

ESTUARY AND SALMON RESTORATION PROGRAM

ADVANCING NEARSHORE PROTECTION AND RESTORATION

2012 PROGRAM REPORT



Washington
Department of
**FISH and
WILDLIFE**



History and Vision

In 2006, the state Legislature, with the broad support of governmental, tribal, non-profit and private representatives from the region, created the Estuary and Salmon Restoration Program (ESRP) to advance nearshore restoration and to support salmon recovery. The program is managed by the Washington Department of Fish and Wildlife (WDFW), in partnership with the Recreation and Conservation Office (RCO). It provides grant funding and technical assistance for restoration and protection projects within the nearshore of Puget Sound.

A lasting solution, not a band-aid

ESRP's mission is to protect and restore the natural processes such as tidal flow, freshwater input, and sediment input and delivery that create and sustain habitats in Puget Sound. Projects funded by ESRP focus on removing the underlying causes of degradation such as shoreline armoring, dikes, blocked or undersized culverts, and other physical structures, thereby restoring the very processes that created Puget Sound's rich and productive ecosystems. By addressing the underlying causes, not just the symptoms, ESRP sets in motion projects that are sustainable over time.





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Front cover: Barnum Point, funded by ESRP in 2011 Investment Plan, courtesy Jenna Jewett
 Back Cover: Seahurst Park, funded by ESRP in 2007 Investment Plan, courtesy City of Burien
 Aerial photos throughout report provided by Department of Ecology's Washington State Coastal Atlas

Washington Department of Fish and Wildlife
 Habitat Program
 February 2013

PROTECTING AND RESTORING PUGET SOUND

What is the nearshore and why should we restore it?

Puget Sound is the nation's second largest estuary with approximately 2,500 miles of shorelines, over 800 unique coastal bays and inlets and 16 major river deltas, collectively comprising what is called the nearshore. The nearshore extends from the tidally influenced portions of streams and rivers, to the coastal waters at a depth where sunlight no longer supports marine vegetation. This narrow ribbon of land and shallow water that rings Puget Sound is the transition area between marine, freshwater and terrestrial habitats which gives rise to some of the most productive ecosystems on earth. These ecosystems support important resources including salmon and shellfish, and also provide access to shorelines for economical and recreational opportunities.

