

Estuary & Salmon Restoration Program

ADVANCING NEARSHORE PROTECTION AND RESTORATION

2015 PROGRAM REPORT



Washington
Department of
**FISH and
WILDLIFE**

The Estuary and Salmon Restoration Program (ESRP) provides funding and technical assistance to organizations working to restore shoreline and nearshore habitat critical to salmon and other fish species in Puget Sound.

The program is managed by the Washington Department of Fish and Wildlife (WDFW), in partnership with the state Recreation and Conservation Office (RCO) and the Puget Sound Partnership (PSP).

Through a strategic, science-based selection process, the program advances efforts to recover regional salmon populations by ensuring restoration projects address essential fish habitat, such as shorelines, estuaries and bays.

This approach is key to restoring the health of Puget Sound.

Benefits of habitat restoration include:

- **Creating local jobs** - Every \$1 million invested in restoration and protection programs, such as ESRP, results in an average of 17 jobs and more than \$3 million in economic activity. (OFM, 2015)
- **Building resilient coastlines** - Natural shorelines serve as buffers for coastal communities, providing protection from the effects of climate change, such as increased flooding and rising sea levels.
- **Investing in communities** - Healthy ecosystems provide sustainable fish and shellfish populations that support recreational and commercial fishing industries important to the economies of coastal communities.





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Credits

Washington Department of Fish and Wildlife
Habitat Program | Restoration Division
February 2015

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Front cover: Coho salmon in a Skagit River tributary, photo by Jessica Newley
Back Cover: Restored tidal channels of the Skokomish River Delta

WHAT IS THE NEARSHORE?

The nearshore is an essential place that connects land and sea

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 water provides some of the most productive ecosystems on earth.

