for a public road or transit system that is located on, is adjacent to, or provides access to Federal lands, for which title or maintenance responsibility is vested in a State, county, town, | USDOT Neal Christensen neal.christensen@dot.gov 360-619-7780 | The number of fish passage projects is not currently tracked for these programs. Each FLMA should identify appropriate projects under the FLTP program. The local agency or the FLMA associated with the FLAP project should identify appropriate projects. Each Tribe should identify appropriate projects under the TTP program. | Projects proceed as funding is available. |

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| Focus | Action Lead Agency | Action | Resource (Subject to appropriations) | POC | Status | Timing |
|-------|----------------------------|---|---|--|---|---|
| | | | township, tribal, municipal, or local government. The Tribal Transportation Program (TTP) is an available funding source for tribal owned and tribal designated publically owned roads. | | | |
| | 2.2.1.11 FEMA | Pre-disaster hazard mitigation and post-disaster recovery/mitigation fish passage related actions requested by applicants | Varies annually based on disaster declarations and on budgets allocated for those grants that are not dependent on disaster declarations. | Barry Gall Barry.Gall@fema.dhs.gov 425-487-4714 | Applicants propose actions, often following disaster declarations, but some via competitive grants. The number of fish passage projects is unknown. | Sporadic work done as funds become available. |
| | 2.2.1.12 NOAA, USFWS | Collaborate with State Fish Passage Removal Board (FPRB) | See actions 2.1.1.6 through 2.1.1.11 above | Dave Price (NOAA) | The Task Force is now (Dec 2017) represented on the FPRB by Dave Price (NOAA). Dave will help coordinate federal agency activities and progress with the FPRB. Coordinated activities include: <ul style="list-style-type: none"> • Data among entities • Project locations and partnership opportunities • Funding • Outreach and showcasing. USFWS Fisheries is not currently involved in this action. However, | Started in fall of 2017 and will continue indefinitely. |

*Green – Achieved and/or actively being worked on; Yellow – not current/delayed progress (mostly due to funding); Red – Not being worked on (mostly due to funding)

| Focus | Action Lead Agency | Action | Resource (Subject to appropriations) | POC | Status | Timing |
|--|--------------------|---|---|-----------------------|---|-----------------------------------|
| | | | | | USFWS Fisheries continues to maintain relationships and effectively coordinates with FPRB outside of Puget Sound. | |
| Habitat – Floodplains, Riparian, In-Stream | 2.2.2.1 EPA | Engage with Washington State to support and update the Floodplains Implementation Strategy | FTE to participate in meetings. The combined estimated cost for reducing flood risk and restoring salmon habitat over the next 10 to 20 years is over \$3 billion, with approximately \$2.2 billion associated with flood risk reduction projects and \$120 million/year associated with salmon recovery to define federal role in elements of the implementation strategy. | Michael Rylko (EPA) | The Floodplains Implementation Strategy was completed in 2017 with collaboration between state, federal, and other organizations in the Interdisciplinary team. The team is now refining the baseline conditions assessment so that we can better measure progress toward the vital sign. | This action is largely completed. |
| | 2.2.2.2 EPA | Convene working group to coordinate riparian science, and corridor protection and restoration | .1-.2 FTE/ Agency | Gina Bonifacino (EPA) | The scope of this workgroup has evolved and is now focused on convening a study panel of technical agency staff to establish the current status and objectives of specific lines of work supporting riparian protection and restoration (i.e. our current tool box). | Will start Fall 2018. |

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| Focus | Action Lead Agency | Action | Resource (Subject to appropriations) | POC | Status | Timing |
|-------|---------------------------|---|--|----------------------------------|---|--------------------------|
| | 2.2.2.3 EPA | Reach scale planning and coordinate and fund riparian easements and restoration in priority stream reaches | \$3.0M Puget Sound Geographic Funds pass through to Washington State | Michael Rylko (EPA) | The Phase 1 planning stage is largely complete, and the grantees are starting to work on developing the phase 2 designs for implementation. | 5-year grant to end 2020 |
| | 2.2.2.4 USGS, USFWS | Assist state and local partners in completing the development of a floodplain mapping and prioritization tool | \$300,000, FTE to participate in technical meetings | Molly Good and Mary Root (USFWS) | Proposal to add “(USGS)” after \$300,000. And “(USFWS)” at the end. USFWS is not currently involved in this action; however, additional staff capacity to support this action is now available at USFWS WFWO. | Project-related work |
| | 2.2.2.5 NOAA | Improve community resilience through climate change science, modeling, and response | TBD | Lisa Crozier 206-860-3395 | The NWFSC is using ecosystem models to identify how changes in the parts of the food web (including zooplankton) that are considered to be directly vulnerable to acidification will affect the entire food web in Puget Sound. USFWS LCC completed projects in the last few years with various partners: 1) WDFW (6/30/15) - integration of climate change into design and permitting of water crossing structures; 2) Nooksack | Project-related work |

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| Focus | Action Lead Agency | Action | Resource (Subject to appropriations) | POC | Status | Timing |
|-------|--------------------------|--|---|--|--|---------|
| | | | | | Tribe (12/31/15) - climate change vulnerability assessment, restoration planning, and adaptation plan; 3) Friends of the San Juans (9/20/15) - sea level rise adaptation tools; 4) The Nature Trust of British Columbia (3/31/16) - cross-boundary planning for resilience and restoration of endangered Oak Savannah and coastal Douglas-Fir ecosystems. USFWS LCC continues to support the Cascadia Partner Forum with funding for planning purposes and project expansion. The USFWS LCC Steering Committee most recently met in March 2017 to discuss their shared conservation targets for 2017-2021, which (tentatively) include: terrestrial connectivity, aquatic connectivity, and healthy and resilient coastal communities. | |
| | 2.2.2.6 FEMA, NOAA | Continue to implement the National Flood Insurance Program (NFIP) Jeopardy Biological Opinion (BiOp) for Puget Sound | 2.0 FTE FEMA | Janet Curran (NOAA). John Graves (FEMA). | This is ongoing implementation for Community Assistance Visits (CAVs), technical assistance and outreach. FEMA continues to work with local communities with implementing the NMFS Biological Opinion on the implementation of | Ongoing |

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| Focus | Action Lead Agency | Action | Resource (Subject to appropriations) | POC | Status | Timing |
|-------|---------------------------|--|--|---|---|---|
| | | | | | the National Flood Insurance Program in the Puget Sound. They do a minimum of 4 trainings per year to help local communities and other stakeholders understand various aspects of the NMFS BiOp. Most recently, they have concentrated on completing Habitat Assessments. | |
| | 2.2.2.7 FEMA | Improve community resilience by increasing incentives to move development away from high risk areas also important to recovery/FEMA subprogram to encourage beneficial functions | TBD | John Graves (FEMA) | An evaluation is underway as part of the overall programmatic updates to the CRS Coordinators Manual due for release in 2020. | Current – to be completed in 2020 |
| | 2.2.2.8 NOAA, USFWS | Support Salmon Recovery | Support for Pacific Coastal Salmon Recovery Fund, \$65M in FY 2016 (NOAA). Sustain funding for Puget Sound Coastal Program (USFWS), Wetlands Reserve Easements Program (NRCS). Federal programs, such as the Federal Lands | Elizabeth Babcock (NOAA)/ Rich Carlson (USFWS). | USFWS Puget Sound Coastal Program continues to support Puget Sound recovery, and USFWS funds approximately four-five projects per year related to salmon recovery in the Puget Sound. USFWS has evaluated project proposals for FY2017, and the Service is now awaiting | Ongoing grant program as funds are acquired |