RIVER DELTAS



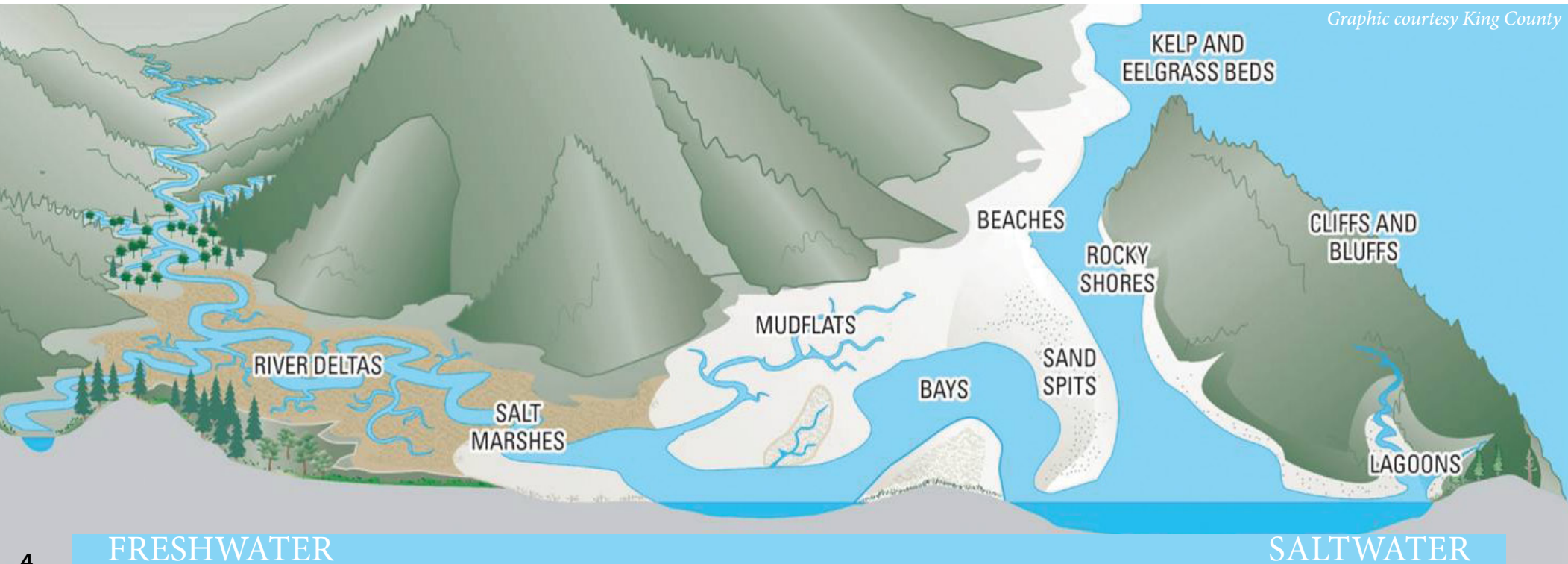
BAYS & INLETS



BEACHES



BLUFFS



Supporting salmon recovery

Healthy ecosystems are more productive ecosystems. ESRP leads to healthy habitat for salmon by ensuring that these systems are intact, functioning naturally, and resilient to climate change. We select projects for funding that address the root causes of habitat loss and degradation, thereby insuring long-term sustainability and productivity.



Photo courtesy Betsy Lyons



Photo courtesy North Olympic Salmon Coalition



Photo courtesy USFWS



Photo courtesy Betsy Lyons



Photo courtesy Hugh Shipman

Advancing regional recovery efforts and the Action Agenda

Recognizing the importance of the nearshore, the Washington Department of Fish and Wildlife and the U.S. Army Corps of Engineers initiated the Puget Sound Nearshore Ecosystem Restoration Project (PSNERP) in 2001 to identify problems and propose solutions for nearshore ecosystem degradation in Puget Sound. This work has been adopted by the Puget Sound Partnership as the “nearshore component” of the Action Agenda. Since its inception, ESRP has been working to advance the PSNERP strategies, the Puget Sound Partnership’s Action Agenda, salmon recovery and the conservation mission of the Washington Department of Fish and Wildlife.

PUTTING PEOPLE AND PUGET SOUND BACK TO WORK

Creating local jobs

From accountants, to engineers, to project managers and heavy equipment operators, habitat restoration provides great opportunities to create jobs in local communities. Working to make Puget Sound a healthier, more vibrant and sustainable place to live is a rewarding endeavor for many. A recent federal study found that watershed restoration work creates up to 17 direct jobs per \$1 million invested—more than any other type of capital project[1]. The majority of these funds (80 cents/dollar) are predicted to stay within the county where restoration occurred based on another recent study of restoration projects in Oregon[2].

“This job has kept my family in employment for three years. I’ve had up to 20 employees (at a time) work the job throughout plus subs so you’re looking at 50+ guys just on my end. It’s a pretty big impact in the community because 90% of us live locally and we’ve lived here all our lives. It’s fun to work close to home and be able to do something to help the community and the fish.”

- Craig Holmgren, project superintendent for Interwest Construction Inc. Fisher Slough Project

Providing wide-ranging benefits for communities

Healthy ecosystems are more productive ecosystems - providing local communities with a range of valuable “ecosystem goods” such as abundant fish and shellfish, wildlife, clean water, public access and swimming beaches as well as “ecosystem services” such as flood storage, erosion control, water filtration, and carbon sequestration. As Puget Sound’s nearshore has been altered, its ability to provide the historical level of ecosystem goods and services has decreased dramatically. Investing in ESRP will not only create jobs and advance salmon recovery, but it will put our shorelines back to work supporting and delivering natural goods and services to local communities. This win-win situation will result in a sustained economy and improved quality of life.

Preparing now for an uncertain future

Healthy ecosystems, like healthy people, are well positioned to respond positively to disease, stress and other challenges. Pro-active investments in our natural systems today will pay off in the future by making our shorelines more resilient and better able to weather and adapt to changing conditions, such as predicted sea-level rise. Future generations will benefit from our investment in a healthy Puget Sound.



