

Olympia oyster Enhancement in Puget Sound 1998-2010



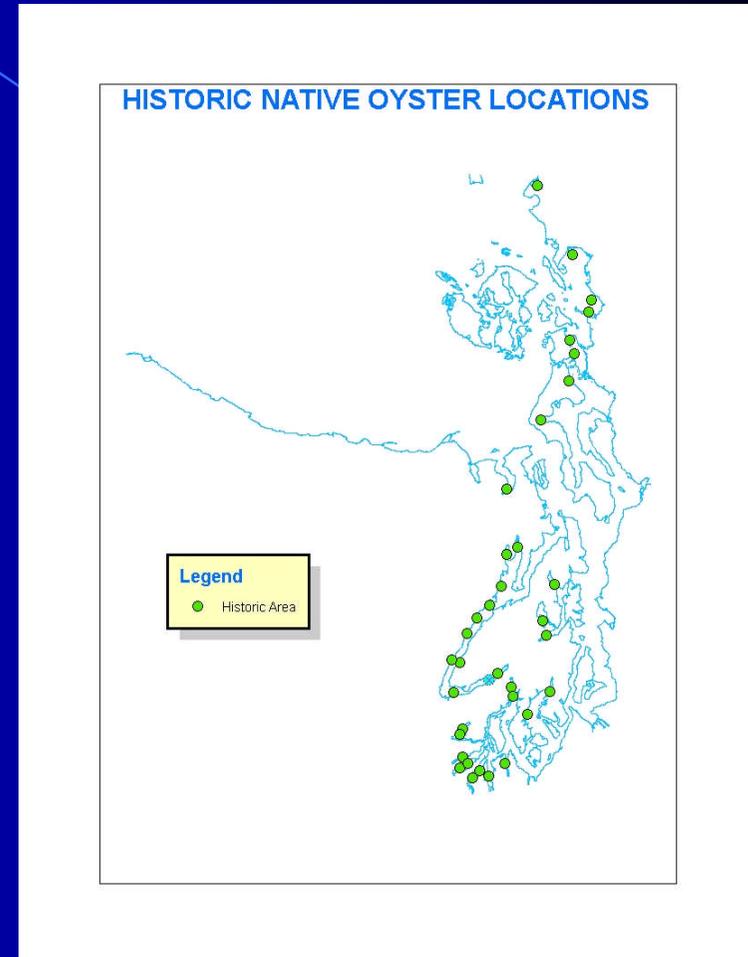
Betsy Peabody, Puget Sound Restoration Fund

www.restorationfund.org

(206) 780-6947

Status

- Less than 4% of historic core populations remain (due to overharvest, habitat loss, pollution).
- Sparse numbers exist throughout historic range.
- Globally, 85% of oyster reefs have been completely lost.



Goals

- Re-establish dense, self-sustaining oyster beds that provide ecosystem services.
- Recover 100 acres of native oyster habitat by 2020.

Natural Olympia oyster bed



Ecosystem Services

- Provide food & habitat for fish, crabs, birds
- Filter and cleanse water
- Support fisheries
- Maintain healthy estuaries



2010 - 2011 Native Oyster Re-building Sites



- ▲ Bulk shell habitat enhancement
- Hand-placed shell enhancement
- Hatchery produced seed outplant
- ★ Natural set seed



Dogfish Bay ●
Dyes Inlet ●
Seattle

Puget Sound

Squaxin Island ▲
Totten Inlet ★
Henderson Inlet ■
Budd Inlet ▲
Olympia

Progress to date

- Enhanced 30 acres of native oyster habitat
- Surveyed natural aggregations
- Developed genetic protocols to produce genetically diverse seed.
- Developed draft 10-year business plan

Partners

- Washington Department of Fish & Wildlife
- Tribes (Suquamish, Skokomish, Squaxin, Lummi, Jamestown S'Klallam, Samish, Swinomish)
- Commercial Growers (Taylor, Seattle Shellfish, Oly Oyster Co., Little Skookum, Hood Canal Oyster Co., Hama Hama)
- NOAA Community-based Restoration Program
- Public and Private tideland owners
- The Nature Conservancy
- EPA
- Marine Resources Committees
- U.S. Navy
- National Fish & Wildlife Foundation
- Local Governments (King, Skagit, Jefferson, Kitsap, Clallam)
- Washington Department of Natural Resources
- Reporters (newspapers, magazines, TV, radio)

Suitable sites

- Relatively firm substrate
- High degree of protection
- Constant source of water
- Mixture of fresh and saltwater
- Historic presence
- Remnant population



Typical Intertidal Habitat

- Deep tidal lagoons ~ artificial & natural
- Moist, flat seepage areas or seeps
- Protected coves
- Tidal pools behind sand berms
- Mix of substrate ~ shell, gravel, sand, silt
- Channels draining pools, ponds, lagoons
- Lower fringe of Pacific oyster beds
- Structure in otherwise soft habitats



Seepage Habitat ~ Tidal Pools



Artificial Lagoons & Drainage Channels



Lessons Learned

- Locations with remnant oysters are oftentimes NOT pristine environments
- Pacific oysters provide a refuge/settlement surface
- Water retention and larvae are key factors

Habitat Enhancement Has Emerged as Key Strategy

- Enhance substrate with shell near existing populations where substrate is too soft to support settlement
- This enables remnant population to recolonize historic areas AND
- Maintains genetics of local population

Habitat Enhancement



Liberty Bay Raab's Lagoon



Monitor Ecological Services



Search for Remnant Populations



Forge the Oyster Salmon Connection

- Oyster enhancement in the lower intertidal is the missing link in salmon recovery efforts
- Quantitative monitoring data on ecological benefits of oyster restoration is essential to securing money

Restoration Imperative

- Shellfish reefs the most imperiled marine habitat on earth.
- Native oyster beds provide invaluable ecological services.
- Restoration techniques have been tested.
- Partnerships make larger-scale restoration possible.



Vision



Cory and Catska Ench

Abundance AND Local Food Production