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| Focus | Action Lead Agency | Action | Resource (Subject to appropriations) | POC | Status | Timing |
|-------|-------------------------|--|---|--------------------------|---|-----------------------------|
| | | | <p>Transportation Program (FLTP), Federal Lands Access Program (FLAP) and the Tribal Transportation Program (TTP) can fund in-stream habitat enhancement connected to environmental concerns of conducting actions like road repair or reconstruction. There are large-scale in-stream projects associated with the Puget Sound habitat strategic initiative where funding needs are equal to or greater than \$2M.</p> | | <p>funding. USFWS National Coastal Wetland Conservation Grant program also supports Salmon Recovery efforts through estuary restoration and protection projects. Additionally, USFWS is engaged in continuing science development and monitoring that informs salmon recovery and conservation in Puget Sound</p> <p>From USFS - The Mt Baker/Snoqualmie National Forest has acquired an FLTP grant in 2016 for the Baker Lake Road Relocation Project (\$1.5 million). Anticipate starting geo-tech and road realignment investigation (which ultimately support designs) in 2018. The project's purpose is to restore floodplain and riparian and aquatic habitat function.</p> | |
| | <p>2.2.2.9 NRCS</p> | <p>Continue to implement the Agricultural Conservation Easement Program (ACEP)</p> | <p>\$1.8M annually Statewide for ALE easements and almost \$1M available for WRE acquisition and wetland restoration practice implementation.</p> | <p>Dave Kreft (NRCS)</p> | <p>Over \$7.5 million in ACEP-ALE and ACEP-WRE funding is going to projects in the Puget Sound Basin, benefiting water quality, wildlife habitat for at-risk species and preserving our best agricultural</p> | <p>Annual grant program</p> |

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| Focus | Action Lead Agency | Action | Resource (Subject to appropriations) | POC | Status | Timing |
|-------|-------------------------|--|---|---|---|----------------------|
| | | | | | soils from being developed to non-ag uses. | |
| | 2.2.2.10 NRCS | Resource Conservation Partnership Program (RCPP) | FY 2017 Proposals have already been submitted and funded, FY 2018 should be announced sometime during the summer of 2018. | Bonda Habets (NRCS) | WA NRCS partners RCPP funds with Washington State Conservation Commission on the "2015 Precision Conservation for Salmon and Water Quality in the Puget Sound" and with Whatcom Conservation District "2016 Puget Sound WR1A1 Regional Salmon Recovery and Water Quality Improvement Project. It has money until 2020. Waiting for the FY18 workplan. | Annual grant program |
| | 2.2.2.11 NOAA | NOAA Community-based Restoration Program (CRP) | Ongoing appropriations | Paul Cereghino (NOAA) paul.r.cereghino@noaa.gov 206-948-6360 | We are completing contracting on FY18 funding within existing cooperative agreements. We anticipate issuing a new RFP for FY19 agreements, which will include a new cycle of 3-year agreements. | Grant program |
| | 2.2.2.12 NOAA, USFWS | Natural resource damage assessment (NRDA) | Ongoing appropriations. Funding for restoration projects and Trustee participation provided by PRPs through settlement or adjudication. | Jennifer Steger (NOAA Restoration Center) | USFWS EC is currently working with approximately thirteen natural resource trustee councils that consist of state, federal and tribal partners to 1) assess, quantify, and monitor injuries to natural resources from oil spills or releases | Ongoing program |

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| | | | | | of hazardous substances; 2) restore those resources to pre-incident conditions; and, 3) monitor the success of that restoration. Examples of NRDAR cases in various phases of the process include Commencement Bay, Elliott Bay, Port Gardner, Port Gamble, Port Angeles, Quendall Terminal, Bellingham Bay, Foss Pt. Wells, and others. USFWS is involved in constant monitoring regarding emergency restoration needs to aid in early recovery or to reduce loss of natural resources in the event of an oil spill or chemical release | |
| | 2.2.2.13 NOAA, USFWS, NRCS | Support integrated floodplain corridor project planning and implementation | FTE, funding | Janet Curran (NOAA) | No new resources identified. Support for the floodplain project continues. | Ongoing effort |
| | 2.2.2.14 NOAA | Collaborate with tribes, and state and local organizations to govern the Snohomish Coordinated Investment (CI) Initiative | Coordination and collaboration are already the mandate of named institutions | Paul Cereghino (NOAA) paul.r.cereghino@noaa.gov 206-948-6360 | An overview and updates can be found on this webpage . | Ongoing collaboration |

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| | 2.2.2.15 NOAA, FEMA | Coordinate with state and local partners on the Floodplain Management Forum | 0.50 FTE or equivalent over 2 years, to serve as liaison between federal agencies and local partners would strengthen follow through | John Graves (FEMA). Paul Cereghino and Janet Curran (NOAA) | The forum is slowly being formed using existing FTEs and resources to integrate flood, fish and farm entities with flood hazard management through the Snohomish Sustainable Lands Strategy. | Ongoing collaboration |
| | 2.2.2.16 NOAA | Test Improvements in funding coordination (Coordinated Investment Initiative) | 0.5 FTE Federal funding liaison to the State Water and Salmon Grant Coordination Group would accelerate implementation. | Paul Cereghino, Paul.r.cereghino@noaa.gov , 206-948-6360 (Also Susan Meyer (EPA), Rich Carlson (USFWS)) | Collaborating with State-led grant coordination on three topics. Published a draft coordinated funding list called fund-finder . Completed workshop report on potential for improving acquisition system . Began contract negotiation for development of large project budget standards for Washington state grant programs. Invited EPA and USFWS grant makers to participate. | Ongoing collaboration |
| | 2.2.2.17 USACE, NRCS | Skokomish River Ecosystem Restoration Project | 65% Federal share of \$20M in partnership with the Skokomish Tribe and Mason County, annual resource needs will vary. | Jessie Winkler (USACE). | Currently in design phase. Project is fully funded for the design phase. | Project -timing dependent on funding |
| | 2.2.2.18 USACE | Green/Duwamish River Ecosystem Project | 65% Federal share in partnership with King County and various local | Jessie Winkler (USACE). | Finalizing cost management report for submittal to HQUSACE for approval. | Project- timing dependent on funding |

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| | | | governments, annual resource needs will vary. | | | |
| | 2.2.2.19 USACE, EPA, NRCS, NOAA | Dungeness River Ecosystem Restoration Feasibility Study in partnership with the Jamestown S’Klallam Tribe | 50% Federal share of \$3M study in partnership with the Jamestown S’Klallam Tribe. | Jessie Winkler (USACE) | Study terminated by the Jamestown S’Klallam Tribe. | To be removed from Action Plan |
| | 2.2.2.20 BIA | Establish reliable relationships between stream flow levels and fish habitat | TBD | David Redhorse (BIA) | Ongoing monitoring occurring by several tribes throughout Puget Sound. | Ongoing project |
| Habitat – Nearshore and estuaries | 2.2.3.1 USACE | Puget Sound Nearshore Ecosystem Restoration Project (PSNERP) | 65% Federal share of \$452M project overall in partnership with the Washington Department of Fish and Wildlife, annual resource needs will vary. | Jessie Winkler (USACE) | Project was authorized in WIIN 2016. No federal funding for design phase identified in FY17. First site identified for design is Duckabush bridge replacement. Funds to complete a Design Agreement were provided in FY18 workplan. | Project- timing dependent on funding |
| | 2.2.3.2 USACE | Puget Sound Master Plan Implementation of projects from the Corps’ Puget Sound Restoration Tiered Implementation Strategy, as established | 50-65% Federal share for each \$5-\$15M project depending on the project phase, annual resource needs will vary | Jessie Winkler (USACE) | No federal funding identified in FY17 workplan or FY18 President’s Budget. First sites identified for streamlined feasibility phase are Spencer Island and Twanoh Beach under the Puget Sound and | Project- timing dependent on funding |

