Department of Ecology

MEMORANDUM

Date: August 16, 2013

To: Jim Pendowski, Toxics Cleanup Program, Program Manager

From: Barry Rogowski, TCP
Kathy Taylor, TCP
Celina Abercrombie, TCP
Jeanne Koenings, TCP

RE: Port Gamble Bay $5,000,000 Funds Panel Recommendations

In the spring of 2013, the Legislature identified $7,000,000 in funds to be dedicated to Port Gamble Bay source control, habitat preservation and cleanup sustainability and confirmed this proviso language in Substitute Senate Bill 5035 for the 2013 – 2015 biennium. Ecology has committed $2,000,000 of the $7,000,000 to acquisition of the Western Shoreline Block leaving $5,000,000 in remaining funds. In May and June, TCP staff solicited ideas for projects from stakeholders and tribes for the remaining funds and began compiling a list of land acquisition and habitat restoration and enhancement ideas for future evaluation. In July, staff requested recommendations for technical experts from state agencies including the Puget Sound Partnership, Department of Ecology, Department of Natural Resources and Department of Fish and Wildlife to participate in a review panel to evaluate those project ideas. At the same time, TCP staff worked with stakeholders and tribes to obtain clarification on the input received earlier in the year, applied internal screening criteria to each of the project ideas to identify projects for the panel to evaluate, and developed project descriptions to support the review process.

On August 12, 2013, the state agency review panel convened at Ecology's headquarters to review, evaluate and recommend projects to be funded with the $5,000,000 in remaining funds for Port Gamble Bay. At this meeting, TCP staff discussed the Legislature's proviso language, described the process for soliciting and compiling a list of projects and ideas, and discussed the evaluation criteria for making project recommendations. TCP staff also led an in-depth discussion of each of the 16 projects as a way to both inform and share information with the panel members.

Following the presentation and discussion, each of the panel members completed independent evaluations of the projects. After the individual members evaluated the projects, we concluded the panel meeting with a group discussion resulting in a list of recommendations by the review panel.

A summary of the projects recommended for funding is attached to this memorandum. The recommendations are not ranked in priority order. Instead, each project was considered by the panel to meet the intent of the Legislature's proviso language ("Port Gamble Bay – Source control, habitat preservation and cleanup sustainability") and be important to the overall ecological health and sustainability of the Bay.

A total of 12 of the 16 projects evaluated by the review panel were recommended for future funding with the $5,000,000 dedicated to Port Gamble Bay. The estimated cost for each recommended project includes a 15 percent contingency to capture unknown costs given that each estimate TCP received was preliminary and for project evaluation purposes only.

TCP staff recommends adopting the panel's recommendations for project funding and proceeding with the following next steps:

1. Contact stakeholders and tribes who submitted projects and ideas for evaluation.
2. Post a press release describing the process and selected projects for future implementation.
3. Develop a website to share information on the selected projects with the public.
4. Begin planning to implement the selected projects.

Port Gamble Bay Funds Project Cost and Summary

Panel Recommendations

Project (No. and Name)	Estimated Cost	Additional Recommendations/ Considerations
1 -Purchase Forested Upland Parcels	$500,000 to $770,000	Purchase 100 to 220 acres based on recommendation to increase funding as available. Focus acquisition only on parcels that contain wetlands or stream corridors.
2 - Herring Study	$402,500	
3 - Baywide Derelict Gear/Debris Removal	$230,000	Focus on shallow zones, remove forage fish barriers, support cleanup activities, revise scope of work and confirm cost estimate is adequate to complete work.
5 and 6 - Point Julia Pier Removal and Beach Restoration	$282,900	Combined pier removal and beach restoration projects. Includes $50,000 for beach restoration.
7 - Riparian Restoration on Western Shoreline Block	$230,000	
8 - Olympia Oyster Enhancement w/seed	$390,724	
9 - Olympia Oyster Enhancement w/shell	$703,800	More effective than seed, consider whether timing with remediation is a concern.
11 - Eelgrass Restoration	$224,595	Cost is low, increase as needed.
14 - Martha John Estuary Pile Removal	$28,750	Coordinate with pier removal and other pile removal activities to reduce mobilization costs.
15 - Forage Fish Rebuilding	$57,500	Build into other projects that improve beaches for forage fish spawning by removing barriers.
16 - Funding Gap for Western Shoreline Block	$1,500,000	Set aside $1,500,000 in contingency funding to ensure the Western Shoreline block purchase if there is any kind of funding gap.
	$4,820,769	