RIVER DELTAS



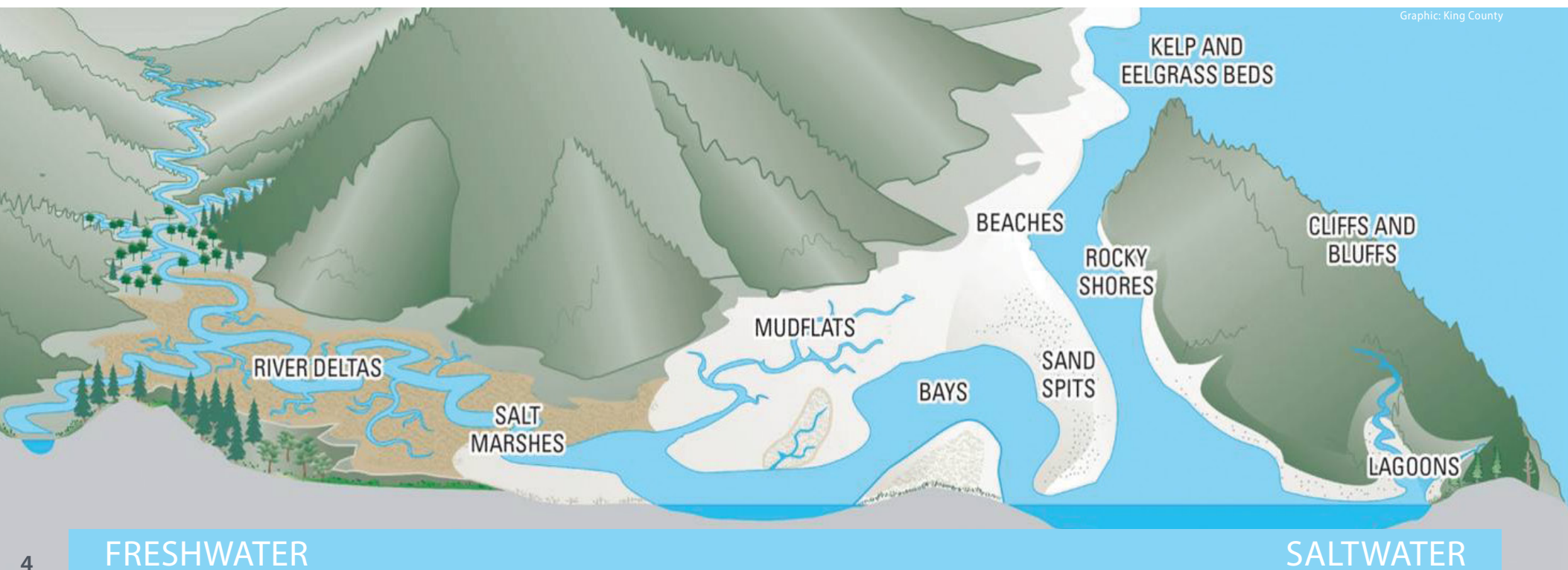
COASTAL INLETS



BARRIER EMBAYMENTS



BEACHES & BLUFFS



Graphic: King County

Puget Sound is home to people, fish, and wildlife

Puget Sound and its nearshore are a unique part of Washington. The nearshore is a deep-rooted part of our culture and heritage. Families flock to the beaches to relax, gather shellfish, kayak, play in the tide pools, picnic and soak up the sun. We visit our estuaries to breathe in the fresh air, watch birds traveling the Pacific Flyway, observe wildlife, and explore the beauty of the diverse delta channels made by powerful rivers. A healthy nearshore is a bountiful one that provides many economic and recreational opportunities.

Creating local jobs

Every \$1 million invested in restoration projects create an average of 17 jobs and over \$3 million in economic activity. (OFM, 2015)



Building resilient coastlines

Natural shorelines serve as buffers for coastal communities, making them more resilient to flooding and sea level rise.

Investing in communities




Investing in Puget Sound nearshore ecosystems will put our shorelines back to work supporting and delivering valuable natural goods and services to local communities. This will result in a sustainable economy and improved quality of life.

