



PUGET SOUND NEARSHORE PARTNERSHIP

2007 Estuary and Salmon Restoration Program

Protecting and Restoring The Nearshore Ecosystem

A Time for Decision

The Puget Sound is more than just a beautiful backdrop for our lives. Its coves, deltas, and basins support fisheries, an international marine highway, and are the center of a way of life that entices economic giants in technology, aerospace, and service industries to locate in our region. Even as we enjoy the Sound's economic benefits, the natural processes that sustain the Puget Sound are being degraded, putting its health at risk. Rainfall washes poisons and nutrients off the land, contaminating sediment and reducing oxygen levels. Developed shorelines no longer provide the complex habitats that keep our fisheries productive. Many fish, marine mammals, and bird populations that depend on the ecosystem are in critical decline.

The opportunity is here to choose a future for Puget Sound that protects and restores this place for our children. Emerging science helps us understand the Puget Sound ecosystem and its components. Public awareness of the need for action is on the rise. Our Governor and Legislature understand the value of defining a healthy future for The Sound and the resources required to realize it. This is a time for decisions.

The Nearshore Partnership and Ecosystem Restoration

It was the Governor's Puget Sound Initiative that provided the first funds in 2006 for the Estuary and Salmon Restoration Program (ESRP) under the care of the Washington Department of Fish and Wildlife (WDFW). This was a natural fit. In 2001, WDFW partnered with the U.S. Army Corps of Engineers to convene the Puget Sound Nearshore Partnership to build and implement an ecosystem restoration strategy. They were joined by state, federal, local, and tribal governments; academic scientists; ports; non-profits; industry representatives; and citizens.

ESRP was envisioned as not just a grant program, but rather the 'early action' element of that ecosystem restoration effort. ESRP investments would be driven by independent science, capital leveraged through partnership, projects managed to improve efficiency and effectiveness, and the Nearshore Partnership's position as grantor used to build a durable ecosystem restoration capacity leading to a national restoration authority.

This report outlines that vision and progress to date, describing our growing scientific resources for decision making, partnerships for action, and an emerging strategy for effective nearshore ecosystem restoration and protection.





Nearshore areas extend from the tops of coastal bluffs and banks through the intertidal zone to the depth where sunlight continues to support aquatic vegetation such as kelp and eelgrass.

The **Nearshore** extends upstream into coastal watersheds to the head of tide, and encompasses both marine shoreline and estuaries.



Nearshore Ecosystem Assessment and Science

Change Analysis – A Foundation for Regional Restoration

In 2007 the Nearshore Partnership completed a pilot study of King County shoreline to refine a method for describing change in the Puget Sound nearshore. Change analysis compares historic maps to current conditions, allowing us to describe “what has been broken and where”. Change analysis is the groundwork of the Nearshore Partnership’s ecosystem restoration strategy.

The methods developed in the Central Basin are now being “scaled-up” to assess change across the entire Puget Sound Region. This will let us estimate and describe “ecosystem impairment” within a jurisdiction, within a sub-basin, or across the Puget Sound. An interdisciplinary team has been assembled to complete Sound-wide change analysis in 2008. Change analysis sets the stage for development of local and regional protection and restoration strategies that consider landscape patterns and respond to historic impacts.

Best Available Science Underscores the Need to Restore Processes

To develop an effective regional restoration strategy we must understand how components like forests, forage fish, great blue herons, eelgrass, and feeder bluffs fit together as a complex living ecosystem. The Nearshore Partnership identified nine ‘Valued Ecosystem Components’ and hired regional experts to assemble our knowledge in a peer reviewed series of reports. These publications identify complex links between natural resources and the natural ecosystem processes that form and sustain habitats. These white papers are now web accessible (www.pugetsoundnearshore.org), and strengthen our shared knowledge base. Using scientific knowledge in decision making is critical for effective ecosystem protection and restoration.

