



Puget Sound RESTORATION FUND

OUR MISSION

To achieve on-the-ground restoration of habitat and native species in Puget Sound by focusing on action not politics.

OUR GOAL

To mobilize funding and support from diverse sources to complete priority projects.

PSRF Receives a \$1,000,000 Bequest

In 2007, PSRF received a much-appreciated one million dollar bequest which will be used to achieve more recovery actions on the ground – now and in the future. The bequest, whose donor requested to remain anonymous, represents an enormous step forward. With this gift, PSRF can expand the scale and diversity of restoration efforts, improve the capacity of the organization and contribute more significantly to the vision of a restored Puget Sound. In October 2007, the PSRF Board of Directors approved the following investment and distribution options to strengthen our mission and honor the memory and generosity of our donor:

- Invest a portion of the bequest in specific projects in order to jumpstart new/major program areas, build on some of our successful signature projects, and increase our ability to leverage funds from other sources.
- Increase PSRF's organizational capacity by hiring a website manager and a part-time development director to assist with fundraising and grant-writing.
- Establish an endowment to protect a portion of the principle, generate interest income, and provide security for the organization in years to come.

\$1,000,000 Bequest Continued

Specific Project Investments

ABALONE

Spur additional abalone recovery actions by producing larval abalone for experimental outplant in 2008, rearing juvenile abalone for outplant in 2009/10 and launching an outreach campaign to alert the broader community. WDFW predicts extirpation of northern (pinto) abalone as early as 2010. Recognizing that natural recovery of abalone populations will not be possible without human intervention, several restoration strategies are currently being conducted on a pilot scale. Preliminary successes identifying critical disease and genetic issues associated with a hatchery based restoration program and conducting a pilot juvenile outplant have laid the groundwork for larger-scale recovery actions. Partners include Washington Department of Fish & Wildlife, Taylor Shellfish Farms and University of Washington.

EELGRASS/ShORELINE RESTORATION

Identify a large-scale eelgrass or shoreline restoration project that PSRF could help implement in collaboration with others. Much has been done to advance the science and success of eelgrass restoration; Ron Thom at Batelle and others are on the cutting edge. The timing is also right for projects that remove shoreline structures and restore natural processes. Project ideas are welcome.

OLYMPIA OYSTERS

In addition to enhancing another 5.5 acres of native oyster habitat in Liberty Bay in partnership with The Nature Conservancy, NOAA and others, PSRF is mounting a scientific expedition to the west side of Vancouver Island to map

and characterize an extensive, untouched Olympia oyster bed in July 2008. Knowing what an untouched native oyster bed looks like and how it functions is critical to successful restoration of Olympia oysters up and down the west coast. PSRF is currently working with Malaspina Centre for Shellfish Research to ready the research boat and fine tune the travel logistics. Happily, there is no shortage of interested scientists and chroniclers clamoring to join (though space is highly limited). One and all, we are looking forward to this massively underfunded, whimsically embraced adventure.

LAUNCH A NEW COMMUNITY SHELLFISH FARM

PSRF is busily working to identify a bay or inlet where current or future harvest is threatened from nutrient pollution and where an infusion of community interest could help spur water quality improvements.

Please contact PSRF, if you are interested in matching any of our investments or leveraging additional public and private funds for the specific projects enumerated above. Our goal is to triple or quadruple these investments in order to achieve larger-scale restoration. Private funds can do wonders when it comes to obtaining public dollars and pushing for results.





2nd Annual West Coast Oyster Workshop

In August 2007, PSRF co-hosted the 2nd Annual West Coast Native Oyster Workshop along with NOAA, UC Davis, Taylor Shellfish and the Squaxin Island Tribe. Scientists, resource managers and restoration practitioners from California, Oregon and Washington met to swap techniques, results and long-awaited news on the genetic structure of west coast populations. Highlights of the workshop included field trips to North Bay and Frye Cove to see, respectively, the largest known assemblage of natural Olympia oysters in Puget Sound and a native oyster enhancement site on private and public tidelands in Frye Cove, Eld Inlet.