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| | | by the Puget Sound Nearshore Ecosystem Restoration Study | | | Adjacent Waters Authority (Sec 544 of WRDA 2000). Last completed project under that authority was Qwuloolt. | |
| | 2.2.3.3 USACE, NOAA, EPA, USFWS, USDA | Estuary Restoration Act Projects | Annual project-specific requirements will vary | Jessie Winkler (USACE), Rich Carlson (USFWS), Jay Davis? | Continued work (USACE with WA DNR) on the eelgrass project. No new USACE projects under this authority. USFWS is not currently involved in this action. No new NOAA funding. | Ongoing grant program by project |
| | 2.2.3.4 NOAA, USGS | Snohomish Estuary Restoration Evaluation | \$200K/year | Paul Cereghino, Paul.r.cereghino@noaa.gov , 206-948-6360 and someone from USGS TBD | Local groups are pulling together money to support and evaluate the effectiveness of the projects that have been done to date. Need to have agencies clarify their involvement in this area. Bunch of moving pieces. NOAA RC is providing technical assistance through State grant programs, restoration project contracts, NRDA work in the system, and through the Veterans Conservation Corps. A substantial monitoring report is in final review. | Ongoing collaboration |

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| | | | | | Corps has at least one project in this geographic area, but not specific to this action. | |
| | 2.2.3.5 USFWS | Puget Sound Coastal Program | ~\$250K /year. Usually fund 4-5 projects/year with most funding decisions made in January-February. | Rich Carlson (USFWS) | USFWS Puget Sound Coastal Program continues to support Puget Sound recovery. USFWS has received and evaluated 17 project proposals for FY2017, and the Service is now awaiting funding. Funding will be focused on approximately 5-6 projects situated in North Puget Sound. | Annual grant program |
| | 2.2.3.6 USFWS | National Coastal Wetland Conservation Grant Program | +\$20M nationally. Up to \$1M per project. Applications due in June, decision announced Dec.-Jan. | Rich Carlson (USFWS) | This year, the largest number of applications were received ever. 11 or 12 applications. This grant is administered by the regional office in Portland. USFWS Coastal Program staff are assisting partners with implementing three estuary restoration projects funded by National Coastal Wetland Conservation Grants in FY16. | Annual grant program |
| | 2.2.3.7 USFWS | National Fish Passage Program | \$15 - \$80K per project. Applications due November 15 annually | Denise Hawkings | USFWS Fisheries funded two projects in Puget Sound with FY2014 funds, and these projects | Annual grant program |

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| | | | | and/or Miranda Plumb (USFWS) | <p>will be implemented in 2018. The two projects will result in an additional 3.2 miles of upstream habitat.</p> <p>Allocated funds for program can be used in all western Washington, not just Puget Sound. Project must be based on fisheries recovery plans.</p> | |
| | 2.2.3.8 NOAA, EPA | Protection of marine nearshore habitat | 1-2 FTEs/year in the beginning of the coordination process | Susan Meyer and Peter Murchie (EPA), Elizabeth Babcock (NOAA) | <p>A multi-agency workgroup has been formed to work on making it easier to acquire properties at risk of development, ripe for restoration or those that are critical to shoreline processes. The workgroup is looking at solutions to the current barriers to land acquisition such as</p> <ul style="list-style-type: none"> • Grant timing • Multiple differing requirements • Fair Market Value constraints, etc. <p>The workgroup will continue to work on other areas of need as time allows. Also see 2.1.1 and 2.2.3.11 (Shorelines Workgroup)</p> | Land acquisition workshop and summary of solutions report completed June 2018. Advancing key solutions will occur through the next state legislative session (Spring/Summer 2019). |

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| | 2.2.3.9 EPA, NOAA | Coastal Improvement Team | 0.5 FTE/year/agency | Susan Meyer (EPA), Elizabeth Babcock (NOAA) | This action is part of a new effort to evaluate permitting soft shore stabilization projects as described in 2.2.3.11. An NTA was submitted for the 2018 Puget Sound Action Agenda. | NTA developed and submitted for the 2018-22 Action Agenda. New team to be formed in late 2018, projected to continue through 2020. |
| | 2.2.3.10 USACE, EPA, NOAA | 2017 Nationwide Permit Regional Conditions | No additional resources needed at this time | Jessie Winkler (USACE) | Final NWP's and Regional Conditions have been released and are in use. Action completed. | Completed |
| | 2.2.3.11 EPA, NOAA | Support state agencies regarding HPA enforcement, SMA implementation, streamlined permitting of restoration projects | Existing staff time + 0.25FTE/agency for the first two years | Susan Meyer (EPA), Elizabeth Babcock (NOAA) | A multi-agency Shoreline Workgroup (federal and state agencies, tribes have been invited) was formed and has discussed how to reduce the permitting burden for landowners willing to install soft shore approaches over hard armoring on their properties. Several options have been identified, including developing a Programmatic ESA process, forming a multi-agency permit review team, and trainings. The group will also work on implementing recommendations. An NTA was | Began in December 2017, recommendations due in late summer 2018 |

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| | | | | | submitted for funding 0.5 FTE for two state agencies. | |
| Stormwater | 2.3.1 EPA | Implement research advancing practical solutions for stormwater management | \$600K in federal funding annually over next five years | Dino Marshalonis (EPA) | Funding was awarded, and USFWS grantees for stormwater research just published the following research article: https://www.sciencedirect.com/science/article/pii/S026974911734527X It summarizes studies with adult coho and chum spawners and details their different sensitivity to urban runoff exposure. | Ongoing research with implementation of findings to start in 2019. |

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| | 2.3.2 EPA | Facilitate and support effective storm water management on Federal and Tribal lands/facilities under EPA’s Clean Water Act jurisdiction | 1 – 2 FTE/year, in the form of permitting and technical staff at EPA, and NOAA to complete permit development and technical analysis, including appropriate coordination, negotiation, and consultation with all regulated entities. ~\$250,000/year in grants or discretionary funding to assist regulated Tribal governments within the Urbanized Area with capacity development and implementation of their local storm water management program. | Misha Vakoc (EPA) | EPA and NOAA have been working throughout 2017 to develop an MS4 general permit for the U.S. Navy facilities in Puget Sound. The U.S. Navy has been very collaborative and patient as the process unfolded, and are well aware of their responsibilities under the permit. EPA has offered assistance along the way and will continue to support them as they implement the program. It is expected that the permit will be ready to submit to the U.S. Navy in September 2018. A draft Biological Evaluation is also expected to go to the Services in September 2018. | Completion is estimated for early 2019, dependent on additional FTE support. |

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| | 2.3.3 FHWA, FTA | Stormwater treatment as part of transportation projects | Washington State receives approximately \$600 million in Federal-aid highway funds per year. | Sharon Love (DOT) | The State and local jurisdictions have been active in choosing transportation projects, many of which improve stormwater treatment. Individual projects may be viewed at: http://wsdot.wa.gov/LocalPrograms/Projects/Reports/ProjectSearch.aspx | Ongoing |
| | 2.3.4 EPA | Refine and implement Stormwater Retrofit Prioritization Methodology | Combined 1 FTE from multiple team members over a five-year period | Michael Rylko (EPA) | Technical discussions have begun and working towards consensus on next steps. | Methodology refined and being utilized by end of FY19 |
| | 2.3.5 EPA, USGS, USFWS | Regional Stormwater Monitoring Program (RSMP)/ Stormwater Action Monitoring (SAM) | ~0.25 annual FTE total, minimum \$100K federal funding annually | Jay Davis (USWFS) jay_davis@fws.gov | In 2017, all SAM receiving water studies were in data analysis and writing phases. Final reports for bacteria and the first round of mussel monitoring were completed. The second round of mussels were deployed in December. The streams and nearshore sediment reports will be published in early 2018. Eight SAM effectiveness studies will continue monitoring and/or analysis into 2018, and one study was completed. Five new studies will | Ongoing |