Criteria for Evaluating Port Gamble Bay Funding	
Criteria of High Importance	
1	Does funding of this project leverage other projects or funds?
2	Does the project contribute to technical or scientific advances to allow further habitat preservation, restoration or improvement?
3	Is long-term stewardship and/or maintenance funding included in the cost estimate?
4	Is the project cost effective (e.g., biggest bang for the buck)?
5	Does the project have a realistic budget (e.g., can the work be accomplished within the specified budget)?
6	Will the project provide long-term cleanup sustainability of the Bay, which will support the Bay's community (human, fish and wildlife populations)?
7	Is the project area likely to be unimpacted or not degraded by potential future development?
8	Is the project identified in an adopted plan?

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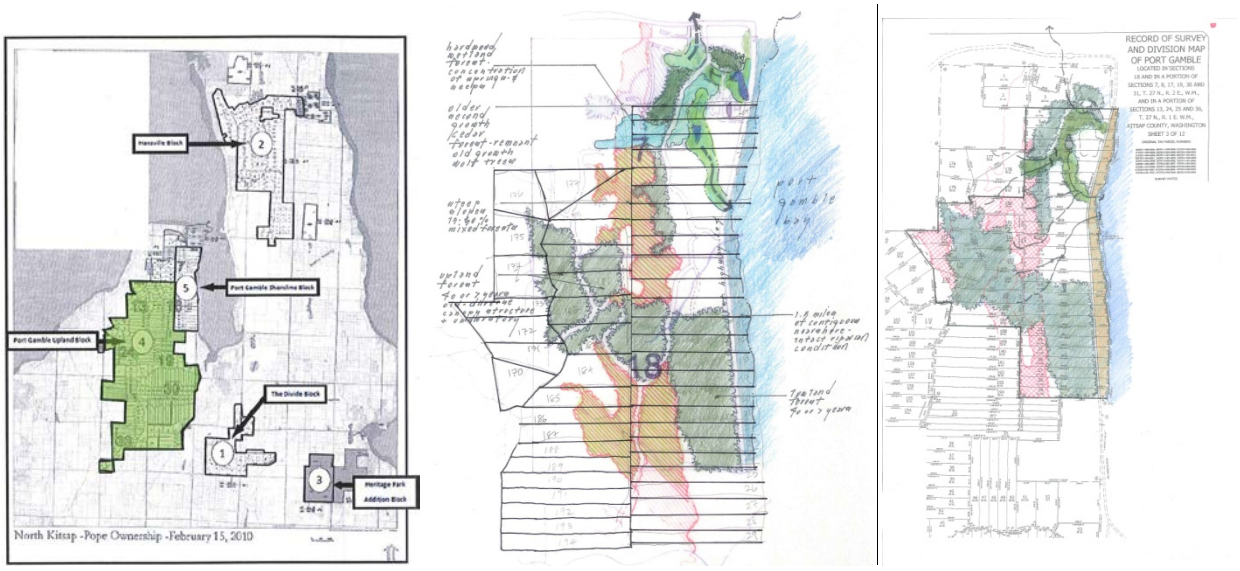
Project #1 – Purchase Forested Upland Parcels

Project Description: Purchase and long-term preservation of multiple, 20-acre forested upland lots from Pope Resources/Olympic Property Group. These lots are part of the Port Gamble Upland Block shown below. Acquisition provides ongoing public access for passive and active recreation (primarily mountain biking).



Estimated Cost: $3,500 per acre (approximately $70,000 per lot)

Pros: Some of the parcels protect existing wetland and stream resources that flow into Port Gamble Bay (freshwater wetland and headwaters of Ladine DeCouteau Creek). Acquisition may provide a larger buffer than required under the current local government critical area ordinance.

Cons: Not direct restoration and not an aquatic or shoreline land purchase.

Interdependencies and Other Considerations: Would require appraisal of individual lots and timber value. Lots currently zoned for residential development but immediate or proposed future development is unknown. To make the entire 3,000-acre section more affordable, the seller proposed allowing interim timber harvest on forestland so that buyer would only be purchasing the underlying property interest. Purchasing cleared forestland does not meet the intent of the proviso language. Ecology would explore purchasing selected parcels fee simple with no interim harvest.