Photo courtesy The Nature Conservancy



Photos courtesy



Betsy Lyons



Photo courtesy Skagit River System Cooperative

[1] Edwards PET, et al. Investing in nature: Restoring coastal habitat blue infrastructure and green job creation. Mar. Policy (2012) <http://dx.doi.org/10/1016/j.marpol.2012.05.020>

[2] Ecostrust Whole Watershed restoration Initiative, Oregon’s Restoration Economy: Investing in natural assets for the benefit of communities and salmon. 2012 www.ecostrust.org/wwri/downloads/WWRI_OR_brochure.pdf

WORKING TOGETHER TO CREATE A MORE SUSTAINABLE PUGET SOUND



Photo courtesy Betsy Lyons



Photo courtesy The Nature Conservancy



Photo courtesy NOAA

Restoration community partners

Built largely on the shoulders of salmon recovery and watershed planning, the restoration community in Puget Sound moves our work forward. Together, the salmon recovery Lead Entities, Regional Fisheries Enhancement Groups, tribal governments, local governments, Marine Resource Committees, non-profit organizations, and others work to develop and implement projects at the local level. Without their support and dedication our work would not be possible.

Funding partners

ESRP was created through partnerships and continues to foster strategic relationships to advance our mission. Working with a number of federal agency partners, ESRP's competitive project selection process has been used to direct federal recovery dollars to on-the-ground projects.



In 2007, the **National Oceanic and Atmospheric Administration**, through their Restoration Center entered into a 3-year partnership with the Washington Department of Fish and Wildlife's Estuary and Salmon Restoration Program. Through this partnership, over \$1.2 million in federal funding was combined with state funds to implement a number of important nearshore ecosystem restoration projects in Puget Sound. NOAA continues to provide valuable technical support and joint funding of projects under an agreement with the Puget Sound Partnership.



Through a partnership between the **Environmental Protection Agency** and the Puget Sound Marine and Nearshore Grant Program managed by Departments of Fish and Wildlife and Natural Resources, \$12.1 million in federal funding was awarded to the state for marine and nearshore protection and restoration in Puget Sound. ESRP was identified as an effective mechanism for distributing a portion of these funds for strategic capital projects in Puget Sound. To date, approximately \$3.7 million in federal funds have been awarded to ESRP projects.