There was much skepticism leading into the trip from our California counterparts regarding previous reports of oysters abundantly strewn on North Bay tideflats. It just didn't seem possible judging from the rock-setting habits

of native oysters in San Francisco and Tomales Bays. Fortunately for us, the trip proved eye-opening for all and we were vindicated by numerous observations of oysters comfortably nestled in soft substrates. Thanks to Brady Blake with WDFW for leading the tour of North Bay and Retired Colonel Ian Larson and Jim Durham for hosting our visit to Frye Cove – not to mention the restoration project itself. Thanks also to Taylor Shellfish for serving a sumptuous dinner at Xinh's Clam & Oyster House and to Chelsea Farms and Calm Cove Oyster Co. for serving and shucking cocktail oysters.

Above: Researchers and geneticists from California and Oregon discuss native oysters with Tideland owner, Retired Colonel Ian Larson.



Fall Harvest at the Henderson Farm

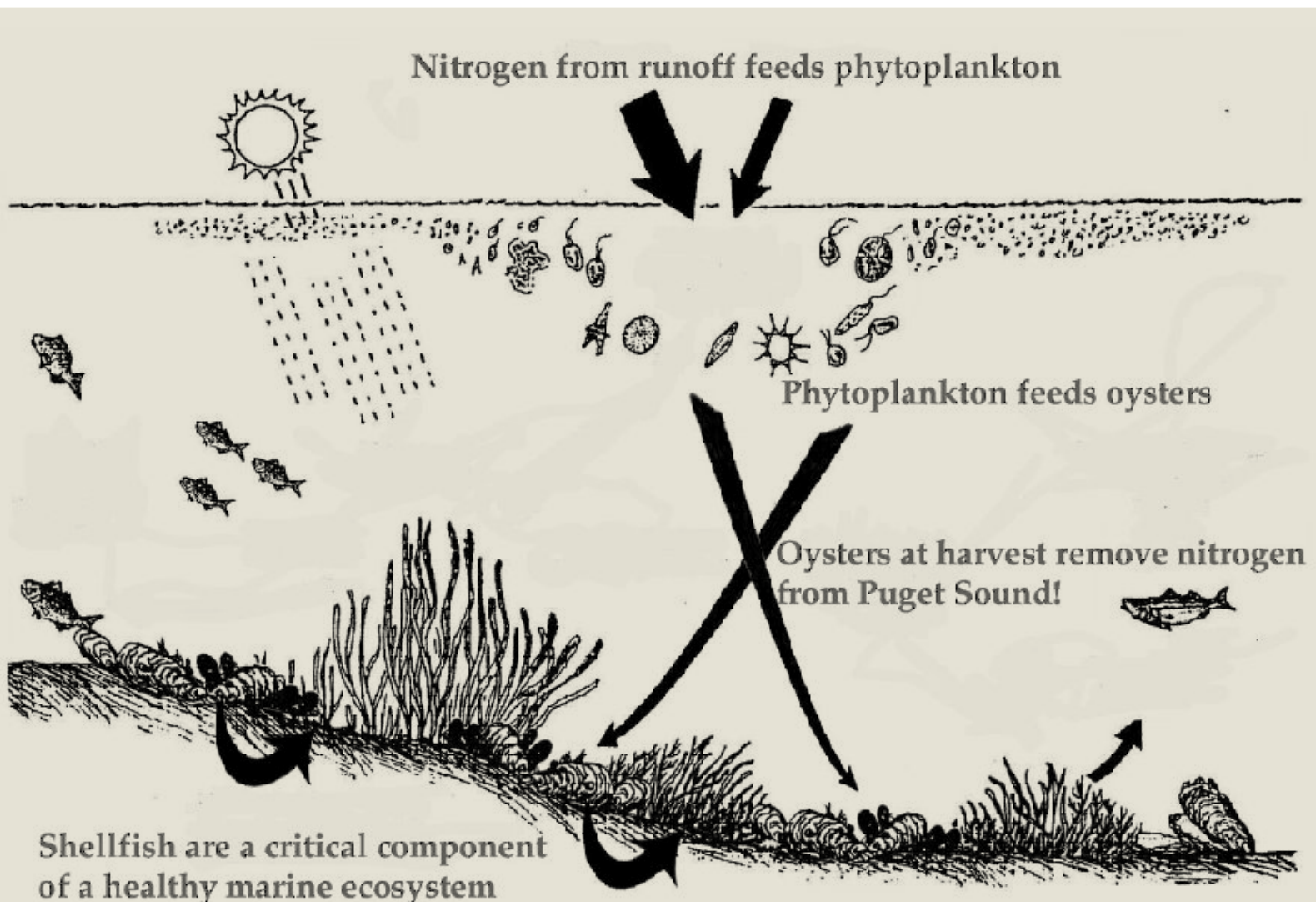
In October 2007, a veritable crowd converged on the Henderson farm to harvest oysters for upcoming events, strategize about clean water efforts and chow down on a gourmet lunch provided by Elliott's Oyster House. Truth be told, none of us felt that we worked nearly hard enough to deserve the lunch. That being said, we of course ate it anyway in celebration of the primal act of harvest that connected us to the Inlet, to each other and to all those who have harvested before us. Over 30 people participated, including army veterans recently returned from the Iraq war, an enthusiastic crew from Elliott's Oyster House, residents from up and down the Inlet, and various and sundry volunteers. We hauled, scraped and generally fussed over the condition of our community-grown oysters while exchanging names and stories. In addition to the Oyster New Year event, Henderson oysters were served at a WSU event generously hosted by Chuck Cody and the College of Sciences. It was attended by many of the people who have made our lease at Meyer's Point possible. The oysters - a rare treat at this inland oasis in the Palouse hills - were preferred cooked on the barbecue (thank you very much) though a few brave souls ventured into the raw variety.