Adaptive Management – The Tool for Increasing Project Effectiveness

The Nearshore Partnership completed an analysis of project scale adaptive management in the Nearshore to supplement our guiding principles, and as a first step toward a programmatic adaptive management strategy. Working to protect and repair a living ecosystem is a complex task. In some cases our decisions are clear and well informed. In other cases we have much to learn. To improve the effectiveness of investments we need to continuously build our toolkit for designing and evaluating project work. Nearshore Partnership guiding principles shape ESRP investments. Systematic project design followed by evaluation of predicted outcomes improves our effectiveness. Proving the effectiveness of our actions is critical for securing a national ecosystem restoration authority and achieving our goals.





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Success Through Collaboration

State/Federal Collaboration — Foundation of the Nearshore Partnership

In 2001 Washington Department of Fish and Wildlife and The U.S. Army Corps of Engineers signed a General Investigation (GI) cost-share agreement to:

“... evaluate significant ecosystem degradation in the Puget Sound Basin; to formulate, evaluate, and screen potential solutions to these problems; and to recommend a series of actions and projects that have a federal interest and are supported by a local entity willing to provide the necessary items of local cooperation.”

In 2004 the Nearshore Partnership was assembled to build a stakeholder forum and expand the work of the GI into a regional restoration effort. This Nearshore Partnership has assembled policy and technical teams representing 23 regional organizations and an independent interdisciplinary science team. We are committed to protecting and restoring the Puget Sound Nearshore Ecosystem by completing the GI and building ESRP as an early action effort for ecosystem restoration.

Proactively Supporting the Puget Sound Partnership Mission

The Puget Sound Partnership and its Action Agenda is emerging as the hub for regional restoration and protection, and offers the Nearshore Partnership an opportunity to connect its work to emerging efforts in storm water, toxics, waste management and water supply. The Nearshore Partnership fills a vital role in the mission of the Puget Sound Partnership by strongly supporting habitat protection and restoration, the maintenance of biodiversity, and building our capacity for action, contributing to half of the 8 goals defined by the Puget Sound Partnership.



Coordinating Resources to Restore the Nearshore

The Nearshore Partnership brings together diverse restoration and protection resources. ESRP increasingly serves as a clearing house for priority restoration projects.



National Oceanic and Atmospheric Administration's Community-based Restoration Program

has dedicated key staff and entered into a partnership agreement anticipating up to \$2 million in federal match over three years to benefiting on-the-ground community-based nearshore restoration projects. The NOAA partnership has provided 50/50 federal cost share monies for ESRP projects in 2007



U.S. Fish and Wildlife Service's Coastal Program has worked with WDFW since the inception of the Nearshore effort, and has worked hand in hand with Nearshore Partnership to share resources and implement projects of mutual interest. A grant from the Fish and Wildlife Service's Coastal Program helped complete the Landing Package and provide additional resources for project monitoring.



U.S. Army Corps of Engineers' Puget Sound and Adjacent Waters Restoration Program (PSAW) emphasizes funding projects that will generate immediate, critically needed restoration. PSAW has played a critical role in developing several key nearshore restoration opportunities, including Seahurst Park and Skokomish dike removal.



The Salmon Recovery Funding Board (SRFB) adopted Nearshore Partnership criteria to evaluate salmon recovery projects in the nearshore and have worked closely with Nearshore Partnership teams to coordinate review and funding of nearshore restoration directly benefiting salmonids and assist Lead Entities developing salmon recovery projects in the nearshore. More than \$30 million in nearshore salmon recovery projects have been funded through the SRFB over the past five years, supported by technical guidance and evaluation, and in many cases, cost-share from the Nearshore Partnership.



