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# Pacific Marine and Estuarine Fish Habitat Partnership 2014 Annual Report



Photo credit: Laura Brophy.

*Our mission is to work with partners to protect, enhance, and restore ecological processes and habitats within estuaries and nearshore marine environments to sustain healthy native fish communities and support sustainable human uses that depend on healthy fish populations.*

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## On-the-Ground Restoration

In 2014, the Pacific Marine and Estuarine Fish Habitat Partnership (PMEP) provided \$60,974 in funding to help support three projects focused on estuarine protection and restoration—The Salt River Ecosystem Restoration Project (California)—\$2,374, Collier Boat Ramp and Jetty Removal (Washington)—\$24,100, and Restoration of Saltmarsh Shoreline within the Dabob Bay Natural Area (Washington)—\$34,500.

### **Salt River Ecosystem Restoration Project (California)**



Tidewater goby is one of many species that will benefit from enhanced and newly created habitat. Photo credit: Will Houston.

The Salt River Ecosystem Restoration Project (SRERP) is a cooperative public/private partnership that takes an ecosystem wide approach to restoration. The SRERP has three main components: tidal marsh restoration; restoration of seven miles of the Salt River Channel and floodplain corridor; and upslope sediment reduction. Two and a half miles of the Salt River and 330 acres of tidal marsh were restored in 2013, 1.2 miles of Salt River Channel were restored in 2014, 1.3 miles of channel restoration will occur in 2015, and the

remaining two miles is expected to be completed in 2016. This project is intended to relieve annual flooding on the delta plain and to restore, create and enhance wildlife habitat. The project design also provides increased habitat for salmonids and other brackish and marine species. PMEP funding supports monthly spring and summer fish surveys in 2015 to assess use of the newly enhanced and created habitat by Coho, Chinook, tidewater goby, smelt, and numerous other fish species.

## **Collier Boat Ramp and Jetty Removal (Washington)**



This boat ramp and jetty will be removed. Photo credit: Scott Steltzner.

Squaxin Island Tribe propose to remove the final two sediment barriers that block lateral net shore- drift along 5.7 miles of Pickering Passage in South Puget Sound. The project will remove a private boat ramp and decommission a large boat basin by removing concrete wall extensions that trap sediment. The project site is rated as high priority for restoration by the Puget Sound Nearshore Ecosystem Restoration Project. The site is rated by WDFW as having potential for forage fish spawning. Sand lance have been

documented spawning at the site as well as down drift (sediment) over multiple years of sampling. The drift cell ends ¼ of a mile down-drift from the project area at the Squaxin Pass herring spawning site located at the mouth of Hammersley Inlet. This herring run is documented as one of only two stocks in Puget Sound found to be genetically distinct and is used as an indicator for Puget Sound herring by the Puget Sound Partnership which has set a goal of increasing production to 880 tons by 2020. It is hypothesized that removing the impediments to net shore-drift will result in increased spawning habitat for sandlance, surfsmelt and herring all of which are important food sources for Puget Sound salmonid species.

Long-term success will be represented by increased numbers of salmon due to additional habitat for herring and sand lance forage fish. In the mid-term, the WDFW conducts yearly acoustic trawls of the Squaxin Pass herring stock adjacent to the site to calculate biomass. It is hypothesized that restoring a natural sediment regime, specifically by allowing the nearshore drift of sediment during all conditions, will increase and improve the physical area available for spawning. Short-term success will be evaluated by monitoring beach sediment loads at the site as well as up-drift and down-drift. This will be accomplished measuring tidal height elevations at permanent cross section sites.

PMEP provides matching funds for some of this proposed work.

## **Restoration of Salt Marsh Shoreline within the Dabob Bay Natural Area (Washington)**

Since 2001, Northwest Watershed Institute (NWI) has been working with over 30 organizations and



agencies, including the U.S. Fish and Wildlife Service, Washington State Department of Natural Resources (DNR), and The Nature Conservancy to protect and restore Tarboo-Dabob Bay, one of the largest and least developed salt marsh estuaries remaining in Puget Sound. In 2009, DNR expanded the Dabob Bay Natural Area's proposed boundaries from 280 acres to 6,284 acres of saltmarsh and forested shorelines around the bay to better protect the estuarine ecosystem.



Juvenile Hood Canal summer chum, federally listed as threatened, will benefit from additional rearing habitat in Tarboo Bay. Photo credit: Northwest Watershed Institute.

Since then DNR, NWI and other partners have been acquiring land from willing landowners and restoring properties where needed. The grant from PMEP will restore a high priority shoreline property scheduled for purchase by NWI in May of 2014. The acquisition, using federal and state funds, will protect 1,200 feet of saltmarsh and forest shoreline of critical juvenile rearing habitat by federally Threatened Hood Canal summer chum salmon and Puget Sound Chinook. NWI is restoring the property by removal of a residential site, including complete removal of a

bulkhead, fill, and house built over the wetlands and decommissioning of a well and septic system during the summer of 2014, as well as removal of invasive ivy and scots broom. NWI will then re-vegetate the restoration site with native species in January of 2015.