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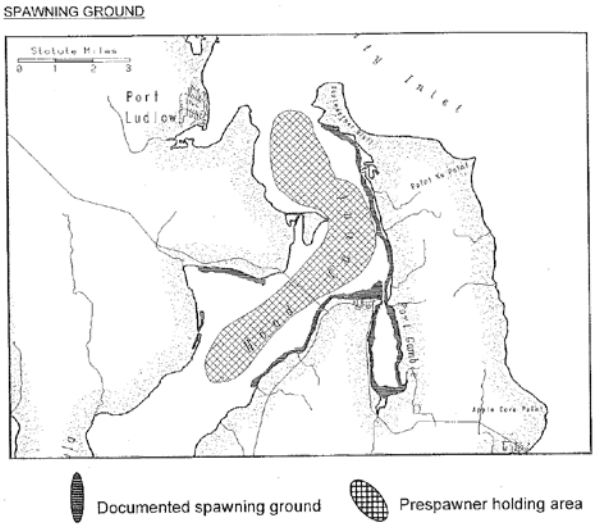
Project #2 – Herring Study

Project Description: Review stock status and trends; conduct a Pre-Spawn Distribution, Maturity and Entry study; conduct a Spawning and Early Rearing Habitat Survey study; and conduct an Embryo Mortality Study with a focus on PAH and other constituents of concern (COCs). The geographic extent of this study is shown below and is similar to the extent of the Department of Fish and Wildlife's (WDFW) Herring Stock Status Report coverage area. WDFW has not completed pre-spawn surveys for over 10 years. In addition, this work includes conducting a more detailed embryo mortality study than what has been completed in the past and following up on recommendations from the 1986/87 studies conducted by WDFW.

This Herring Study includes a larger geographic area for pre-spawn and spawning work, digitizing of all WDFW historic herring data, a comprehensive review of studies completed to date, preparation of a detailed sampling plan for the above studies, and conducting additional sampling.



Estimated Cost: $350,000

Pros: Identified in the Puget Sound Partnership Action Agenda as important. Improves scientific and technical knowledge that may contribute to Pacific herring restoration and stock rebuilding efforts in Hood Canal and Puget Sound.

Cons: Not direct restoration or aquatic or shoreline land purchase.

Interdependencies and Other Considerations: Not enough information to determine whether these studies will apply the same protocols as the WDFW surveys so that data can be consistently compared and applied over time.

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Project #3 – Baywide Debris and Derelict Gear/Vessel Removal and Restoration

Project Description: Remove debris and derelict gear and vessels along the western shoreline, Point Julia, and in other areas of Port Gamble Bay. Project elements and locations include:

- Removal of scattered intertidal debris along the western shoreline.
- Removal of contaminated and derelict debris from Point Julia and Port Gamble S'Klallam Tribe reservation beaches.
- Removal of derelict vessels within the Bay including an old barge on the beach of the western shoreline and an approximately 22-foot fiberglass boat on the western shoreline.
- Remediation of areas contaminated by derelict vessels.
- Removal of derelict debris in the Bay including several large metal buoys with chains, buried fish nets, and remaining pilings and overwater structures (those not removed as part of the cleanup).
- Planting of riparian vegetation in appropriate areas.

Estimated Cost: $200,000

Pros: Direct ecological benefit to the Bay and supports the long-term sustainability of current cleanup efforts. Improve forage fish spawning habitat. Remove hazards and sources of contamination.

Cons:

Interdependencies and Other Considerations: Potential for future funds to complete work is unclear. No current proposals submitted for additional or supplemental funding.