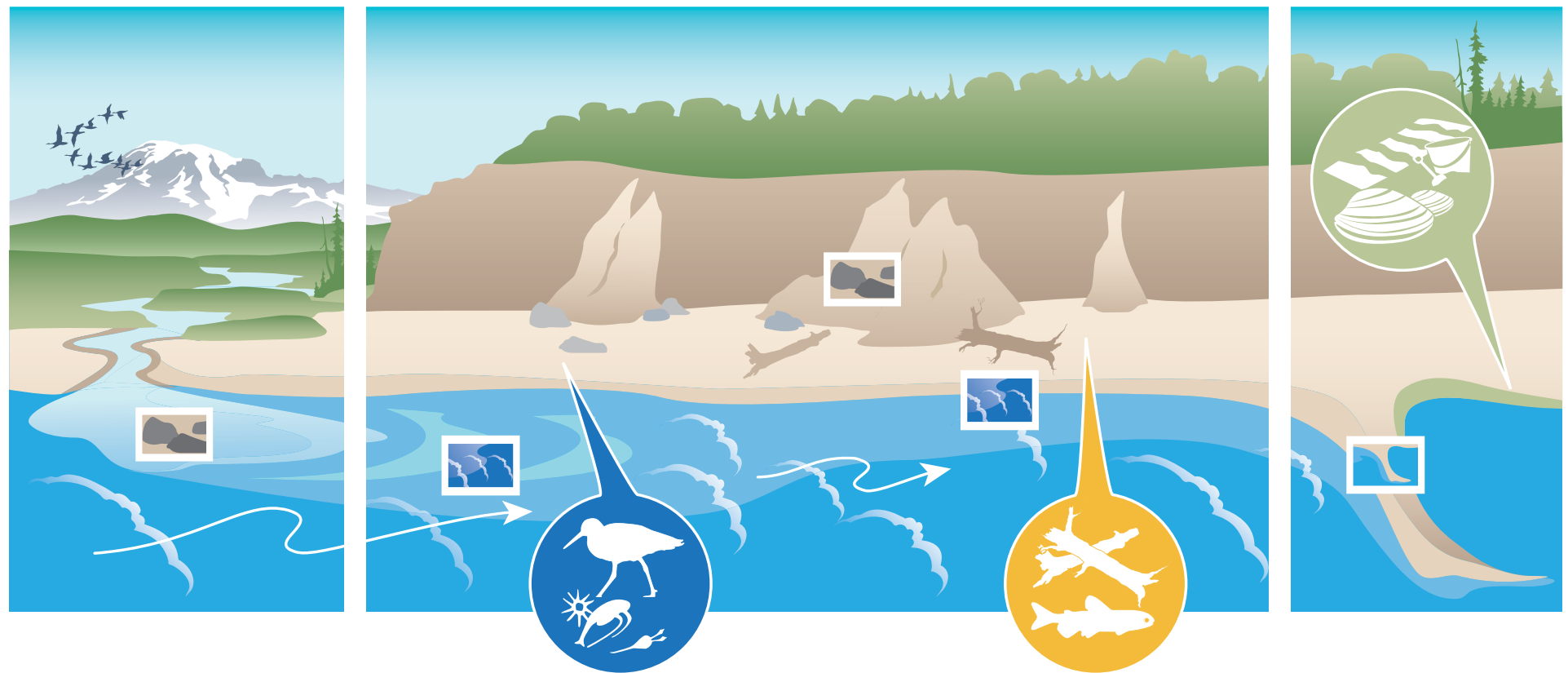


HOW DO WE PROTECT AND RESTORE THE NEARSHORE?

Restoring natural processes: Creating and sustaining the nearshore

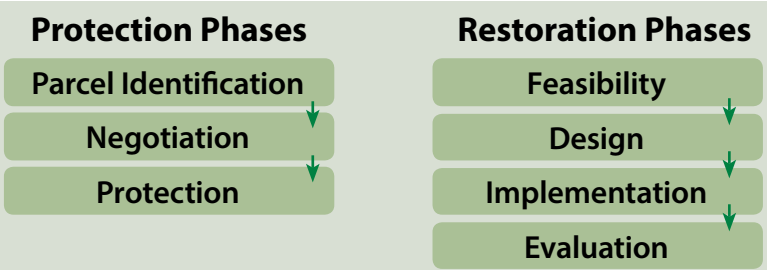
Puget Sound’s shorelines, bays and river deltas are created and sustained over time through the interactions of **natural processes** including **tidal flow, wave energy, freshwater input, and sediment supply, transport, and accretion**. Forage fish spawn and juvenile salmon feed in nearshore habitats created by these natural shoreline processes.

The illustration below shows one of many natural processes: sediment supply  , transport  , and accretion  . A river delta and eroding bluffs provide fresh sediment to replenish beaches, which are continually re-shaped by tides and storms. This frequently changing habitat is home to diverse populations of fish and wildlife, and also provides commercial and recreational opportunities for people.



Funding phases of restoration and protection

ESRP funds projects to restore natural processes in discrete phases. This approach ensures projects progress in a timely manner and effectively use the funds awarded for each phase.



Supporting salmon recovery

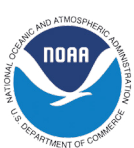
Healthy ecosystems are more productive ecosystems. ESRP selects projects for funding that address the root causes of habitat loss and degradation, thereby insuring long-term sustainability and productivity for salmon and all wildlife. In 2001, WDFW and the U.S. Army Corps of Engineers initiated the Puget Sound Nearshore Ecosystem Restoration Project (PSNERP) 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 Action Agenda, salmon recovery, and the conservation mission of the WDFW.

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 Resources 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. ESRP’s competitive project selection process has been used to direct federal dollars to on-the-ground projects.



In 2007, the National Oceanic and Atmospheric Administration entered into a 3-year partnership with ESRP. To date, over \$1.2 million in federal funding has been combined with state funds to implement 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.



The Environmental Protection Agency awarded \$18.1 million in federal funding to the state to fund projects for marine and nearshore protection and restoration in Puget Sound. WDFW partnered with the Department of Natural Resources to form the Puget Sound Marine and Nearshore Grant Program to manage the funds. To date, approximately \$4.3 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.