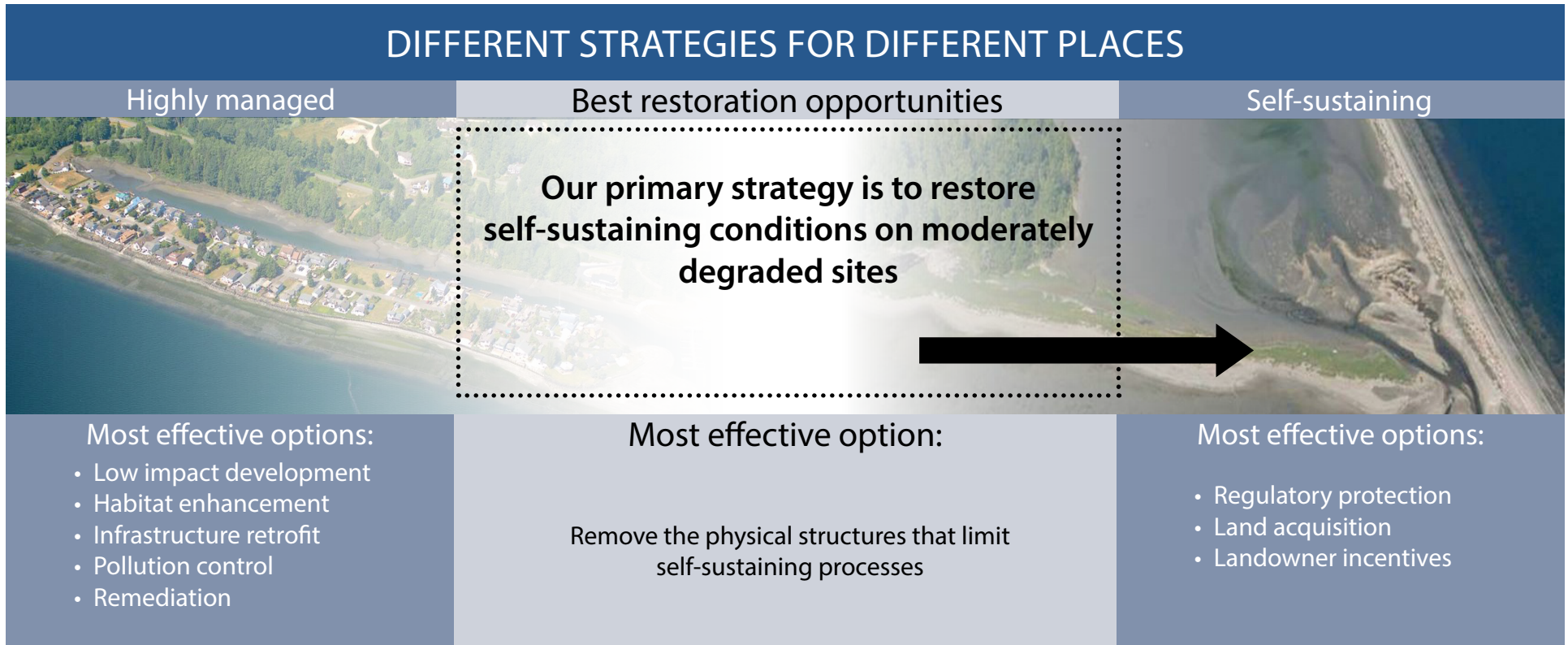


The **U.S. Fish and Wildlife Service** was an instrumental partner in establishing ESRP and has provided technical support since its inception. Millions of dollars from the USFWS National Coastal Wetlands Grant Program have helped to purchase sites for nearshore restoration. By working together we are able to coordinate awards to best leverage state and federal funds.

APPROACH TO RESTORATION

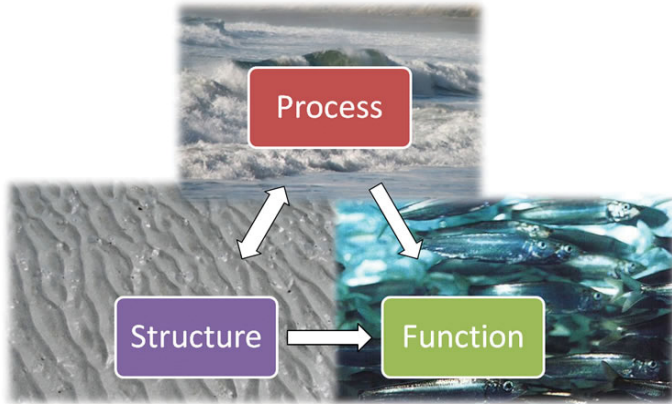
Our restoration strategy

Our aim is to reduce or eliminate, through restoration and protection, the underlying causes of degradation (e.g. dikes or culverts that impede natural tidal flow) and to move sites on a trajectory towards more natural, self-sustaining conditions. The majority of our restoration work is focused on moderately degraded sites where there is the greatest potential for cost-effective restoration.



Integrating restoration and protection

Restoration is a critical element of salmon and ecosystem recovery, although it alone is not sufficient for solving the many problems facing Puget Sound. Development and on-going habitat destruction continue to outpace restoration and until this trend is reversed, true net gains will not be realized. However, the restoration and protection strategies developed by the Puget Sound Nearshore Ecosystem Restoration Project, which guide ESRP's work, can be used to develop a more comprehensive and better integrated approach to Puget Sound recovery.