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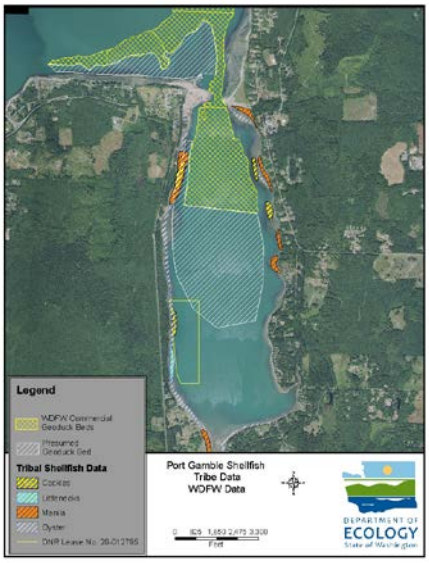
Project #4 – Shellfish Bed Enhancement for Subsistence

Project Description: Produce culturally important species in order to support subsistence and ceremonial harvest by the tribes. The project includes a partnership with the Puget Sound Restoration Fund, the Port Gamble S'Klallam Tribe and the Suquamish Tribe to produce native shellfish specifically for tribal harvest, such as cockles and native oysters. A designated area on tribal tidelands near Point Julia will be used for cultivation of these as well as other species.

Shellfish enhancement may include a pilot subtidal geoduck outplanting using restoration-grade seed on previously or recently harvested tracts. Application of these techniques may help ensure the resource is available to the tribe seven generations out. The work includes developing conservation genetic protocols with WDFW similar to those developed for Olympia oyster seed production.



Estimated Cost: $140,000

Pros: Direct ecological benefit to the Bay and supports the long-term restoration of shellfish resources.

Cons: Located on tribal land and intended for tribal subsistence. No public access or use.

Interdependencies and Other Considerations: Tideland ownership will need to be determined as part of project development.

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Project #5 – Point Julia Pier Removal

Project Description: Remove and dispose of creosote-treated pilings and superstructure of the Point Julia pier. The pier is not used and poses a safety hazard to tribal members. Work includes demolition and removal of the old pier, pilings, and concrete boat launch.

One concrete boat ramp will remain to provide water access for tribal members. Proposed improvements or upgrades to this ramp will be completed with separate funds.

Estimated Cost: $196,000 ($146,212 for pier removal and $50,000 for ramp removal)

Pros: Direct ecological benefit to the Bay. Source control through removal of creosote-treated pilings. Restoration of upper beach habitat where concrete boat ramp is located.

Cons: Located on tribal land. No public access or use.

Interdependencies and Other Considerations: May be beneficial to complete in conjunction with Point Julia Beach Restoration.

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Project #6 – Point Julia Beach Restoration

Project Description: Restore the beach at Point Julia following demolition and removal of the old pier, pilings, and concrete boat launch.

One concrete boat ramp will remain to provide water access for tribal members. Proposed improvements or upgrades to this ramp will be completed with separate funds.

Estimated Cost: $200,000

Pros: Restoration of upper to lower intertidal habitats to improve forage fish, juvenile salmonids and shellfish habitat. Direct ecological benefit to the Bay.

Cons: Located on tribal land. No public access or use.

Interdependencies and Other Considerations: Requires completion of the Point Julia Pier Removal project.

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Project #7 – Riparian Restoration of the Western Shoreline Block

Project Description: Plant native vegetation at two degraded riparian sites totaling approximately 1.5 acres and located within the Western Shoreline Block land acquisition area. Install trees and shrubs native to the area including applying a soil amendment, as needed, and mulching. Improve existing trail within riparian to support long-term establishment and preservation of the area.

Provide routine maintenance and annual monitoring for a period of 5 years to support restoration efforts.

Estimated Cost: $200,000 ($120,000 plus maintenance/monitoring/reporting costs)

Pros: Direct ecological benefit to the Bay. Restoration of marine riparian habitat will provide long-term benefits to forage fish, juvenile salmonids and other fish using the nearshore environment.

Cons: Area currently used by Audubon for annual bird surveys and plantings may block views of Bay over time.

Interdependencies and Other Considerations: Complete work following Western Shoreline Block land acquisition and transfer to Kitsap County. Consider working with Audubon to maintain views, as appropriate, for ongoing, annual bird surveys.

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Project #8 – Olympia Oyster Habitat Enhancement (with seed)

Project Description: Produce 5,000,000 restoration-grade Olympia oyster seeds (10mm) at the NOAA/Manchester Shellfish Restoration Laboratory using genetic protocols co-developed with WDFW to augment shell enhancement and strengthen recruitment. Produce a total of 2,000 bags of seeded cultch (1,000 bags in 2014 and 1,000 bags in 2015). Bags will include 250 shells per bag and approximately 10 seed per shell. Native oyster enhancement efforts are likely improved with both shell and live oysters. Hatchery-propagated seed will be spread over and within the shell enhancement area to increase recruitment and support re-colonization.