Discovery Bay

Discovery Bay is located in the Strait of Juan De Fuca, in the northwestern region of Puget Sound. At the southern end of the bay, Salmon and Snow creeks form an estuary that has been identified as critical habitat for Endangered Species Act (ESA) listed salmon and steelhead, as well as Olympia oysters, forage fish, and migratory shorebirds. Since the early 1900s, many human activities have heavily altered the ecosystem, most notably fill material and shoreline armoring used to build a railroad.

One hundred years later, the restoration community responded to the pressing need to bring Discovery Bay back to its historic potential with two significant restoration projects. During the summer of 2014, the first of two phases of restoration was completed.

The second phase of restoration, proposed for completion in the ESRP 2015 Investment Plan, will remove the final 1,465 feet of railroad grade. This will restore an additional 16 acres of salt marsh and estuary.

Sponsor:
North Olympic Salmon Coalition

Partners:
Jefferson County
Jefferson Land Trust
Jefferson County MRC
WA Dept. of Fish and Wildlife
U.S. Fish and Wildlife Service

Funding for Phase 1:
\$1,219,912

Acres restored:
23.9



Before



After

Work Completed:

- 110 feet of railroad trestle removed

Habitat Restored:

- 1 acre pocket estuary
- 4.8 acres of estuarine intertidal enhancement
- 3 stream mouths
- 11.1 acres of high and low salt marsh establishment

Work Completed:

- Removed 1250 feet of shoreline armoring and 11,160 cubic yards of nearshore fill

Habitat Restored:

- 2 acres of beach faces
- 2 acres of spits



Before



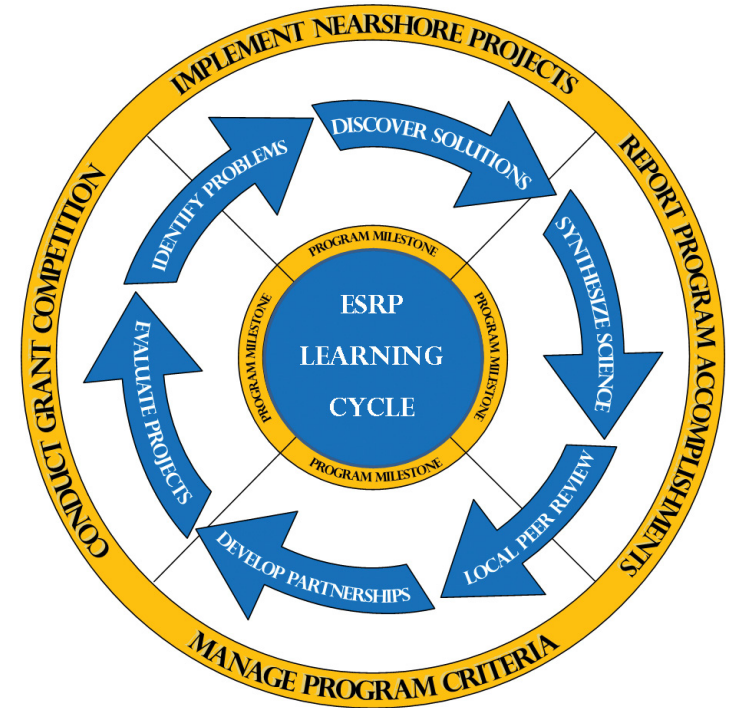
After

Using Lean principles to restore estuary and nearshore habitat

- ESRP increases efficiencies through streamlined contract administration and strategically coordinated investments.
- ESRP maximizes public investments through a continually improving project selection process. The Learning Program works to increase our effectiveness at restoring estuary and nearshore habitat, which in turn will provide the most benefits for Washington's fish, wildlife, and residents.

ESRP's Learning Program: The future of nearshore restoration

The Learning Program was developed to assess the results of completed restoration work at a regional scale, and use those results to advance future projects. Ten percent of the funding during each grant cycle is awarded to worthy projects that help us answer the question: How can we improve the effectiveness of habitat restoration in Puget Sound? Below is a compelling example describing how this works.