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Northwest
Indian
Fisheries
Commission



NORTHWEST STRAITS
marine conservation initiative



SALMON
RECOVERY
FUNDING
BOARD



Pierce County
WASHINGTON

Pacific Northwest
National Laboratory
Operated by Battelle for the
U.S. Department of Energy



Estuary & Salmon Restoration Program Portfolio

Habitat Protection	Identification		Investment	Area (acres)	Action Area	Grantee
	Negotiation	Acquisition				
Lily Point Acquisition			\$1,750,000	130	San Juan Islands	Whatcom Land Trust
Pilot Point Acquisition			\$500,000	35	North Central Basin	Kitsap Co Parks
Tarboo/Dabob Bay Acquisition			\$448,500	29	Hood Canal	The Nature Conservancy
Normandy Park Acquisition			\$65,000	3	South Central Basin	Cascade Land Conservancy



Protected Shoreline Restoration	Feasibility		Investment	Area (acres)	Action Area	Grantee
	Design	Implementation				
Crescent Harbor Tidal Reconnection			\$417,722	300	Whidbey Basin	Skagit River System Coop
Swinomish Channel Fill Removal			\$120,000	6	Whidbey Basin	Skagit River System Coop
Klinge Levee Setback			\$57,000	15	Hood Canal	Great Peninsula Conservancy
Woodard Bay Restoration Feasibility			\$150,000	350	South Puget Sound	WA Dept of Natural Resources
Snyder Cove Culvert Modification			\$83,833	na	South Puget Sound	People for Puget Sound
Snyder Cove Bulkhead Feasibility			\$25,165	450 ft.	South Puget Sound	People for Puget Sound
Deer Harbor Bridge Replacement Feasibility			\$153,741	15	San Juan Islands	People for Puget Sound
Belfair State Park Berm Removal			\$200,000	6	Hood Canal	Hood Canal Salmon Enhancement Group
Olympic Sculpture Park Monitoring			\$77,712	1	South Central Basin	Seattle Public Utilities

Project Enhancements	Investment	Action Area	Grantee
Olympia Sculpture Park Interpretation	\$35,500	South Central Basin	Seattle Art Museum
Skokomish Nutrient Study Enhancement	\$68,575	Hood Canal	Department of Natural Resources





Feasibility Design Implementation

River Delta Restoration	Investment	Area (acres)	Action Area	Grantee
Nisqually Refuge Restoration	\$2,000,000	700	South Puget Sound	Ducks Unlimited
Red Salmon Slough Revegetation	\$48,188	45	South Puget Sound	Nisqually Indian Tribe
Red Salmon Slough Levee Removal	\$65,000	45	South Puget Sound	Nisqually Indian Tribe
Dungeness Estuary Marsh Restoration	\$207,000	18	Straits of Juan de Fuca	Jamestown S'Klallam Tribe
Port Susan Bay Dike Removal	\$191,325	150	Whidbey Basin	The Nature Conservancy
Little Quilcene Estuary Reconstruction	\$200,000	26	Hood Canal	Hood Canal SEG
Salmon Creek Fill Removal	\$360,000	11	Strait of Juan de Fuca	North Olympic Salmon Coalition
Smugglers Slough Tidal Reconnection	\$438,000	640	San Juan Islands	Lummi Nation
Duckabush Robinson Road Levee Removal	\$57,600	3	Hood Canal	Hood Canal SEG
Big Quilcene Ring Dike Removal	\$40,500	3	Hood Canal	Hood Canal SEG
Qwuloolt Marsh Channel Restoration	\$433,306	360	Whidbey Basin	Tulalip Tribe
Skokomish West Bank Dike Removal	\$940,380	108	Hood Canal	Mason Conservation District
Wiley Slough Dike Removal	\$307,027	175	Whidbey Basin	Skagit River System Coop
Union Slough Dike Breach	\$215,000	43	Whidbey Basin	City of Everett
Leque Island Feasibility Study	\$76,500	115	Whidbey Basin	Ducks Unlimited, Inc

Project Funding Summary Budget

The following table summarizes state appropriations and federal awards resulting in funding under the ESRP Program. Legislative support has resulted in two funding rounds and funding of 30 competitively selected projects. Under 5% of total funds remain unobligated to match NOAA's Community-based Restoration Program for a final distribution in 2008.