This work includes augmenting the Manchester facility with an outdoor nursery and grow-out space to fully accommodate seed production for Port Gamble Bay and possibly for other experiments.

Estimated Cost: $339,760 ($322,000 plus monitoring/reporting costs)

Pros: Direct ecological benefit to the Bay. New shellfish resources and harvesting opportunities will be available to tribes and the public.

Cons:

Interdependencies and Other Considerations: NOAA's Manchester Shellfish Restoration Laboratory is being constructed under the Washington Shellfish Initiative. Construction is expected to be completed and operational in October 2013 and seed produced for outplanting will be available for spring 2014 and 2015. Includes deployment of a Washington Conservation Corps (WCC) crew to assist with on-the-ground restoration and hatchery work for 6 months.

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Project #9 – Olympia Oyster Habitat Enhancement (with shell)

Project Description: Enhance 10 acres of native oyster habitat by increasing settlement structure. Work includes spreading an average of 250 cubic yards per acre of clean Pacific oyster shell on 10 acres of tidelands with suitable habitat conditions. This approach is consistent with WDFW recommendations and guidelines. Similar enhancement techniques have been used to restore tidelands in Liberty and Dogfish bays.

Monitoring includes standard pre-manipulation biological characterization and resource assessment (richness, biodiversity for emergent plants, animals and infauna, beach slope, sediment profile, mapped intertidal zonation and sediment chemistry profile), elevation distribution (upper and lower), assessment of juvenile recruitment and adult population structure, and post enhancement (repeat of pre-manipulation survey).

Estimated Cost: $612,000 ($500,000 [$50,000 per acre for shell, transport and spreading] plus monitoring/reporting costs)

Pros: Direct ecological benefit to the Bay. New shellfish resources and harvesting opportunities will be available to tribes and the public through re-colonization of historic habitat.

Cons:

Interdependencies and Other Considerations: Permission has already been received from 14 shoreline property owners granting access to 30 tideland parcels. Permits (5-year permit) expected in July/August 2013.

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Project #10 – Experimental Shell Remediation

Project Description: Conduct an experimental shell remediation project to examine the effect of applying crushed shell to an area. This project was one of the recommendations from the Blue Ribbon Panel on Ocean Acidification. This work will test the effect of applying crushed shell to an area and measuring seawater chemistry and could be conducted as part of a multi-dimensional restoration project.

Spreading of shell material in shallow waters can increase the survival of new larvae by buffering corrosive conditions, which occurs when calcium carbonate in deposited shell material dissolves and increases seawater alkalinity. This increased alkalinity counters corrosive conditions created by byproducts of normal respiration processes and other contributions.

Several aspects of this study would require additional investigation including disease prevention, shell treatment, material sourcing and monitoring. Collected shell (potentially from restaurants that serve shellfish products from within and outside of the state) would require treatment to prevent diseases and crushing to optimize buffering before applying to beaches.

Estimated Cost: $50,000 to 100,000 including monitoring/reporting costs

Pros: Direct ecological benefit to the Bay. Increases scientific restoration knowledge and may contribute to or support new shellfish habitat and resources in the future.

Cons: No assurance of success.

Interdependencies and Other Considerations: Work to be conducted in partnership with WDFW and the tribes. Partnerships with restaurants, shellfish growers and tideland owners, and work with pathologists and biochemists would also be needed.

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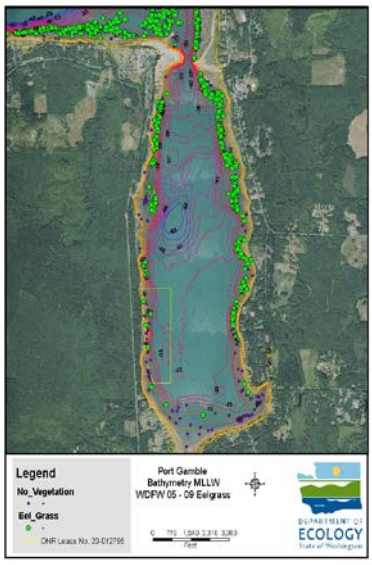
Project #11 – Eelgrass Restoration

Project Description: Restoration of 2 acres of eelgrass beds. Prior to restoration, a resource assessment will be conducted to determine the historic and current distribution of eelgrass in Port Gamble Bay. This will also help in selecting an appropriate area for restoration. Once a suitable area is identified and secured, permits will be obtained and the project will be implemented. Work elements include research, assessment, permitting and implementation.