Delta Tidal Channel Reference Model

The Delta Tidal Channel Reference Model project developed a basis for designing and tracking recovery of tidal channels following restoration, by looking at the character of naturally occurring systems. Review of the next generation of projects showed that we were dramatically under-building the number of tidal channel openings compared to natural systems, diminishing full advantage of fish benefits in the process of trying to trim costs.

How this changed future projects:

Smith Island redeveloped a design with more breaches and dike removal to insure large project investments deliver the expected benefits.

Sponsor:
Skagit River
System Cooperative

Funding:
\$122,500

Focus:
River Deltas

Restored tidal channels of the Skokomish River Delta















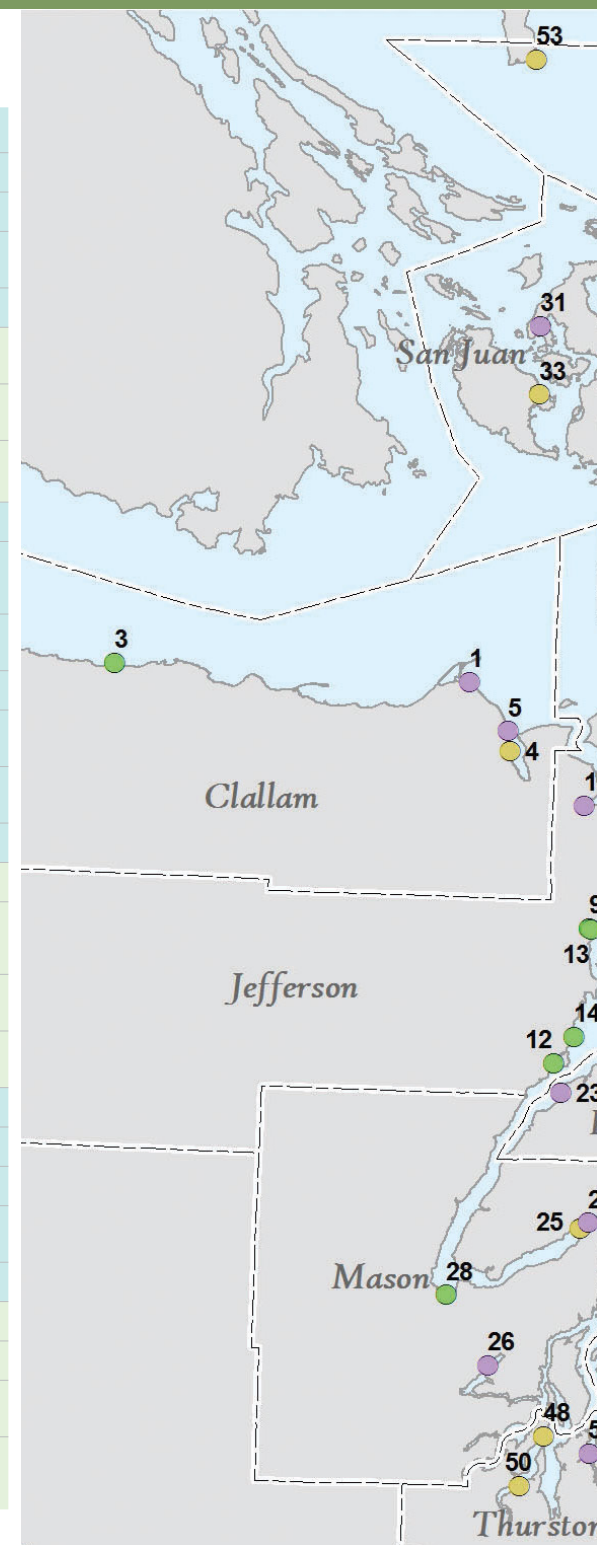
PROGRAM ACCOMPLISHMENTS: 2006 - 2014

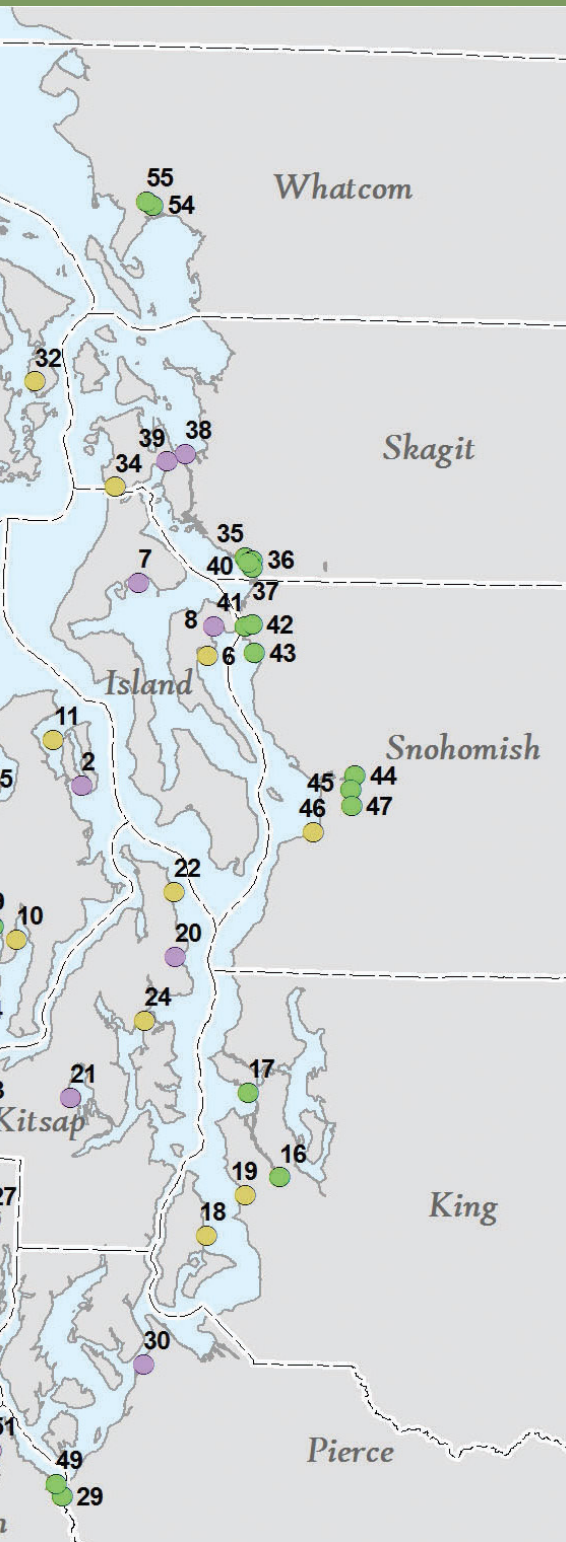
Beach System

Embayment System

River Delta System

	Place		Protection/Design/ Restoration	Sponsor(s)	Legislative District	Award
Clallam	1. 3 Crabs Estuary		R	North Olympic Salmon Coalition	24	\$131,000
	2. Kilisut Harbor		D	North Olympic Salmon Coalition	24	\$427,000
	3. Lyre River Estuary		P	North Olympic Land Trust	24	\$220,000
	4. Pitship Estuary		R	North Olympic Salmon Coalition	24	\$76,000
	5. Washington Harbor		R	Jamestown S'Klallam Tribe	24	\$1,000,000
Island	6. Barnum Point		P	The Nature Conservancy	10	\$984,000