Go Forth & Slurp...For the Health of Puget Sound!

- Every time we eat a locally grown oyster, we remove nitrogen from the Sound
- A dozen oysters a day keeps your Nitrogen contribution at bay.

Here's how it works: Oysters and other bivalve shellfish are filter feeders. When clams and oysters feed on phytoplankton, they remove nitrogen from the water column and increase light penetration. When we in turn harvest those clams and oysters we remove nitrogen from the system. Eating shellfish therefore provides a felicitous means of reducing our nitrogen footprint.

Each small oyster contains approximately 0.5 to 1 gram of nitrogen. Each human contributes approximately 10 grams of nitrogen a day (or 3,800 grams a year). Slurping a dozen oysters a day would therefore come very close to mitigating our individual nitrogen contribution for the entire year. Clearly, we've got a lot of slurping to do. Lucky for us, there are plenty of locally-grown oysters with which to assuage both our stomachs and our conscience. *(Thanks to Dr. Joth Davis with Baywater, Inc. for assistance with these calculations.)*





Habitat Enhancement

It was a banner year for native oyster habitat projects at the Puget Sound Restoration Fund; we took on five different habitat enhancement projects in 2007. They were located all over Puget Sound and include some of our largest efforts to date. In total, our labors enhanced nearly 4 acres of tidelands with surrogate native oyster habitat. The Nature Conservancy of Washington played a significant role by championing our three largest projects. In central Puget Sound, we worked on public tidelands owned by Washington Department of Fish & Wildlife and Department of Natural Resources in Liberty Bay (Scandia and Dogfish Bay) and private tidelands on Vashon Island (Raab's Lagoon). In the south Sound we worked on private and State tidelands in Eld Inlet (Frye Cove) and Henderson Inlet (Woodard Bay).