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| | | | | | begin in 2018. The first SAM symposium was held in June. A new SAM website was launched with new communication products (project fact sheets, newsletters, and “About SAM” video), individual project pages, final reports, and more. ecology.wa.gov/SAM | |
| | 2.3.6 EPA | Invest and Support Source Control Programs | \$300K federal funding annually over next five years | Gina Bonifacino (EPA) | Ongoing | 2017-2022 |
| | 2.3.7 EPA | Coordinate to support state development of water quality guidance for nonpoint sources on agricultural lands | One FTE annually | Nick Peak (EPA) | Work is ongoing, and WA Dept of Ecology has convened a diverse set of stakeholders on the committee to address nonpoint source from agriculture and to develop Voluntary Clean water guidance for farmers. The Guidance development is being phased into categories and tillage/residue management will be first to be finalized. https://ecology.wa.gov/About-us/Our-role-in-the-community/Partnerships-committees/Voluntary-Clean- | Expect the first phase to be developed by the end of 2018, with all of the phases complete by summer 2020. |

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| | | | | | Water-Guidance-for-Agriculture-Adv | |
| Federal Lands and Facilities | 2.4.1 USFS | Decommission and stabilize National Forest System roads | \$336K awarded in FY17 to ONF; \$334K awarded in FY 17 to MBS | Olympic NF Tammy Hoem neher thoemneher@fs.fed.us Mt. Baker-Snoqualmie NF Richard Vacirca, Fish Program Manager rvacirca@fs.fed.us 425-783-6040 | Projects are underway to decommission & stabilize 5 miles of road in the Calawah watershed and complete NEPA analysis for future road treatments in the Dungeness watershed in the ONF. MBS received \$334K for road decommissioning & stabilization in FY17 through the Forest Service’s national Legacy Road and Trails program. The Forest is contracting implementation of 7.7 miles of road work in the Tenas and Big Creek sub-watersheds. | Ongoing |

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| | 2.4.2 USFS | Protect aquatic habitat on National Forest System lands | \$1.2 M/year. The Olympic and Mt. Baker-Snoqualmie National Forests are managed under their respective Forest Plans and the NWFP Aquatic Conservation Strategy. Appropriated agency funds provide support for aquatic specialists to provide input and monitor activities effecting aquatic habitats. The capacity of Forests to monitor watershed conditions, develop partnerships, and implement restoration projects will be proportional to the funding available. | Olympic NF Tammy Hoem neher thoemneher@fs.fed.us Mt. Baker-Snoqualmie NF Richard Vacirca, Fish Program Manager rvacirca@fs.fed.us 425-783-6040 | ONF received \$230K to support aquatic specialists in FY17. MBS received \$311K to support aquatic specialists in FY17. | Ongoing |
| | 2.5.1- (This action was put into Vessel Traffic section) | Utilize flexibility within the Emergency Relief for Federally owned Roads (ERFO) | Additional resources necessary to fund modifications to improve structure performance will be dependent on the number and magnitude of storm damage sites and | Olympic NF Tammy Hoem Neher – thoemneher@FS.FED.US Mt. Baker-Snoqualmie NF | The MBS is in the process of collaborating with WSFLs on the design of 3 ERFO sites (2 of which occurred in 2015) in the NF Nooksack River watershed and 55 others sites that occurred in 2016 across other watersheds. All road damage ERFO qualifying sites can | Ongoing – work is dependent on available funding |

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| | of Action Plan) FHWA, USFS | | annual congressional appropriations. | Richard Vacirca, Fish Program Manager rvacirca@fs.fed.us 425-783-6040 | be generally classified as road crossing failure or road shoulder failure. There are 6 road crossing sites that will require the design meet aquatic organism passage criteria. There are 14 sites that will require the designs to incorporate floodplain and channel improvement features. The current total ERFO program on the MBS is approximately \$4 million. | |
| Vessel Traffic and Pollution Prevention and Response | 2.5.2 USCG | Implementation of new inspection regulations | No additional resources needed at this time | CDR Jensen (USCG) | 46 CFR Subchapter M – Towing Vessels regulations went into effect 20 Jul 2018, establishing towing vessel safety regulation inspection, standards and safety management systems. Towing vessel are to be inspected and carry a USCG Certificate Of Inspection (COI). | Implementation began in 2017, now an ongoing program |
| | 2.5.3 USCG | Implementation of Commercial Fishing Vessel (CFV) voluntary compliance program | No additional resources needed at this time | CDR Jensen (USCG) | Development of matrix in progress: # of CFV inspection /Certificate | Ongoing program |
| | 2.5.4 USCG | Effectively manage vessel activities | No additional resources needed at this time | CDR Jensen (USCG) | VTS & AIS data: No issues to report. | Ongoing programs. The Ports and Waterways Safety |

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| | | | | | | Assessment at the Whatcom County EOC completed October 25-26, 2017 |
| | 2.5.5 USCG | Effectively manage vessel traffic and coordinate joint prevention and response activities | No additional resources needed at this time | CDR Jensen (USCG) | <ul style="list-style-type: none"> - The Ports and Waterways Safety Assessment at the Whatcom County EOC. Completed 25-26 October 2017 - There were over 80 participants in the 2017 Safety Assessment. There were approximately 60 direct participants and approximately 20 observers. Some of the observers were staff from congressional delegations and tribal governments. - Primary mitigation measure – way-ahead: participation in the newly created (2018) Pacific Coast Marine Review Panel (PACMAR)/ Puget Sound Harbor Safety Committee (PSHSC) Transboundary Forum (TBF) and continuing dialogue to ensure waterway safety, protection of Tribal treaty rights, efficient traffic management, environmental protection, and preservation of natural resources. This forum is | Ongoing collaboration |

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| | | | | | <p>intended to, at minimum, foster cooperative exchanges between interested parties necessary to ensure the safety of navigation in waters near the common boundary of Canada and the United States. This work is ongoing.</p> <p>- The U.S. Coast Guard is cooperating with Transport Canada and the Canadian Coast Guard through the Cooperative Vessel Traffic System's Joint Coordination Group in support of its voluntary lateral displacement of vessel traffic within a portion of the lanes to study the potential impact of noise on Southern Resident Killer Whale (SRKW) population in the Strait of Juan de Fuca. Specifically, the program will study vessel noise impacts in key SRKW feeding areas along the southern shore of Vancouver Island. The trial period will run from August 20, 2018 to October 31, 2018, and is intended to include both deep sea vessels using the outbound land of the Traffic Separation Scheme (TSS), as</p> | |

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| | | | | | well as inshore traffic in Canadian waters north of the TSS. | |
| | 2.5.6 USCG | Support multi-agency effort to develop vessel traffic risk assessment | No additional resources needed at this time | CDR Jensen (USCG) | Monitor progress, attend meetings, PAWSA: Recommend this be removed . PAWSA has concluded and the other issues are covered in other areas. | To be removed |
| | 2.5.7 USCG | Develop plans and interagency cooperation for pollution response | The USCG and EPA are cost sharing ESA Section 7 Consultation on the Northwest Area Contingency Plan at the cost of \$200K. | Bob McFarland (USCG) | - Submitted NWAC Plan Biological Assessment on Federal Actions in support of Pollution Response in USCG D13 AOR. (Jul 2018) - The USCG and EPA, through a subcommittee of the National Response Team, are working with NOAA and DOI at the headquarters level and in consultation with field offices to find ways to reduce cost and improve collaboration in the field. This work is ongoing. | Project currently ongoing |
| | 2.5.8 USCG | Coordinate international cooperation for preparedness and response activities | No additional resources needed at this time | Bob McFarland (USCG) | JRT mtg/exercises updates/battle rhythm. - Organized/participated in CANUSPAC TTX with USCG, CCG, WA, BC, Tribes & First Nations in Port Angeles, WA. Provided basic ICS training with an emphasis on Tribes and First Nations need/ | Sporadic project work |