	7. Crescent Harbor		R	Skagit River System Cooperative	10	\$523,000
	8. Livingston Bay		P & R	The Nature Conservancy	10	\$1,135,000
Jefferson	9. Big Quilcene Estuary		R	Hood Canal SEG	24	\$200,000
	10. Tarboo/Dabob Bay		P & R	Northwest Watershed Institute, The Nature Conservancy	24	\$1,331,000
	11. Fort Townsend State Park		R	Jefferson County	24	\$52,000
	12. Duckabush Estuary		R	Hood Canal SEG	24	\$112,000
	13. Little Quilcene Estuary		R	Hood Canal SEG	24	\$200,000
	14. Lower Dosewallips Estuary		R	Wild Fish Conservancy	24	\$610,000
King	15. Discovery Bay		R	North Olympic Salmon Coalition	24	\$1,560,000
	16. Duwamish Gardens		P	City of Tukwila	11	\$394,000
	17. Olympic Sculpture Park		R	Seattle Art Museum, Seattle Public Utilities	36	\$466,000
	18. Point Heyer		P	King County	34	\$213,000
	19. Seahurst Park		R	City of Burien	34	\$1,657,000
Kitsap	20. Carpenter Creek		R	Kitsap County	23	\$601,000
	21. Chico Creek		R	Suquamish Tribe	35	\$212,000
	22. Pilot Point		P & R	Kitsap County	23	\$500,000
	23. Stavis NRCA		R	Department of Natural Resources	35	\$123,000
	24. West Bainbridge Shoreline		P	Bainbridge Island Land Trust	23	\$396,000
Mason	25. Belfair State Park		R	Hood Canal SEG	35	\$200,000
	26. Johns Creek		P	Capitol Land Trust	35	\$67,000
	27. Klingel Marsh		R	Hood Canal SEG	35	\$54,000
	28. Skokomish River		R	Mason Conservation District, Skokomish Tribe	35	\$2,182,000