We found many of the habitat criteria associated with populations of the native oyster on beaches in these locations. We do this with a variety of assessments to determine whether a particular location is a good candidate for consideration as a habitat enhancement site. The habitat enhancement treatment is ideally employed as a stock-rebuilding technique in areas where structure is limited, but where recruitment potential, community structure and some habitat requirements for native oysters exist. Without some form of complex structure on a tideland that lies exposed above beach sediments, native oyster larvae in the water column choose to move on. A habitat enhancement treatment provides the area with an emergent oyster setting structure to catalyze natural recruitment. Over time, these enhancements have proven effective by significantly increasing local native oyster stocks and restoring effective (viable) populations to several locations in Puget Sound.

It took most of the spring and summer months to schedule the enhancements, with a host of contractors, partners and volunteers contributing generously to various aspects of project implementation. While we were unable to complete all the treatments before the native oyster set in 2007, each of these enhancement plots will be ready and waiting in 2008! Our 2+ acre enhancement on the Scandia tidelands in Liberty Bay was spread in time to receive some oyster in late June; a fall survey of the project estimated over 40,000 new juvenile oyster recruits! Taylor Shellfish Farms and Hama Hama Oyster Company supplied the projects with the 2,300 cubic yards of oyster shell needed. While some of our efforts were measured in arm loads and others in metric tons, as a collection they represent a significant step forward in both the recovery of this native species and in our knowledge of how best to facilitate that recovery.

Thanks to the following for their generous support: The Nature Conservancy, Environmental Protection Agency, U.S. Department of Agriculture, NOAA Community-based Restoration Program, U.S. Navy, Suquamish Tribe, Squaxin Island Tribe, Washington Department of Fish & Wildlife, Washington Department of Natural Resources, The Russell Family Foundation, Hood Canal Oyster Company, King County, Kitsap County, Puget Soundkeeper Alliance and tideland owners (public and private).

Thanks also to Dr. Jonathan Davis with Baywater, Inc. for serving as our lead scientist on enhancement projects in Liberty Bay. We'll look forward to sharing his monitoring results with you in the future.



Oysters for Salmon

This was the catchy title for a two-year pilot project in Eagle Harbor on Bainbridge Island. The recent loss of documented eelgrass beds in Eagle Harbor is understood to be a result of increased turbidity caused by primary production blooms. Nutrient pollution is once again identified as the culprit.

The objectives of the pilot were diverse and included public outreach on nutrient pollution, water quality monitoring within Eagle Harbor and, most notably, the use of Pacific oysters as biofiltration units on docks and marinas in the harbor. The project lead was another local nonprofit, EcoSolutions; the City of Bainbridge Island, the Suquamish Tribe, Kitsap County and the National Fish & Wildlife Foundation were also partners in the effort.

The project was very popular in the local community and piqued the interest of many shoreline residents, volunteers and visitors. Maintaining the 300 oyster cages proved to be a significant challenge that required a surprising amount of engineering and elbow grease. Fortunately for us Bob Selzler was around to save the day on most occasions. In the end, the pilot project enabled some productive discussion on the path and scope of future efforts to reduce and mitigate nutrient pollution in Eagle Harbor and helped develop a water quality baseline dataset for Eagle Harbor.

Study Concluded: Community Level Effects of Oyster Enhancement

Despite the body of knowledge that exists on the effects of habitat complexity on the marine community, relatively little work has been done on the effects of oyster placement on invertebrate assemblages, according to Jeff Cordell, a University of Washington fisheries scientist. While we are working to increase stocks of the native oyster in Puget Sound, we also want to understand the effects of our practice on marine invertebrate communities in the intertidal. In this project Cordell's group was contracted to evaluate paired intertidal plots at two sites in Liberty Bay near Keyport, Washington, both before and after the placement of Olympia oyster seeded cultch. The questions we asked the UW to examine were, first, if cultch placement increases numbers and diversity of epibenthic invertebrates; and second, if the observed increases include juvenile salmon prey species. At the conclusion of the two-year study, we now have our answers!

According to Jeff Cordell, there were statistically significant increases in invertebrate densities in the oyster plots as compared to the no oyster plots for many of the taxa examined, including harpacticoid copepods, and the dominant salmon prey harpacticoid, *Tisbe* sp. We can conclude from the study that the addition of cultch shell resulted in an increased abundance of total epibenthic organisms, including salmon prey species at the two beaches studied.