Capital Investment

2006 Supplemental Appropriation	\$ 2,500,000
2007-09 Capital Appropriation	\$ 12,000,000
NOAA CRP Partnership FFY 2007	\$ 350,000
Total	\$ 14,850,000

Spending Plan

2006 Competitive Distribution	\$ 2,500,000
2007 Competitive Distribution	\$ 7,232,580
Proviso for support of PSNERP Investigation	\$ 723,000
Proviso for specific projects	\$ 3,746,875
2008 Competitive Distribution (State)	\$ 647,545

Legend

Area numbers represent acreage unless otherwise labeled. Colored boxes indicate project status.

- Phases with dark green have been completed
- Phases in light green are the object of current funding efforts
- Phases in white are future funding targets

Feasibility:

Assessment of site conditions and ownership and development of a preferred conceptual plan based on clear restoration goals.

Design:

Development and permitting of specific detailed construction plans and engineering.

Implementation:

Contracting and implementation of treatments and evaluation of success.

Early Action for Ecosystem Restoration

Ecosystem restoration requires that we do more than just fund projects – we must in fact restore ecosystems. We must pick the best projects in the best places, consider protection and restoration alternatives in the context of the whole ecosystem, and evaluate the effectiveness of our actions. While ESRP investment meets a critical short-term need for project funding, it is the opportunity for building toward ecosystem restoration. Three strategies are being developed to meet this opportunity:

1) Principled and Transparent Project Selection

New projects are evaluated by a diverse review panel of peers, based on a set of transparent criteria developed in the Nearshore Partnership. The criteria favor projects that demonstrate alignment with the Nearshore Partnership's science-driven guiding principles. Our criteria are re-evaluated as our portfolio matures and knowledge changes. Proponents use conceptual models to predict how project actions will result in improved and sustained ecosystem function at a site. That prediction is used as the starting point for evaluating project performance. Evaluation of project performance will be used to drive future project selection.

2) Funding Throughout the Project Lifecycle

ESRP funds all phases of project work, with the goal of causing restoration rather than completing funding actions. As selected high-priority projects show progress and gather resources, we invest toward their implementation. Our intent is to maintain a 'conveyor belt' of high quality restoration and protection actions while holding proponents accountable for incrementally developing and delivering projects that provide sustained public benefits. We don't consider funding successful until it results in a beneficial on-the-ground outcome.

3) Strategic Investment in Learning Opportunities

ESRP invests in project monitoring to improve specific practices and evaluate outcomes. We monitor projects to solve problems. Effectively measuring ecosystem response to restoration actions requires planning and an interdisciplinary perspective. We must identify potential weaknesses in restoration efforts before funding and then use project work to "learn by doing". Two project types are the current focus of investment: large river delta dike removal and logging industry debris removal. Emerging efforts will focus on bulkhead modification. ESRP coordinates oversight from the Nearshore Science Team with on-the-ground experience of practitioners to build project design and evaluation strategies that solve real world restoration problems with scientific rigor.





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Building A Portfolio

Over time careful planning results in a restoration portfolio. ESRP early actions have painted an emerging picture of the highest priority actions: dike removal in river deltas, acquisition of the few remaining large undeveloped shoreline parcels, and restoration of tidal connections in “pocket estuaries” believed critical for Chinook salmon recovery.

1 Protecting Lily Point

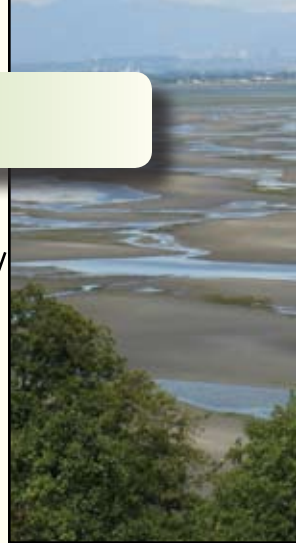
Whatcom Land Trust will preserve a 90-acre parcel of undeveloped marine shoreline and 40 acres of tidelands on the southeast corner of Point Roberts, Whatcom County including 4,130 feet of natural shoreline. The site’s exceptional feeder bluffs supply sediment to two beach systems and its relatively large, undeveloped, and natural shoreline, as well as its mature forests, eroding cliffs, and ecologically rich tidelands give this project regional and international significance as a nearshore reserve with benefits for diverse species.