Monitoring includes pre-manipulation surveys (repeated for post-implementation monitoring) of eelgrass presence and extent, bed structure within and at the entrance of the Bay using supplement aerial data with sidescan sonar surveys in deeper waters to answer the following questions:

- Where does potential eelgrass habitat exist?
- Where is eelgrass vegetation currently not persistent?



Estimated Cost: $195,300 ($160,000 plus monitoring/reporting costs)

Pros: Direct ecological benefit to the Bay. Increases scientific restoration knowledge. Provides habitat for Pacific herring, fish, shellfish and other aquatic biota.

Cons:

Interdependencies and Other Considerations: Work to be conducted in partnership with WCC and the tribes. Unclear how easy it will be to secure access to the identified restoration area(s). The Esturary Habitat Restoration Council is in the process of evaluating grant proposals for project funding. DNR submitted a proposal for eelgrass restoration, which ranked 3 out of 12, and is awaiting the council's final project recommendations. If funding is secured it could provide up to $1,000,000 in matching funds that will support eelgrass restoration in other estuaries such as the Elwha or Nisqually estuaries.

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Project #12 – Kelp Restoration

Project Description: Conduct applied research for canopy kelp restoration at three locations near Port Gamble Bay to re-establish kelp habitat in historic areas. Since 2010, pilot hatchery and field trials to test different kelp restoration techniques have been applied at multiple locations including Port Gamble Bay, Jefferson Head, Restoration Point and the Anderson Island DNR Aquatic Reserve. Techniques have included: 1) transplanting live kelp plants; 2) transferring sorus (reproductive region of live plants); 3) seeding natural fiber rope with kelp sporophytes in a hatchery prior to outplanting in the spring; and 4) inoculating pea gravel with gametophytes in a hatchery prior to spreading in the fall. Data collection and monitoring methodologies (including scuba surveys and towed sonar transects) have been employed to evaluate the results of these efforts.

Year 1 will be devoted to establishing laboratory and field space at the NOAA Manchester Shellfish Restoration Laboratory for continuing canopy kelp research to develop techniques for growing kelp and re-establishing canopy beds. Active pilot restoration work will be conducted in Year 2. An assessment of kelp population restoration will occur in years 3 and 4.

Specific sites and methods will be selected in consultation with tribes, resource agencies and the kelp advisory team members. Potential project sites will be located at historic locations outside the entrance to Port Gamble Bay and near Point Julia, and will be selected in partnership with the tribes.

Monitoring includes establishing a network of locations as potential study and enhancement sites based on review of available literature, interviews, and shoreline surveys (sled/SCUBA or sidescan sonar); conducting pre-manipulation surveys of kelp field sites including emergent animal and plant species assessment for richness and biodiversity, sediment profile, and plaster puck deployment (water flow measurement); to be determined monitoring of efficacy of the outplant treatment; and monitoring of subsequent natural recruitment to the outplant sites documenting phorophyte emergency qualities (temporal and spacial) and assessing canopy production, proportion of maturation and relative fecundity.

Estimated Cost: $469,900 ($383,700 plus monitoring/reporting costs)

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Pros: Direct ecological benefit to the Bay. Potential to re-establish historic habitat for fish, marine mammals, and other aquatic biota. Increases scientific restoration knowledge.

Cons: Planting proposed north of the Mill Site, which is undergoing active remediation for contaminated sediments, and Point Julia. Port Gamble Bay is not an historic kelp area.

Interdependencies and Other Considerations: Partners and funders have included the Port Gamble S'Klallam Tribe, Suquamish Tribe, DNR, Norwest Indian Fisheries Commission, Puget Sound Pilots, and the Russell Family Foundation. A recently established technical advisory team to improve upon methods and results includes members from the Suquamish Tribe, DNR, Marine Agronomics, UW, and Canadian Kelp Resources, ltd.