Bulkhead and backfill to be removed as part of the restoration. Photo credit: Northwest Watershed Institute.

The nearly ¼ mile of nearshore tidelands and saltmarsh fringed shoreline on this parcel is documented habitat for a diversity of fish species, including juvenile Hood Canal summer chum salmon and Puget Sound Chinook salmon, both federally listed as Threatened under the federal Endangered Species Act. The site also provides important nearshore habitat for coastal cutthroat trout, fall chum salmon, Hood Canal coho salmon (federal candidate species), and

steelhead (federally Threatened) all of which return to Tarboo Bay and spawn in Tarboo Creek, the main freshwater stream that feeds Tarboo-Dabob Bay. This fish use information is based on intensive nearshore fish surveys of Tarboo-Dabob Bay conducted by NWI and the Port Townsend Marine Science Center in 2004 as well as state and NWI spawning surveys.

The project will be considered a success if the restoration goals of complete removal of the residential site, fill, bulkhead and access road, and invasive plants is accomplished and the restored site is on a trajectory to match the native plant composition of the adjacent undisturbed portions of the shoreline. This will be evaluated through visual and photo-point monitoring.

# Science and Data

## **Background**

The PMEP and its assessment partners (National Oceanic and Atmospheric Administration [NOAA], National Fish Habitat Partnership [NFHP], and The Nature Conservancy [TNC]) continued implementation of [three Pacific Coast fish habitat assessments](#) to inform future estuary resource protection and restoration efforts along the West Coast and enhance understanding of the role estuaries play in the health and production of commercially important marine fishes:

- (1) [PMEP's Nursery Habitat Assessment](#), focusing on nursery functions for juvenile fish in West Coast estuaries.
- (2) The [National Fish Habitat Plan](#) (NFHP) [National Estuary Assessment](#), focusing on condition and key threats to habitats of recreationally and commercially important fish and shellfish stocks.
- (3) A [Nearshore Forage Fish Assessment](#), focusing on habitat-related changes over time in distribution and abundance of nine species of forage fish inhabiting estuary and nearshore habitats.

These assessments have several tasks in common, including application of a consensus estuary classification scheme, creation of a spatial framework, gathering and compiling habitat and fish data, and developing shared tools and products. In addition, the tasks overlap with two other needs across the region: (1) The NOAA Restoration Center provided seed funding for the spatial framework to simultaneously achieve initial products necessary for studying the contribution of nearshore habitats to recruitment of commercial stocks to offshore fisheries; (2) NOAA's National Marine Fisheries Service (NMFS), in its California Current Integrated Ecosystem Assessment, has approved development of a habitat ecosystem component, with needs of a classification and spatial framework as initial products, to support analysis of habitat indicators in estuary and nearshore habitats.

PMEP Nursery Habitat Assessment	NFHP National Estuary Assessment	Nearshore Forage Fish Assessment
<ul style="list-style-type: none"><li>• Build an online database of existing data on juvenile fish presence, abundance &amp; distribution.</li><li>• Characterize nursery roles of estuaries for focal group of 12-15 spp.</li><li>• Improve knowledge of habitat requirements of these species to improve management.</li></ul>	<ul style="list-style-type: none"><li>• Assess threats to fish habitats across the United States.</li><li>• Provide national perspective on prioritizing habitat restoration and protection.</li></ul>	<ul style="list-style-type: none"><li>• Determine whether nearshore restoration actions can ameliorate habitat conditions for forage fish stocks.</li><li>• Improve our understanding of anthropogenic impacts on forage fish, and potential effects on recreational fisheries caused by changing food supply.</li><li>• Support prioritization of restoration and protection actions that have the greatest benefits to the food chain of recreational fishes.</li></ul>

## **The Utility of the Assessments**

Information gained by the assessments will help West Coast communities and resource managers to:

- Better understand the role of estuaries in sustaining native species of fish and shellfish, including those most important to people;
- Identify nursery habitats for fish and shellfish in estuaries, and determine restoration and protection priorities;
- Identify and evaluate key threats to fish habitat in estuaries ; and
- Demonstrate how protecting and restoring juvenile fish habitat in estuaries contributes to the overall ecological health and economic sustainability of commercial and recreational fisheries.

## **The Partners**

Partners in the effort include National Oceanic and Atmospheric Administration (NOAA), The Nature Conservancy (TNC), Pacific States Marine Fisheries Commission (PSMFC), National Fish Habitat Board (NFHP), West Coast Governors Alliance on Ocean Health (WCGA), and the North Pacific Landscape Conservation Cooperative (North Pacific LCC).