2 Snohomish River Delta: Restoring Qwuloolt Marsh

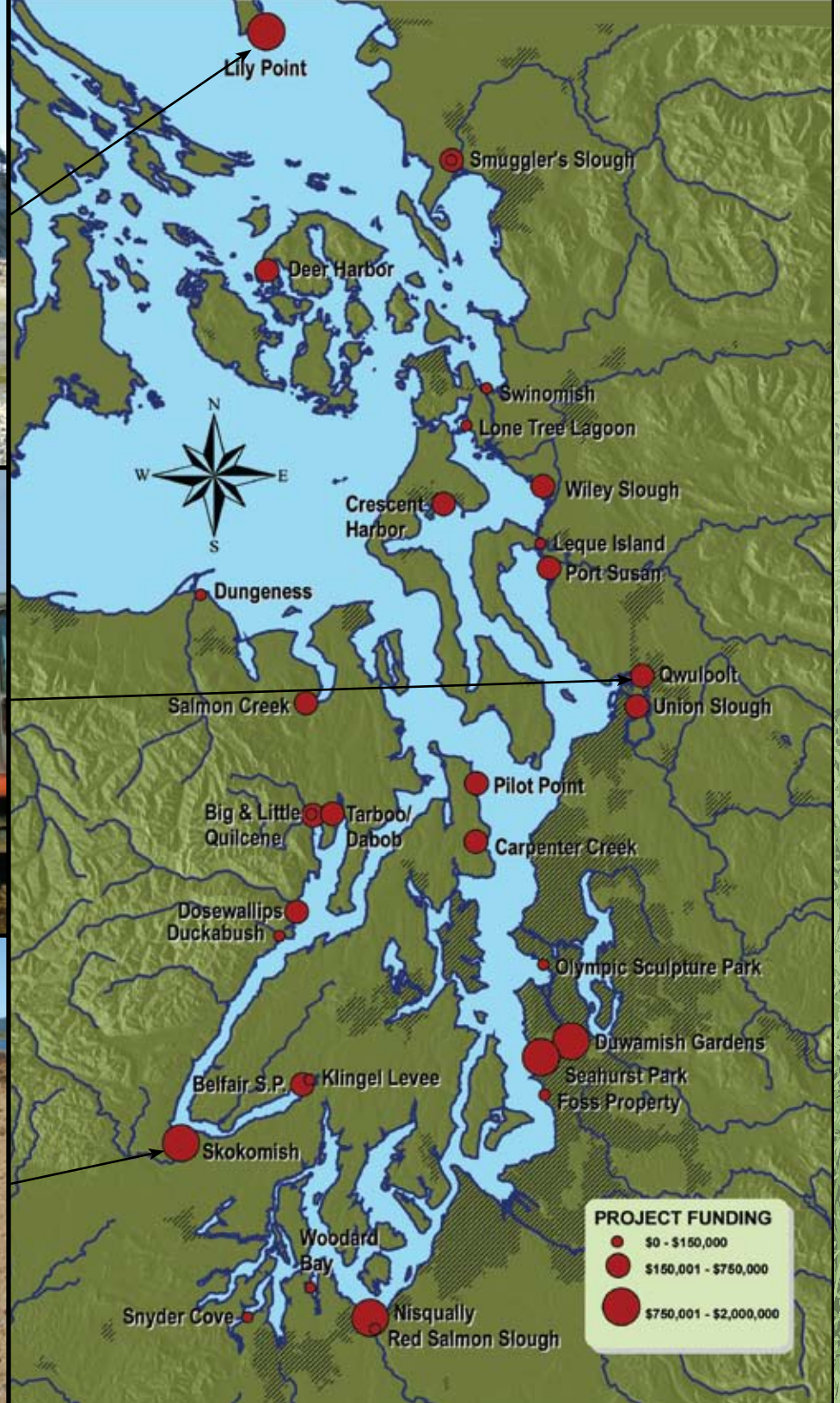
The Qwuloolt Restoration Project represents a broad interagency and community effort to restore more than 360 acres of intertidal marsh in the lower Snohomish River floodplain. Removing the Qwuloolt levees will restore 2% of the estuary’s intertidal marsh, side channel, and stream habitats that were lost in the 20th century. The project contributes to the health of eight salmonid species, including threatened Chinook and bull trout, by improving water quality, restoring estuary rearing habitat, and re-establishing unrestricted access to 16 miles of upstream spawning and rearing habitat. Using 2006 ESRP funds the Qwuloolt Project relocated stream channels to prepare the site for levee removal. The completed project will enhance opportunities for public access, education, and wildlife-oriented recreation.