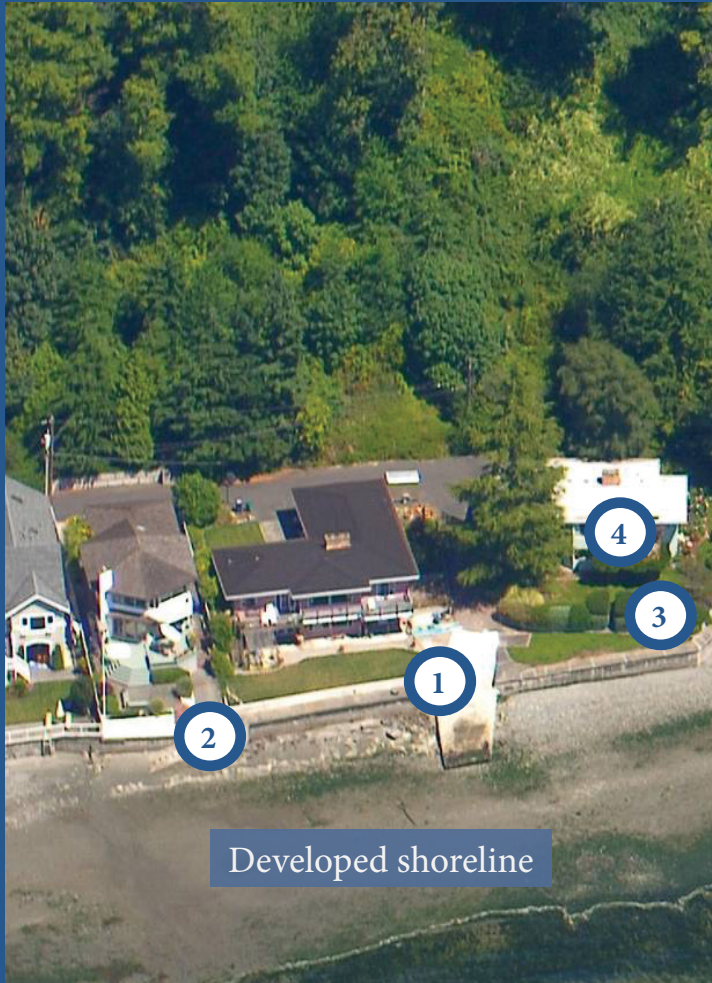


Natural processes: Creating and sustaining the nearshore

Puget Sound's shorelines, bays and river deltas are created and sustained over time through the interactions of natural processes including tidal flow, freshwater input, and sediment deposition and transport. These natural processes create habitats, which in turn, provide functions such as juvenile salmon rearing or forage fish spawning. For example, eroding bluffs provide fresh sediment to replenish beaches which are continually shaped by tides and storms. In river deltas, tidal exchange and fresh water flows from the river converge in the estuary creating complex channel systems which support salmon and many other species. River flows also transport sediment and nutrients from the upper watershed into the estuary creating and replenishing marshes with new sediment.

IMPACTS FROM DEVELOPMENT

- 1 Fill in intertidal area covers forage fish habitat
- 2 Armoring prevents sediment input and freshwater input
- 3 Removal of overhanging shoreline vegetation reduces habitat and source of woody debris
- 4 Houses and armoring prevent beaches from adapting to sea-level rise



Developed shoreline

BENEFITS OF INTACT OR RESTORED HABITAT

- 1 Intertidal habitat available for forage fish spawning
- 2 Natural erosion frees sediment from bluffs to nourish beaches
- 3 Overhanging shoreline vegetation provides slope stabilization, woody debris, and a supply of insects which fish and birds eat
- 4 Unarmored shorelines can migrate landward if sea-level rises