	Place		Restoration/Design/ Protection	Sponsor(s)	Legislative District	Award	
29.	Red Salmon Slough		R	Nisqually Indian Tribe	28	\$352,000	Pierce
30.	Titlow Estuary		D	South Puget Sound SEG	28	\$149,000	
31.	Deer Harbor		D	People for Puget Sound	40	\$150,000	San Juan
32.	Thatcher Bay		R	Skagit Fisheries EG	40	\$711,000	
33.	Brown Island		R	Friends of the San Juans	40	\$70,000	Skagit
34.	Bowman Bay		D	Northwest Straits Foundation	10	\$56,000	
35.	Fir Island Farms		D	WA Dept of Fish and Wildlife	10	\$525,000	
36.	Fisher Slough		R	The Nature Conservancy	10	\$800,000	
37.	Milltown Island		R	Skagit River System Cooperative	10	\$237,000	
38.	Swinomish Channel		R	Skagit River System Cooperative	10	\$119,000	
39.	Turner's Bay		R	Skagit River System Cooperative	10	\$150,000	
40.	Wiley Slough		R	Skagit River System Cooperative	10	\$465,000	
41.	Leque Island		D	Ducks Unlimited	10	\$774,000	Snohomish
42.	Matterand Estuary		D	Stillaguamish Tribe	10	\$83,000	
43.	Port Susan Bay		R	The Nature Conservancy	10	\$1,021,000	
44.	Qwuloolt Marsh		R	Tulalip Tribes of Washington	38	\$433,000	
45.	Smith Island		R	Snohomish County	38	\$4,392,000	
46.	Howarth Park Beach		R	Snohomish County	38	\$840,000	
47.	Union Slough		R	Everett Public Works Department	38	\$215,000	Thurston
48.	Edgewater Beach		R	South Puget Sound SEG	35	\$42,300	
49.	Nisqually Estuary		R	Ducks Unlimited	22	\$2,358,000	
50.	Snyder Cove		R	People for Puget Sound	22	\$99,000	
51.	Woodard Bay		P & R	WA Dept of Natural Resources	22	\$312,000	Whatcom
52.	County Feeder Bluffs*		D	Northwest Straits Foundation	10, 24	\$192,000	
53.	Lily Point		P	The Nature Conservancy, Whatcom Land Trust	42	\$2,023,000	
54.	Lower Nooksack Estuary		P & D	Whatcom County Flood Control District	42	\$350,000	
55.	Smugglers Slough		R	Lummi Nation	42	\$2,593,000	

* Multiple locations, not shown on map



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**PUGET SOUND
PARTNERSHIP**

**W
UNIVERSITY of
WASHINGTON**



NORTHWEST STRAITS
marine conservation initiative



King County



WASHINGTON STATE DEPARTMENT OF
Natural Resources
Peter Goldmark - Commissioner of Public Lands



WASHINGTON STATE
DEPARTMENT OF
ECOLOGY



Pierce County
WASHINGTON

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