3 Skokomish River Delta: Removing the Old Nalley Dikes

The Nalley Slough Dike Removal project restored 108 acres of intertidal wetlands to the former Nalley Farm in the Skokomish River estuary, once the largest contiguous salt marsh complex in Hood Canal. Project partners removed approximately 3,650 feet of dike, refilled borrow ditches, and removed an elevated road network. Restored tidal inundation has already improved habitat for federally-listed summer chum and Chinook salmon, migratory birds, and shellfish, and is expected to relieve flooding in the mainstem Skokomish River by improving sediment transport. Researchers are working to learn how marsh restoration may affect the low oxygen conditions plaguing Hood Canal by removing excess nitrogen and carbon from the water.



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Into The Future

Contributing to the Puget Sound Partnership's Action Agenda

The Nearshore Partnership is a regional coalition built to support the use of science, identify priority restoration needs, implement early action projects, and design a regional ecosystem restoration strategy. The Nearshore Partnership's structure provides a platform from which we can coordinate federal, state, local, tribal, and private funds, working with the Army Corps of Engineers to "scale-up" nearshore ecosystem restoration throughout Puget Sound. ESRP provides a laboratory for implementing and learning from early actions to support regional ecosystem restoration. The Nearshore Partnership will continue its collaboration as the Puget Sound Partnership builds capacity and momentum, lending our restoration expertise to their critical mission. We anticipate that our Puget Sound wide analysis and assessments will become an integral part of the Puget Sound Partnership's Action Agenda.

Building Stakeholder Capacity

The Nearshore Partnership provides new technical resources and tools available to the broader Puget Sound community, building a base of shared knowledge. ESRP has led local workshops to share and discuss strategies for restoration project development and evaluation, and is taking a leadership role in fostering collaboration and technology transfer between projects and grantees. Lead Entities and MRCs have worked with the Nearshore Partnership to catalog over 600 potential nearshore projects. The Nearshore Partnership is working closely with the development of the next generation project planning tool, WDFW's Habitat Work Schedule – a web-accessible database. ESRP will continue to serve stakeholders by serving as a nexus for combining funding sources to complete high priority projects. In 2008, The Nearshore Partnership's work will increasingly include stakeholder input as we move from scientific assessment to regional planning, and shift from opportunistic funding to strategic investment.

Adaptively Managing Restoration

The Estuary and Salmon Restoration Program (ESRP) is disbursing \$14,850,000 to 30 projects that will affect over 3,000 acres of nearshore. These projects provide opportunities to improve design and construction methods and evaluate assumptions made in selection. ESRP has funded additional technical support that will take advantages of these opportunities. This has included additional monitoring studies to advance our collective understanding of how to restore nearshore ecosystems. Collaboration with the Nearshore Science Team has helped us incorporate new scientific understanding, while helping answer priority information gaps that limit restoration effectiveness.





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