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| | | | | | contribution in the Environmental Unit. Completed May 15, 2017. - Participated in Canadian Coast Guard mass rescue operations exercise (BC Ferry fire/ evacuation/ pollution) as ICS Liaison Officer (CANUS JRT International Coordinating Officer) in Sidney, BC Incident Command Post. Completed October 27, 2017. | |
| Shellfish | 2.6.1 EPA | Water quality protection and Pollution Identification and Correction (PIC) Programs | \$5M/year Puget Sound Geographic Program funds passed through support to state agencies | Catherine Gockel (EPA) | (PIC) programs continue in all 12 Puget Sound counties and have been successful in identifying sources of pollution. EPA grants from the National Estuary Program funded monitoring, a landowner stewardship program, and overall PIC programs, which addresses pollution from small farms, dairies and onsite septic systems. As a result, Liberty Bay and Birch Bay were reclassified as approved for shellfish harvesting in 2017. Microbial Source Tracking (MST) projects are currently being implemented in many areas throughout the Sound and have been effective in identifying | Ongoing program |

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| | | | | | sources of contamination. \$1.5M/year (more if available) | |
| | 2.6.2 EPA | Puget Sound 'No Discharge Zone' (NDZ) | \$500K/year through the Puget Sound National Estuary Program | Catherine Gockel (EPA) | Subject to future State action. Suggest deleting \$500k/year ~\$150,000 in NEP resources | Project work has been completed for federal agency. |
| | 2.6.3 NRCS | Environmental Quality Initiative Program (EQIP) | No additional resources required at this time | John Kendig (NRCS) | Program signup ends March 16, 2018 there is \$200,000 available for 2018 EQIP program funds. Outreach for signup is occurring with tribes and commercial growers. Update: The 2018 signup has resulted in 5 tribes applying for the Olympia Oyster restoration program. There were also 3 other tribes that showed interest in the program and are considering signing up in 2019. Additional funds are being allocated to the program bringing the 2018 commitment to \$300,000. | Ongoing program |
| | 2.6.4 USCG, NOAA | Oil spill preparedness and planning | No additional USCG resources needed at this time. NOAA/EPA: Subject to future appropriations. 0.25 FTE/year | Laura Hoberecht (NOAA) (alternate Julie Horowitz-state) And CDR Malzone and | Expected outcome: Implementation of Washington Shellfish Initiative Oil Spill Preparedness and Planning action items. - Work with WA Dept of Ecology (NWAC Co-Vice Chair) to assess any | Ongoing collaboration |

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| | | | | McFarland (USCG) | need to update GRPs and that they are updated with shellfish growing and harvest areas adequately included in oil spill planning and response. | |
| | 2.6.5 NOAA | Ocean acidification monitoring | \$275K/year in support validation and OA product enhancement of J-SCOPE forecast system for Washington and Oregon coastal waters; total needed is 16% Federal share of ~\$1.7M/year NOAA investment towards sustained monitoring, data quality assurance and synthesis, and advanced OA technology development specific to the California Current Large Marine Ecosystem. | Laura Hoberecht (alternate Shallin Busch) | Baseline project is ongoing. Specific work described in Action Plan has been granted funding, subject to modification due to annual federal funding levels. | Ongoing project |
| | 2.6.6 NOAA | Harmful Algal Bloom (HAB) detection and prediction | \$90K/year (Sound Toxins at \$40K/year; the Environmental Sample Processor at \$50K/year, for 5 years); total needed is 10% Federal share of ~\$5M project in partnership with | Laura Hoberecht (alternate Vera Trainer) | Baseline project is ongoing. Specific work described in Action Plan is subject to appropriation of funding. | Ongoing project |

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| Focus | Action Lead Agency | Action | Resource (Subject to appropriations) | POC | Status | Timing |
|-------|--------------------|--|---|--|--|--------------|
| | | | WA Department of Health, WA Sea Grant, tribes, shellfish growers, environmental learning centers, tribes, and private citizens. | | | |
| | 2.6.7 NOAA | Pathogenic vibrio detection and prediction | \$80K/year for three years, \$50K/year for two years for work in partnership with WA Department of Health, commercial harvesters, and tribes; NOAA Fisheries supports this effort at ~\$86K/year, subject to Congressional appropriations | Laura Hoberecht (alternate Linda Rhodes) | <p>Progress to date:</p> <ol style="list-style-type: none"> 1. Substrate impacts on harvest temperatures (WA Department of Health, Taylor Shellfish, National Ocean Service, Interstate Shellfish Safety Commission). Conducted 2nd year of data collection on environmental parameters & associated <i>Vibrio parahaemolyticus</i> levels in shellfish for predictive harvest model based on air temperatures, substrate type and climate data from National Weather Service. 2. Strain-specific growth curves for post-harvest storage calculator (NOAA Aquaculture Program, National Ocean Service, Food & Drug Administration). Conducted studies on growth rates of different genotypes of <i>V. parahaemolyticus</i> | Project work |

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| Focus | Action Lead Agency | Action | Resource (Subject to appropriations) | POC | Status | Timing |
|-------|-----------------------------------|--|--|---|---|---|
| | | | | | <p>in commercially important oysters for temperature-based harvest storage tool.</p> <p>3. Ecological Forecasting Roadmap transition plan (National Ocean Service). Initiated transition plan to move on-line V. <i>parahaemolyticus</i> predictive tools to operations.</p> | |
| | 2.6.8 NOAA | Conservation genetic risk assessment | \$100K/year; in partnership with WA Department of Fish and Wildlife and other collaborators. | Laura Hoberecht (alternate- Rob Duff, WA State Governor's office) | \$300K provided by NOAA via the Saltonstall-Kennedy Grant Program to support this effort, along with complementary funding from Sea Grant. A workshop was convened in September to collect data on current practices of growing native shellfish. | Workshop convened September 2018; project work to continue in 2019 and 2020 |
| | 2.6.9 USACE, NOAA, USFWS | Implement aquaculture regulatory framework | No additional resources required at this time | Matt Bennett (USACE) | In June 2017, the Seattle District regulatory branch implemented a strategy to help shellfish farm applicants and the Corps quickly assess verification under 2017 NWP48. Of the 789 NWP 48s eligible for proffering, 677 have been sent to permittees (103 remain to be sent). Of the 677 sent, permittees have returned 519 | New streamlined regulatory framework implemented June 2017. |

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| Focus | Action Lead Agency | Action | Resource (Subject to appropriations) | POC | Status | Timing |
|-------|--------------------|----------------------------|---|---|---|--|
| | | | | | <p>duplicate signature copies (147 sent proffers are unreturned). The Corps is actively contacting non-responsive applicants to inquire on status of their returned copies.</p> <p>The Corps will host an aquaculture stakeholder meeting on 25 January 2018. The purpose of the meeting is to provide the status of the NWP 48 verification process, seek feedback from operators on the proffered process, and get input about operators' experience complying with Conservation Measures in the Programmatic Biological Opinion.</p> | |
| | 2.6.10 NOAA | Habitat value of shellfish | \$100K/year for five years | Laura Hoberecht (alternate Beth Sanderson) | Baseline project is underway. In 2017, we completed a draft global meta-analysis examining bivalve-eelgrass interactions, deployed GoPro cameras 111 times in shellfish aquaculture habitats and nearby reference sites in Puget Sound, analyzed 16+ hours of underwater video, developed partnerships with shellfish growers and engaged with scientists, managers and industry about the | Baseline project initiated in 2017 and draft analysis of bivalve-eelgrass completed in FY18. Additional planned project work dependent on future funding |

