

RESTORING PRIVATE RESIDENTIAL SHORELANDS: A CASE EXAMPLE

Brenda Padgham¹ and Jim Brennan²

The Powel Shoreline Restoration Project was initiated in 2008, when the Powel family made a request to the Bainbridge Island Land Trust (BILT) for advice on rebuilding failing bulkheads on their shoreline property. The Powel property, located on Bainbridge Island in Puget Sound, WA, consists of two parcels surrounded by approximately 1/4-mile of armored marine shoreline (See Figure 1). Extensive shore development and shore armor (bulkheads) have been identified as major causes of marine habitat loss and degradation. The project focuses on recreating shallow intertidal habitat important to juvenile salmonids, particularly ESA-listed Chinook, for migration, feeding, refuge and physiological transition. BILT engaged a number of professionals for assessment of options and recommendations. Restoration was recommended and BILT acquired funding to create a restoration design. Upon agreement and completion of the design, stakeholders agreed to pursue funding for the restoration effort. This is a multiphased project: Phase I Planning and Design (2010-11); and, Phase II Implementation (2012 to present). The project also includes monitoring. This project was completed by successful collaborations, which resulted in an unique restoration demonstration for other shore landowners as an example of what can be done to restore marine nearshore habitat.

POWEL RESTORATION PROJECT



Figure 1: Shoreline inventory map (from Williams et. al 2004) on overlay of Powel property aerial photo. Lower right shows 1868 survey.



PROJECT GOAL

Restore the natural processes, structure, and functions of the shore in a manner compatible with the residential use of the property.



COLLABORATIONS AT EACH STEP

The project required interactions with and input from stakeholders during all phases

- The project scoping phase.
- The design phase was accomplished with input from stakeholders and professional restoration contractors who met eight times during a 12-month period to evaluate various restoration design options for feasibility and to develop a final plan.

OBJECTIVES

- Restore over a quarter mile of shoreline by removing over 7 tons of bulkhead and non-native debris.
- Reestablish shallow intertidal area, important to juvenile salmonids and forage fishes
- Reestablishment of sediment erosion, transport and deposition

- Reestablishment of salt marsh and intertidal vegetation and increase intertidal habitat on the project property by 163 percent—almost tripling the amount present prior to project
- Enhance nearly 33,000 square feet of marine riparian habitat cover by removing invasive/non-native plants and installing over 2650 native trees and plants.

PROJECT COSTS

Design Phase: \$127,000*.

Implementation Phase: ~ \$337,000*.

Monitoring: Yet to be funded. All in-kind to date. To replace the bulkhead would cost ~ \$300 per foot, plus the cost of debris removal, for a total approximate cost of \$512,000. At this site, restoration is not only less expensive but provides increased ecological values and benefits.

*Funding for this project provided by the Puget Sound Acquisition and Restoration Fund through the Washington Salmon Recovery Funding Board, the Powel family, and BILT. BILT, as project grant applicant and sponsor, has been able to leverage a number of low or no cost services that exceed grant match requirements.

PROJECT COLLABORATORS AND ROLES

THE POWEL FAMILY: Has resided on the project site for nearly 59 years and donated a perpetual conservation easement held by BILT to protect property conservation values. The family voluntarily and actively participated in project scoping, design and implementation phases, provided funding, and amended the conservation easement to more fully protect shoreline resources.

BAINBRIDGE ISLAND LAND TRUST (BILT): Bainbridge Island Land Trust (BILT) is a non-profit organization and obtained project grant funds, acted as project sponsor and manager, facilitated contracting, communications/public outreach, landowner agreements, matching funds and services.

WASHINGTON SEA GRANT: Project management, science and technical expertise, education, monitoring and publication assistance.

SUQUAMISH TRIBE: Partner in monitoring, fisheries, technical and cultural resource project elements.

WASHINGTON DEPARTMENT OF FISH AND WILDLIFE: Technical and permitting assistance.

U.S. ARMY CORP OF ENGINEERS: Permitting assistance.

WESTSOUND WATERSHEDS COUNCIL, PUGET SOUND PARTNERSHIP, WASHINGTON RECREATION AND CONSERVATION OFFICE: Technical review, project consultation, publicity, and funding.

CITY OF BAINBRIDGE ISLAND (COBI): Nearshore assessment data and permitting assistance.

COASTAL GEOLOGIC SERVICES: Engineering design, implementation and monitoring services.

PORT MADISON BAY NEIGHBORS: Adjacent neighbor design buy off, project support.

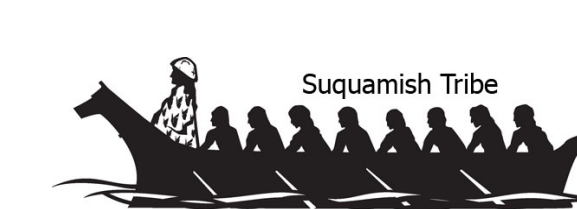
JTC INC. AND SOUND ROCK: Bulkhead and debris removal.

SOUND NATIVE PLANTS: Invasive plant removal and native plant installation and monitoring.

CULTURAL RESOURCES CONSULTANTS: Pre-construction site assessment & construction monitoring.

DUKES CONSTRUCTION: Installation of fish screen in salt water environment.

AND MORE... including Beach Watchers and volunteers working on site in a number of capacities.



¹Brenda Padgham, Stewardship Director, Bainbridge Island Land Trust, brenpa@bi-landtrust.org • ²Jim Brennan, Marine Habitat Specialist, Washington Sea Grant, University of Washington, jbre@uw.edu • For more project information go to: www.bi-landtrust.org