Natural or restored shoreline

PROGRAM ACCOMPLISHMENTS



Includes NOAA Restoration Center Funding



Includes EPA Puget Sound Funding

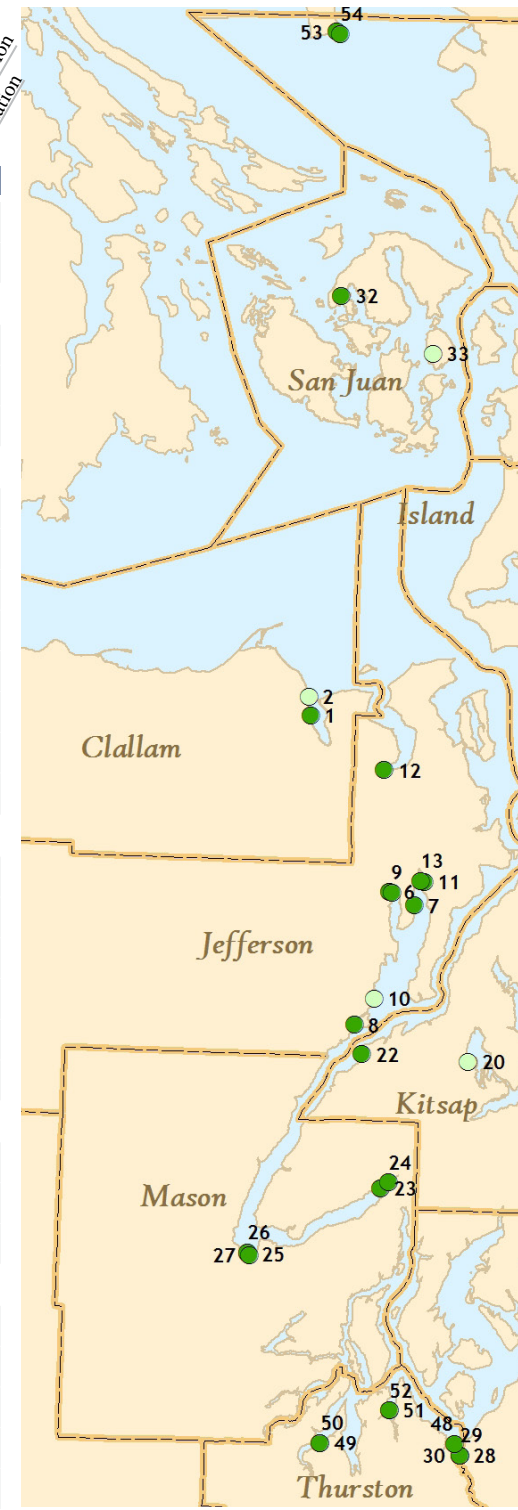
Not applicable

Underway

Proposed or future

Completed phase

Project Name	Sponsor	Award	System	Parcel ID						
				Acquisition	Negotiation	Protection	Feasibility	Design	Implementation	Evaluation
CLALLAM COUNTY										
1 Pitship Barrier Estuary Reconnection	North Olympic Salmon Coalition	\$76,000	Embayment							
2 Washington Harbor Restoration	Jamestown S'Klallam Tribe	\$1,000,000	Embayment							
ISLAND COUNTY										
3 Barnum Point Acquisition	The Nature Conservancy	\$1,050,000	Beach							
4 Crescent Harbor Tidal Reconnection	Skagit River System Coop	\$523,000	Embayment							
5 Livingston Bay Acquisition & Restoration	The Nature Conservancy	\$1,135,000	Embayment							
JEFFERSON COUNTY										
6 Big Quilcene Ring Dike Removal	Hood Canal SEG	\$200,000	River delta							
7 Dabob Natural Area Acquisition	The Nature Conservancy	\$750,000	Beach							
8 Duckabush Robinson Rd Levee Setback	Hood Canal SEG	\$112,000	River delta							
9 Little Quilcene Estuary Rehabilitation	Hood Canal SEG	\$200,000	River delta							
10 Lower Dosewallips Floodplain Restoration	Wild Fish Conservancy	\$610,000	River delta							
11 Tarboo/Dabob Bay Acquisition & Restoration	The Nature Conservancy	\$505,000	Beach							
12 Salmon Creek Fill Removal	North Olympic Salmon Coalition	\$340,000	Embayment							
13 Phase 2 Tarboo Bay Land Acquisition	Northwest Watershed Institute	\$229,000	Beach							
KING COUNTY										
14 Duwamish Gardens Acquisition	City of Tukwila	\$394,000	River delta							
15 Olympic Sculpture Park Interpretation	Seattle Art Museum	\$36,000	River delta							
16 Olympic Sculpture Park Monitoring	Seattle Public Utilities	\$252,000	River delta							
17 Olympic Sculpture Park Pocket Beach	Seattle Public Utilities	\$178,000	River delta							
18 Pt. Heyer Drift Cell Preservation Phase II	King County	\$213,000	Beach							
19 Seahurst Park N Shoreline Feasibility	City of Burien	\$1,100,000	Beach							
KITSAP COUNTY										
20 Chico Estuary Restoration Project	Suquamish Tribe	\$215,000	Embayment							
21 Pilot Point Acquisition	Kitsap County	\$500,000	Beach							
22 Stavis NRCA Barrier Estuary Restoration	Dept. of Natural Resources	\$123,000	Embayment							
MASON COUNTY										
23 Belfair State Park Berm Removal	Hood Canal SEG	\$200,000	Beach							
24 Klingel Marsh Restoration	Hood Canal SEG	\$54,000	Embayment							
25 Skokomish Estuary Phase III	Skokomish Tribe	\$276,000	River delta							
26 Skokomish West Bank Dike Removal	Mason Conservation District	\$940,000	River delta							
27 Skokomish-Nalley Island Dike Removal	Mason Conservation District	\$358,000	River delta							





FOR MORE INFORMATION:
BETSY LYONS
(360) 902-2572
BETSY.LYONS@DFW.WA.GOV
WWW.PUGETSOUNDNEARSHORE.ORG/ESRP/

*Photo courtesy City of Burien
Seahurst Park: Recently restored shoreline in forefront.
Planned future restoration includes removal of armoring seen in background.*