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

| Focus | Action Lead Agency | Action | Resource (Subject to appropriations) | POC | Status | Timing |
|-------|--------------------|---------------------------|---|---|--|----------------------------|
| | | | | | functional role of shellfish aquaculture and natural habitats. Additional funding will be required to complete this action. | |
| | 2.6.11 NOAA | Native shellfish hatchery | \$320K/year(funding for full time FTE at \$200K/year; continued operations and maintenance at \$120K/year); total needed is 25% federal share of \$5M project in partnership with state agencies, tribes and other collaborators. | Laura Hoberecht (alternate Penny Swanson) | In 2017, the Ken Chew Center produced over 4.9M Olympia oyster seed, including 690 bags of seeded cultch with 3.7M spat-on-shell, and 1.2M single oysters. Oysters were spread at priority restoration sites, including Drayton Harbor, Chuckanut Bay, Similk Bay, Sequim Bay, and Dyes Inlet. Four successful spawns of abalone were completed, settling over 3M larvae from 15 families. A total of 4,171 juvenile abalone produced previously were out planted at eight restoration sites. \$50K was provided by NOAA and \$448K (for the 2017-2019 Biennium) provided by the state to support operations at the hatchery, however additional funding is still required to complete 5-year goals. | 5-year project (2017-2022) |

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| Focus | Action Lead Agency | Action | Resource (Subject to appropriations) | POC | Status | Timing |
|-------|--------------------|------------------------------------|---|--------------------|--|--|
| | 2.6.12 NRCS | Native Oyster Restoration Projects | Annual request for funding of this program has been supported by NRCS through the EQIP program. The combined amount of contracts is \$138,396 | John Kendig (NRCS) | <p>NRCS is working with one tribe and one private shellfish grower to implement 2016 contracts on two sites in Puget Sound. The Puget Sound Restoration fund will be doing the on-ground restoration on the tribal contract. Outreach continues to promote the 2018 signup with tribes and commercial growers.</p> <p>In 2018 four EQIP contracts with tribes in Sequim Bay, Port Gamble Bay, Tulalip and Barlow Bay, and South Hood Canal have been developed. Outreach to seven other Tribes and the NW Indian Fisheries Commission to reach out to all Tribes in the Puget Sound waters was undertaken.</p> | Ongoing program with contracts set for three years |

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ACTIONS OUTSIDE OF THE ACTION PLAN

| Focus | Action Lead Agency | Action | Resource (Subject to appropriations) | POC | Status | Timing |
|---------|---|---|---|------------------------|---|---|
| Habitat |  | Timely approval of Hatchery and Genetic Management Plans | Unknown at this time | Allyson Purcell (NOAA) | NOAA hired additional staff and contractors to support the HGMP review process. Hatchery co-managers (tribes) are developing responses to NMFS' requests for data to support the subject consultations. NMFS anticipates co-managers submitting many outstanding HGMPs. | Multi-year effort until backlog is addressed. |
| |  | Readiness and Environmental Protection Integration (REPI) Program | U.S. Navy funds allocated from annual appropriations as projects are developed and submitted to DoD | Teri Lazo (U.S. Navy) | Under the Department of Defense REPI program, the U.S. Navy Region Northwest has partnered with the Trust for Public Land, Jefferson Land Trust, the Washington Department of Natural Resources in Hood Canal and Jefferson County, and the Whidbey Camano Land Trust in Island County to conserve lands and protect waterways and concurrently restrict types of development that are incompatible with U.S. Navy mission. In the Hood Canal partnership, the U.S. Navy has received \$24.1M since 2011, and | Ongoing program |

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| Focus | Action Lead Agency | Action | Resource (Subject to appropriations) | POC | Status | Timing |
|------------------------------|--------------------|-----------------------------------|--|--|--|---|
| | | | | | <p>has preserved over 12,000 acres to date, leveraging additional funds provided by partners and donors. Notable accomplishments include significant protections of the Dosewallips and Duckabush estuaries and watersheds.</p> <p>The U.S. Navy and Whidbey Camano Land Trust have been partnering since 2007, and in 2017 alone, completed 10 land transactions that protected 544 acres (using \$6M in U.S. Navy funds and \$1.7M from the land trust).</p> | |
| Riparian habitat/floodplains | C NOAA, FEMA | Floodplains by Design Partnership | Ongoing appropriations from the WA state legislature (\$35,389,000 was provided for the program in the 2018 capital budget) and NOAA provides funding for workshops, etc | Paul Cereghino (NOAA) and Scott Vanhoff (FEMA) | <p>The collaborative framework of the program provides a venue for discussions among stakeholders, regulators, and floodplain managers including federal and state agencies, tribes, local governments, and non-government entities to find innovative, local solutions within the floodplain.</p> <p>NOAA RC provides financial support and technical assistance through The Nature Conservancy Cooperative Agreement, and</p> | Ongoing program to support annual funding decisions |



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| Focus | Action Lead Agency | Action | Resource (Subject to appropriations) | POC | Status | Timing |
|-------|-------------------------|---|---|----------------------|--|----------------------|
| | | | | | Snohomish Sustainable Lands Strategy and Floodplains for the Future work in the Puyallup. | |
| | D JBLM | Stream Habitat Management Program | Unknown at this time | Paul Steucke (JBLM) | <p>Accomplishments include the following:</p> <ul style="list-style-type: none"> • Conversion of all culverts on Muck Creek to three-sided box culverts • Creation of a 900-foot spawning channel • Riparian habitat enhancement of several miles along Muck Creek • Herbicide treatment for reed canarygrass in critical spawning habitat • Mechanical removal of heavily infested sections of Muck Creek • Adding spawning gravel to springs | Ongoing project work |
| | E EPA/ ORD | Nisqually Community Forest VELMA modeling to inform salmon recovery planning – An EPA-NCF collaboration | 0.5 FTE EPA (internal), 0.2 FTE NCF | Bob McKane (EPA-ORD) | Final report submitted June 2018 to WA Departments of Commerce and Ecology: “Nisqually Community Forest VELMA Modeling to Evaluate Effects of Forest | Completed |

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| Focus | Action Lead Agency | Action | Resource (Subject to appropriations) | POC | Status | Timing |
|-------|--------------------------|--|--|----------------------|--|---|
| | | | | | Management Scenarios on Streamflow and Salmon Habitat.” (76 pages) | |
| | F EPA/ ORD | Tolt River Watershed Salmon Recovery Modeling – A Snoqualmie Tribe-EPA collaboration | 0.5 FTE EPA (internal), 0.2 FTE Snoqualmie Tribe | Bob McKane (EPA-ORD) | September 2018 EPA report to the Snoqualmie Tribe: “VELMA model results for informing riparian and floodplain restoration for salmon recovery in the Tolt River Watershed, WA.” Modeling work completed, report in preparation. | Due to be completed Fall 2018 |
| | G EPA/ ORD NOAA | Develop and apply an integrated terrestrial-marine modeling framework for whole-basin Puget Sound restoration planning | 4-5 FTE currently supported through internal funds from collaborating partners | Bob McKane (EPA-ORD) | 2018 draft proposal submitted to Puget Sound Partnership describing “Development of an Integrated Environmental and Human Systems Modeling Framework for Puget Sound Restoration Planning.” Goal is to establish a coupled terrestrial-marine ecosystem modeling framework (VELMA-Salish Sea Model-Atlantis) to help planners visualize how local to regional restoration decisions will impact Puget Sound Vital Signs. Collaborative effort with federal, state and NGO cooperation. | Final model and report timeframe is subject to funding availability |