Shellfish Gardening

Celebrating a successful second year of shellfish gardening, participants gathered at Seabold Hall on Bainbridge Island in September and feasted on geoduck sashimi, geoduck sevicehe, clam chowder made with local clams and raw oysters from Lemolo Beach, Agate Passage and Thorndyke Bay. Brian Allen, our regional geoduck grower and PSRF staff member, brought ducks from his farm and demonstrated how to peel and prepare them – much to the fascination of all involved.

This year's marine gardening program involved 21 farming sites; nine gardeners who installed their first gardens in 2006 and 12 gardeners who were new to the process and eager to get going. Second year gardeners were able to bring in oysters from their very own gardens – and learn that, yes, all oysters are covered with barnacles, seaweed and other marine flora and fauna. In fact, what you get in the restaurants and market place has already been painstakingly hand cleaned!

This year we were able to plant bags with Native oysters as well as Pacific oysters. The natives will take longer to reach a nice harvestable size, but the wait will be well worth it!

In 2008 PSRF will be hosting a seed sale on Bainbridge Island where budding shellfish enthusiasts can pick up gardening gear, seeds and planting instructions. We will continue our full-service hands-on gardening project for the cost of \$275, but will add the self-serve program for the do – it – yourselfers among you.





An Update on Paralytic Shellfish Poisoning—PSP

Shellfish samples collected in numerous areas around Puget Sound showed record high levels of PSP in 2006. As we headed into 2007, harvest areas were closed for first time ever with winter sport closures in both January and February. This did not bode well for the upcoming 2007 season. However, to our surprise, this past year PSP levels did not follow the pattern of increasing incidence that we anticipated. In fact, Jerry Borchert with the Washington Department of Health said that 2007 showed “the least amount of toxins he has seen in many years,” representing the total opposite of record PSP levels set in 2006.

So, what happened? That’s what researchers would like to know. HAB’s, or Harmful algae blooms, are occurring more frequently and for longer durations on a global scale. This has a huge impact on local economies, since commercial growers cannot harvest their product during periods of harmful algal blooms. Researchers from all over are beginning to put their heads together to figure out early detection systems and understand what triggers these blooms to come and go. Meanwhile, we can hope for another quiet season for PSP in 2008 and a big season for clam diggers around the Sound.

Thanks to our PSP volunteers and to state and local health departments for supporting ongoing sample collection.



Rick Peters

In September, PSRF hired Squaxin Island Tribal member **Rick Peters** to assist with native oyster and shoreline restoration projects. After delivering a tribal blessing and welcome at the West Coast Native Oyster Restoration Workshop, Rick accepted the job by saying "any chance to rebuild my heritage is awesome."



Gordon Derr Thanks Giving Campaign Generates Over \$14,000 in Donations

A thousand thanks to Gordon Derr, a law firm in Seattle, for their beautifully inspired and executed fundraising campaign which generated \$14,277 in donations to PSRF. Each year, Gordon Derr selects three nonprofit organizations and then solicits and matches donations on their behalf as part of an annual Thanks Giving Campaign. PSRF is honored to have been one of the select beneficiaries in 2007. Donated funds will be put to wise and enterprising use to help restore the health of Puget Sound.



Drayton Harbor

The Drayton Harbor Community Oyster Farm is enjoying a busy season aboard the "Beauty," our make-shift oyster processing barge anchored in Drayton Harbor. We have favorable tides in the wee hours of the night and morn for picking and pondering the wonders of Mother Nature. And, thanks to ongoing support from Whatcom County and Hirsch Consulting Services, there are also numerous monitoring activities underway to pinpoint and fix specific sources of pollution in the watershed.

Beginning in 2008, there are proactive programs to address livestock waste on small farms and improve inspection, operation and maintenance of septic systems. Thanks to good work on the local level by Geoff and others, the Drayton Harbor watershed has been designated as the only marine recovery area in Whatcom County's Septic Management Plan. This may enable us to improve water quality and adjust our rain closure upward in the future.