## **Progress in 2014**

- Conducted a [January 2014 West Coast-wide summit](#) to inform the implementation of several phases of the PMEP Nursery Assessment.
- Hosted two PMEP Assessment Team meetings to discuss progress and make decisions on key next steps.
- Completed [an inventory and classification of West Coast estuaries](#) using CMECS.
- Completed a “Nursery Functions of U.S. West Coast Estuaries: The State of Knowledge for Juveniles of Focal Invertebrate and Fish Species.” The report identified estuaries along the West Coast that were most likely to provide juvenile fish habitat, and synthesized information on juvenile nursery requirements of 15 focal species. Information on juvenile presence in these estuarine systems was compiled in a geodatabase associated with the report.
- Hired a data technician to implement tier two data surveys, compile datasets from the West Coast, and present the information to University of Washington scientists to inform PMEP nursery assessment outcomes.
- [Presented an update on PMEP Assessment outcomes](#) at the Restore America’s Estuaries Conference in Washington, DC in November 2014.



- Refined the mapping of estuary extents on the West Coast. Steps included data acquisition (NOAA), iterative quality assurance steps that include test runs, review of results, and method adjustments (resolution, interpolation methods, comparison to other data sources), expert review, final methods adjustments, and final run and final review, and release of products. Steps 1 and 2 have been completed, and PMEP will be conducting the expert review via webinar in January 2015.
- The spatial framework, which includes refining mapping of estuary extents (see bullet above), is being developed to combine the best available data to create consistent coastwide estuary habitat units (NWI/CCAP) following Oregon Coastal Atlas methods ([http://www.coastalatlant.net/documents/cmecs/PSM\\_FinalReport\\_Oct2014.pdf](http://www.coastalatlant.net/documents/cmecs/PSM_FinalReport_Oct2014.pdf)), applying the CMECS crosswalk following the Oregon model, and partnering with NFHP and the Forage Fish Assessment to nest units within the larger coastwide framework, including the nearshore zone. Next steps include identifying and filling key spatial data gaps from the best available data.
- Planned to present a session on the PMEP Nursery Assessment for the upcoming CERF 2015 meeting in Portland, Oregon.
- In preparation for 2015, PMEP solicited project proposals for 2015 NFHP funding from Oregon entities and received a total of seven proposals.

## Outreach and Education

### **The Coastal Fish Habitat Partnerships and Other FHPs**

The PMEP Coordinator is helping to arrange regular conference calls with the coastal fish habitat partnerships in the United States, and launched the development of [quarterly coastal FHP newsletters](#). The PMEP Coordinator coordinated and facilitated a panel discussion at the Restore America's Estuaries Conference in November 2014.

### **10 Waters to Watch**



Milltown Island, Washington.

PMEP was selected by NFHP to highlight the Milltown Island Estuary in the national “[10 Waters to Watch](#)” campaign. Milltown Island historically was an estuarine wetland and is located in the Skagit tidal delta. Restoration of this island was identified in the federally adopted Skagit Chinook Recovery Plan. Phased restoration began at the 212-acre Milltown Island in 2007 through the use of explosives to breach the dike

surrounding the perimeter of the island. The primary purpose of restoration at Milltown is to increase rearing habitat capacity to natural origin juvenile Chinook salmon. Carrying capacity in the Skagit estuary is limiting the Chinook population to recover. The processes restored as a result of the restoration include:

- Natural formation of tidal channels in estuaries.
- Unrestricted movements of saltwater through tidal channels in estuaries.
- Accumulation and retention of organic material from plants and aquatic animals.
- Unrestricted movement and migration of fish and wildlife.

Conditions improved as a result of the restoration:

- Restored tidal freshwater wetlands, which are highly productive habitats that support biodiversity and provide connectivity between the land and sea.
- Restored large river delta that provides valuable nursery habitat for threatened species of juvenile salmon, such as Chinook, increasing their survival and supporting population recovery in Puget

Sound.

- Improved quality of water flowing through the estuary.

Current fish assemblage includes 14 native species: Chinook salmon, coho salmon, chum salmon, pink salmon, cutthroat trout, steelhead trout, mountain whitefish, three spined stickleback, peamouth chub, prickly sculpin, pacific staghorn sculpin, starry flounder, large scale sucker, and surf smelt. Potential fish assemblage may include several additional native fish species (pacific lamprey, shiner perch) and non-native fish species (largemouth bass, pumpkinseed sunfish).



Excavation of interior marsh channels using explosives.  
Photo credit: Skagit River System Cooperative.

## **Eel River Delta Event**

In September of 2014, the Forum quad-hosted the Eel River Delta event, convening landowners, stakeholders, nonprofit organizations, tribal sovereign nations, and local, state, and federal agency representatives to discuss the successes and challenges of restoring habitat in the working landscape of the Eel River Delta.

## **Finances**

**The PMEP received a total of \$174,412 in funding in 2014:**

- Multi-state conservation grant—\$38,438
- National Fish Habitat Partnership (USFWS)—\$135,974

The \$60,974 PMEP provided for three projects in 2014 was matched with \$402,374 in funding from other sources and partners.