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| Focus | Action Lead Agency | Action | Resource (Subject to appropriations) | POC | Status | Timing |
|------------|---|--|---|---------------------|---|--|
| Stormwater |  | Tribal Nations Research Forum and Round Table | Scoping effort – no new/additional resources required at this time | Jay Davis (USFWS) | The recent Tribal Nations Research Forum and Round Table was hosted by the Northwest Indian Fisheries Commission. The forum had two general topics: causes and mechanisms of stormwater’s adverse impacts to tribally important species and communities, and solutions that prevent or reduce stormwater’s adverse impacts. Opportunities were explored where tribes could partner with researchers to identify and develop pilot projects, and to monitor and evaluate effectiveness of potential solutions. | Ongoing collaboration with the next event being held July 25, 2018 |
| |  | Municipal Separate Storm Sewer System (MS4) Stormwater Program | 3 FTE currently supporting Stormwater program implementation through internal funding. FY19 funding request (internal) was submitted for USGS support to install and monitor two gaging stations equipped with direct read water quality meters on Clover Creek for continuous | Paul Steucke (JBLM) | JBLM Environmental Division collected over three years of sampling data on Clover Creek, Murray Creek, American Lake, and Puget Sound to help determine overall water quality of JBLM surface waters. JBLM completed development and implementation of its Stormwater Management Plan, which outlines procedures and plans to comply with requirements set forth by the MS4 | Implementation of MS4 SWMP is ongoing. JBLM is working closely with EPA Region 10 Permit Authority for renewal of MS4 Permit. Current MS4 Permit scheduled to |

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| Focus | Action Lead Agency | Action | Resource (Subject to appropriations) | POC | Status | Timing |
|-------|--------------------|--------|---|-----|--|--|
| | | | flow and data collection of temperature, dissolved oxygen, pH, and turbidity. | | Permit to control discharges to surface waterbodies and the Puget Sound. They conduct illicit discharge investigations, quarterly assessments of industrial facilities and construction sites and visual inspections of outfalls, and in-service stormwater training to ensure pollution prevention practices are upheld. They participate as a stakeholder in Clover Creek TMDL Alternative Working Group to review findings of the state’s Clover Creek dissolved oxygen, fecal coliform, and temperature TMDL study and assemble a series of next steps to address contamination. An EPA inspection of the JBLM Stormwater Program in November 2017 resulted in no findings for the installation. | expire 30SEP18; however, an administrative extension of existing permit was granted by EPA until a new permit is issued. |

***Green** – Achieved and/or actively being worked on; **Yellow** – not current/delayed progress (mostly due to funding); **Red** – Not being worked on (mostly due to funding)

| Focus | Action Lead Agency | Action | Resource (Subject to appropriations) | POC | Status | Timing |
|-----------|--------------------|--|--|---------------------|---|---|
| Shellfish | JBLM | Operations Plan for new wastewater treatment plant at Joint Base Lewis McChord | 4 hours a week of in-house environmental engineer operational support to work with operators to meet performance metric of 3 mg/l Total Inorganic Nitrogen and to document operational parameters for startup and maintenance of seasonal nutrient (nitrogen) removal. | Paul Steucke (JBLM) | Joint Base Lewis-McChord (JBLM) Environmental Division completed a new wastewater treatment plant with biological nutrient removal (nitrogen) capability to produce Class A Reclaimed Water. There was noticeable reduction in nitrate loading to the Sound in 2017. The plant was turned over to JBLM in November 2017, and the operators are still learning how to operate the plant to meet design performance metrics for nitrogen removal. There are many challenges associated with the complexities of biological parameters required to remove nitrogen from the waste stream. The facility managers are developing a plan for documenting procedures, management practices for dischargers, and required treatments that must be in place. | Project work to complete plans and procedures FY18 – FY19 FY18 Full O&M Plans are completed for the operation of the wastewater treatment plant for all utilities, unit operations, and equipment. These plans delivered as part of the project. FY19 Specific operational procedures for the biological nutrient removal process will be developed based on the operational parameters identified in summer 2018 |

*Green – Achieved and/or actively being worked on; Yellow – not current/delayed progress (mostly due to funding); Red – Not being worked on (mostly due to funding)

Appendix B:
Addendum to the Interim Draft
Puget Sound Federal Task Force
Accomplishments Report

Appendix B:
ADDENDUM to the Interim Draft
Puget Sound Federal Task Force Action Plan
FY 2017-2021

The Puget Sound Federal Task Force Action Plan (Action Plan) was accepted by the National Task Force in January 2017. In the last 18 months of implementing the Action Plan, some new actions have been identified, and others are recommended to be removed or significantly changed before the end of the five-year timeframe for the Action Plan. This addendum outlines, in the same format as the Action Plan, those actions to be added, removed and substantially changed. The Action Plan Tracking Table and annual Accomplishments Report also reflect these changes and additions.

Actions to be Added

2.2 Habitat

Timely approval of Hatchery and Genetic Management Plans (HGMPs)

Salmon and steelhead hatchery programs that operate in Puget Sound need to be evaluated and permitted through NOAA's National Marine Fisheries Service to ensure consistency with the Endangered Species Act (ESA). HGMPs are technical documents that thoroughly describe the composition and operation of each individual hatchery program. The primary goal of an HGMP is to describe biologically-based artificial propagation management strategies that ensure the conservation and recovery of ESA-listed salmon and steelhead populations. NOAA uses the information provided by HGMPs to evaluate impacts on salmon and steelhead listed under the Endangered Species Act. Completed HGMPs may also be used for regional fish production and management planning by federal, state and tribal resource managers. Currently, there is a backlog of hatchery projects that require evaluation by NOAA before the hatcheries can proceed. Additional staff has been hired to support the review process, and progress is being made.

Lead Agency: NOAA

Time Frame: FY2017-FY2019

Expected Outcome: Numerous outstanding HGMPs that are protective of ESA listed salmon and steelhead.

Resources (Subject to future appropriations): Unknown at this time

Department of Defense Readiness and Environmental Protection Integration (REPI) Program

the U.S. Navy Region Northwest has partnered with the Trust for Public Land, Jefferson Land Trust, the Washington Department of Natural Resources in Hood Canal and Jefferson County, and the Whidbey

Camano Land Trust in Island County to conserve lands and protect waterways. In the Hood Canal partnership, the U.S. Navy has received \$24.1M since 2011, and has preserved over 12,000 acres to date, leveraging additional funds provided by partners and donors. The U.S. Navy's partnership supports working forests and helps further and develop local agribusiness, while protecting the watershed and the U.S. Navy mission.

Lead Agency: U.S. Navy

Time Frame: Ongoing

Expected Outcome: Protection of tens of thousands of acres for preservation of watershed and estuarine processes. In some cases, working farms and forest lands will be preserved, while also protecting wetland functions, aquifer recharge areas, and natural drainage courses.

Resources (subject to future appropriations): U.S. Navy funds allocated from annual appropriations as projects are developed and submitted to DoD

2.2.2 Protect and Restore Floodplains, and in-stream and riparian habitat

Floodplains by Design Partnership

The Floodplains by Design (FbD) partnership is working to reduce flood risks while restoring habitat in Washington's rivers, maintaining agricultural production, water quality and open space/recreation. Thriving communities can be supported by transforming how floodplains are managed on a landscape scale. The collaborative framework of the program provides a venue for discussions among stakeholders, regulators, and floodplain managers including federal and state agencies, tribes, local governments, and non-government entities.

Lead Agencies: NOAA, FEMA

Timeframe: FY2017 – FY2021

Expected Outcomes: Streams and rivers reconnected to thousands of acres of floodplains providing multiple benefits for salmon, farmers, and flood-prone residents.

Resources (subject to future appropriations): Ongoing appropriations from the Washington State Legislature and NOAA.

Stream Habitat Management Program at JBLM

The focus of JBLM's stream habitat management program is to improve riparian habitat, enhance spawning habitat, improve fish passage and control invasive non-native species (primarily reed canary grass). They are focusing most efforts on Muck Creek by converting culverts to three-sided box culverts, treating reed canarygrass in spawning habitat and adding spawning gravels, and planting riparian vegetation along several miles of the creek.