In the meantime, a thousand thanks to Geoff Menzies and a host of volunteer farmers for delivering the best of Drayton Harbor to our steady buyers. Buyers include Vis Fisheries, The Willows Inn, Community Food Co-op, Hannegan's Seafood, Blau Oyster, the Bellingham Farmers Market and the many devoted slurpers who traipse down to the dock on Saturday morning for a little taste of heaven – locally produced. As Bob and Marcy Toby wrote in a recent letter to the editor, "We don't do this because we are oyster lovers, or because harvesting oysters locally is overwhelmingly important. We do it because having Drayton Harbor safe enough to harvest oysters is overwhelmingly important."



MANY THANKS TO THE FOLLOWING ENTITIES FOR YOUR 2007 SUPPORT

Annual Fund donors
Aquatechnics
Bainbridge Island shellfish gardeners
Baywater, Inc.
Belfair State Park
Budd Bay Embroidery
Calm Cove Oyster Co.
Chelsea Farms
City of Bainbridge Island
Cox & Lucy, CPAs
Drayton Harbor farmers
Eagle Harbor dock and marina owners
EcoSolutions
Elliott's Oyster House
Environmental Protection Agency
Fukuyama Hironaka Taxonomic & Environmental Services
Gallatin Group
Geoff Menzies, the Incomparable
Gordon Derr Law Firm
Hama Hama Oyster Co.
Henderson Inlet farmers
Henderson Inlet shellfish gardeners
Hirsch Consulting Services
Hood Canal Oyster Co.
Jeff Cordell Consulting Services
King County
Kitsap County
Marine Resources Committees – Skagit & Jefferson
National Fish & Wildlife Foundation
NOAA Community-based Restoration Program
Northern Economics
Olympia Oyster Co.
Pacific Aquaculture Caucus
Pacific Coast Shellfish Growers Association
Pacific Shellfish Institute
Private tideland owners
Puget Soundkeepers Alliance
Shell Puget Sound Refinery
Snohomish County
Taylor Shellfish Farms
The Nature Conservancy
The Russell Family Foundation
Thurston County
Tribes – Suquamish, Squaxin Island, Jamestown, Samish, Lummi
UC Davis
U.S. Department of Agriculture – WHIP
U.S. Navy
Washington Department of Fish & Wildlife
Washington Department of Health
Washington Department of Natural Resources
Washington State Combined Fund Drive
Washington State University
Whatcom County
Wildlife Forever Fund



VOLUNTEER OPPORTUNITIES

March 12

Collect invasive oyster drills and their egg cases in Liberty Bay to reduce predation at our native oyster enhancement site.

April 19-21

Remove abandoned long lines in Liberty Bay to restore 2.6 acres of intertidal habitat. Derelict gear includes approximately 12,586 pec pipes and 37,752 feet of polypropylene line

PLEASE CALL THE PSRF OFFICE

(206) 780-6947 or email betsy@restorationfund.org to volunteer and get more information.

Director's Cut

With our 10th Anniversary behind us, it is very gratifying to begin 2008 with a bevy of interesting projects – old and new - and the resources with which to pursue them on a larger scale. Abalone, oysters, intertidal restoration, habitat enhancement and shorelines are all on the table – as are plenty of celebrations along the way in which to enjoy the fruits of clean water. Generous donations to PSRF's 2007 Annual Fund and the Gordon Derr Thanks Giving Campaign have provided a strong operating base for the coming year for which we are truly grateful.

To mark the beginning of our second decade, PSRF is honored to have received a \$1,000,000 bequest which we intend to invest in an enterprising suite of projects, some targeted capacity-building and a stronger foundation for the future. PSRF will leverage these funds to the greatest degree possible in order to achieve more recovery actions on the ground, advance regional efforts to recover the health of Puget Sound, and honor the memory of our donor.

Please join us in building our war chest. A marriage of private resources, the right mix of people and a strong vision could produce some powerful magic.

Betsy Peabody
Executive Director