Lead Agency: JBLM

Time Frame: Ongoing

Expected Outcome: Increased length of functioning in-stream and riparian area on Muck Creek for salmon spawning and rearing.

Resources (Subject to future appropriations): Unknown at this time

Nisqually Community Forest VELMA Modeling

EPA's Office of Research and Development is collaborating with the Nisqually Community Forest to develop a VELMA model to inform salmon recovery planning at the watershed scale. The model will provide forest management scenarios on streamflow and salmon habitat.

Lead Agency: EPA/ORD

Timeframe: 2018

Expected Outcome: Better management decisions on forest practices to improve stream health for salmon and other wildlife.

Resources (Subject to future appropriations): 0.5 FTE

Tolt River Watershed Salmon Recovery Modeling

Develop a VELMA model to inform riparian and floodplain restoration for salmon recovery in the Tolt River Watershed, a tributary to the Snoqualmie River. Prepare a report for use by the Snoqualmie Tribe to help prioritize restoration efforts for maximum salmon recovery benefits.

Lead Agency: EPA/ORD

Timeframe: 2018

Expected Outcome: Best use of limited resources for riparian and floodplain restoration to improve salmon habitat and recovery.

Resources (Subject to future appropriations): 0.5 FTE

Develop and apply an integrated terrestrial-marine modeling framework

Development of an Integrated Environmental and Human Systems Modeling Framework for Puget Sound Restoration Planning to establish a coupled terrestrial-marine ecosystem modeling framework (VELMA-Salish Sea Model-Atlantis) to help planners visualize how local to regional restoration decisions will impact Puget Sound Vital Signs. Once the framework is developed, directly engage local communities, tribes and restoration managers and planners in applying the terrestrial-marine modeling framework across the Puget Sound Basin. Collaborative effort with federal, state and NGO cooperation.

Lead Agencies: EPA/ORD, NOAA

Timeframe: 2018-2021

Expected Outcome: a systems approach model to help local governments and NGOs, tribes and restoration managers make informed planning decisions for better Puget Sound recovery outcomes.

Resources (Subject to future appropriations): 4-5 FTEs

2.3 Stormwater

Tribal Nations Research Forum and Round Table

The tribes have been keenly interested in research exploring stormwater's contribution to lethal and sublethal impacts to Coho, Chinook, Pacific herring, and other finfish and shellfish species. Discussions have included impacts to other culturally important species or communities, including traditionally harvested plants, invertebrates, etc.; chemical and other stressors that impact both fish and marine mammal and human well-being; and synergistic impacts of stormwater's alterations to chemical, thermal, and flow conditions on salmonids at each of their life stages. The forum, which was last hosted by the Northwest Indian Fisheries Commission, is exploring two general topics: causes and mechanisms of stormwater's adverse impacts to tribally important species and communities, and solutions that prevent or reduce stormwater's adverse impacts. Future discussions will explore opportunities where tribes could partner with researchers to identify and develop pilot projects, and to monitor and evaluate effectiveness of potential solutions.

Lead Agency: USFWS, NOAA

Time Frame: FY2018 – FY2020 (Ongoing collaboration)

Expected Outcome: Tribal pilot projects to test the solutions to lethal and sublethal stormwater effects on salmon species. Ultimately, this could lead to requirements for widespread use of these or similar techniques (i.e. green infrastructure) on a project by project basis.

Resources (Subject to future appropriations): Scoping effort – No new/additional resources are required at this time

Municipal Separate Storm Sewer System (MS4) Stormwater Program

Joint Base Lewis McChord (JBLM) Environmental Division completed development and implementation of its Stormwater Management Plan, which outlines procedures and plans to comply with requirements set forth by the MS4 Permit to control discharges to surface waterbodies and the Puget Sound. They conduct illicit discharge investigations, quarterly assessments of industrial facilities and construction sites and visual inspections of outfalls, and in-service stormwater training to ensure pollution prevention practices are upheld. They participate as a stakeholder in Clover Creek TMDL Alternative Working Group to review findings of the state's Clover Creek dissolved oxygen, fecal coliform, and temperature TMDL study and assemble a series of next steps to address contamination. An EPA inspection of the JBLM Stormwater Program in November 2017 resulted in no findings for the installation.

Lead Agency: JBLM

Time Frame: Ongoing

Expected Outcome: Areas of concern identified and corrective actions pursued, system-wide, and especially in the Clover Creek watershed. An education program with actions for individuals to implement to help protect water resources.

Resources (Subject to future appropriations): 3 FTE currently supporting Stormwater program implementation through internal funding.

FY19 funding request (internal) was submitted for USGS support to install and monitor two gaging stations equipped with direct read water quality meters on Clover Creek for continuous flow and data collection of temperature, dissolved oxygen, pH, and turbidity.

2.6 Shellfish

Operations Plan for new wastewater treatment plant at Joint Base Lewis McChord

Joint Base Lewis-McChord (JBLM) Environmental Division completed a new wastewater treatment plant with biological nutrient removal (nitrogen) capability to produce Class A Reclaimed Water. There was noticeable reduction in nitrate loading to the Sound in 2017. The plant was turned over to JBLM in November 2017, and the operators are still learning how to operate the plant to meet design performance metrics for nitrogen removal. There are many challenges associated with the complexities of biological parameters required to remove nitrogen from the waste stream. The facility managers are developing a plan for documenting procedures, management practices for dischargers, and required treatments that must be in place.

Lead Agency: JBLM

Time Frame: FY2018 - FY2019

Expected Outcome: Documentation of operational changes that allow the plant to meet the performance design criteria of 3 mg/l TIN seasonally, once influent temperatures reach 15 C. Management practices for all dischargers to the collection system.

Resources (Subject to future appropriations): 4 hours a week of in-house environmental engineer operational support to work with operators to meet performance metric of 3 mg/l Total Inorganic Nitrogen and to document operational parameters for startup and maintenance of seasonal nutrient (nitrogen) removal.

Actions to be Changed

To date, there are no significant changes to any of the actions in the Action Plan.

Actions to be Removed

2.2.2.19 - Dungeness River Ecosystem Restoration Feasibility Study in partnership with the Jamestown S’Klallam Tribe

Feasibility study of restoration opportunities in the lower 12 miles of the Dungeness River.

Lead Agencies: USACE EPA, NRCS, NOAA

Time Frame: FY 2017 - FY 2019

Expected Outcome: Completion of feasibility study, agency approval of recommended plan, and request for new construction authorization from Congress

Resources (subject to future appropriations): 50% Federal share of \$3M study in partnership with the Jamestown S'Klallam Tribe.

Reason for removal recommendation: The key tribal partner for this action has terminated the study agreement, so adequate funds are not available to continue the project.

2.5.6 - Support multi-agency effort to develop vessel traffic risk assessment

Work collaboratively with WA Department of Ecology and local maritime industry stakeholders to provide waterways management and vessel traffic system guidance and recommendation for the 2015 Vessel Traffic Risk Assessment (VTRA) Study.

Lead Agency/Coordinating Agencies: USCG/EPA, USACE, NOAA

Time Frame: FY 2017 - FY 2021

Expected outcome: Identify risk mitigation strategies that can be used to decrease the risk of a pollution spill in Puget Sound.

Resources (subject to future appropriations): No additional resources needed at this time

Reason for removal recommendation: The POC for this action suggests that the Ports and Waterways Safety Assessment study has concluded, and this action is being implemented in other areas such as Action 2.5.5.

**Appendix C:
Puget Sound Stormwater
Science Team References
(NOAA – USFWS – WSU)**

Appendix C:
Puget Sound Stormwater Science Team
(NOAA-USFWS-WSR)
References

Recent Scientific Publications:

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