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Project #13 – Ocean Acidification Pilot Study

Project Description: Implement and monitor ocean acidification (OA) remediation actions to create OA refuge (i.e., make our bays and inlets as resilient as possible to the effects of OA). In 2012, the Blue Ribbon Panel on OA recommended priority actions (*Ocean Acidification: From Knowledge to Action, Washington State's Strategic Response*) to remediate and adapt to the impacts of OA. This work in a partnership between the Puget Sound Restoration Fund and others will implement 5 to 10 of the recommended actions in Port Gamble Bay to test and monitor the degree to which the actions can be applied to an enclosed embayment to help create effective OA refugia. Specific actions may include:

- Establish a demonstration 5-acre kelp farm inside the Bay to draw down CO_2 and nitrogen, mitigate acidification impacts, and improve seawater conditions. This work involves intensive sampling to test the kelp-OA-carbon-toxin mitigation effects. Seaweed farming may produce useful products while improving marine waters.
- Co-culture shellfish with eelgrass to test the ability of seagrasses to create buffered seawater conditions for shellfish. Shellfish would be cultivated in the intertidal area above and in close association with eelgrass. Because eelgrass is a photosynthesizer and grows in elevated pCO_2 environments, it may play a role in reducing carbon dioxide in surrounding seawater, creating better conditions for larval shellfish. Work includes monitoring the effect of existing and restored eelgrass on water quality and chemistry, the spatial extent of that effect and shellfish recruitment.
- Restore native oyster beds with an underlayer of shell to create ecological communities that may insulate organisms from low pH in the surrounding waters. Research suggests that localized areas such as Port Gamble Bay restored native oyster beds may help create ecological communities that can tolerate the effects of acidified water.
- Implement a demonstration seaweed collection project to remove decomposing biomass from a shellfish growing area in order to 1) improve localized conditions for larval shellfish; 2) produce a fertilizer/compost product for watershed residents; and 3) recycle nutrients back into the watershed.
- Collect seawater chemistry data before and after distributing shell to enhance native oyster habitat in order to evaluate the ability of shell to remediate impacts of location acidification on shellfish.
- Develop and disseminate customized toolboxes to watershed residents to engage people and catalyze actions at the individual, farm, business, and municipal levels. A focus would be on reducing stormwater flows and toxic and bacterial pollution from individual properties. Work will be documented through pledges and water quality monitoring.
- Deploy instruments and conduct seawater sampling/monitoring to measure phytoplankton/zooplankton abundance and diversity, pCO_2, NO_2, NO_3, and NH_4^+ and recruitment as well as assessing the effect of OA remediation actions.
- Improve conservation hatchery techniques and monitoring systems to protect larvae from corrosive seawater and maintain genetic diversity of native shellfish species. Practices could be applied to the conservation of multiple species as needed.

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Monitoring includes weekly sampling over a two-year period. Stations would be established for oyster, kelp, seaweed farm, eelgrass, entrance, head top and bottom with a possibility of adjacent Hood Canal sites. Consideration should be given to deploying the ADCP to measure seawater residence in the Bay and the creation of a weather station to record wind speed and direction, wave height, temperature (air and sea), rainfall, and salinity. Other parameters could be added.

Estimated Cost: $388,800 ($360,000 plus monitoring/reporting costs)

Pros: Direct ecological benefit to the Bay. Increases scientific knowledge.

Cons: No assurance of success. Additional funding will likely be needed to implement actions and evaluate their efficacy. Does not include costs for monitoring equipment.

Interdependencies and Other Considerations: Kelp/seaweed farming project may require changes to current state laws to allow this activity. Projects including native oyster bed restoration and collection of seawater chemistry data require funding of other projects. Additional funding will likely be needed to implement actions and evaluate their efficacy. Does not include costs for monitoring equipment.

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Project #14 – Martha John Estuary Broken Pile Removal

Project Description: Remove remnant piles in the estuary of Martha John Creek. Includes removal of up to 20 piles for source control and improvement of shallow water navigation.

Estimated Cost: $25,000

Pros: Direct ecological benefit to the Bay. Source control and supports cleanup efforts being conducted in the Bay.

Cons:

Interdependencies and Other Considerations: Work could be conducted with other pile removal activities in the Bay to maximize funds.

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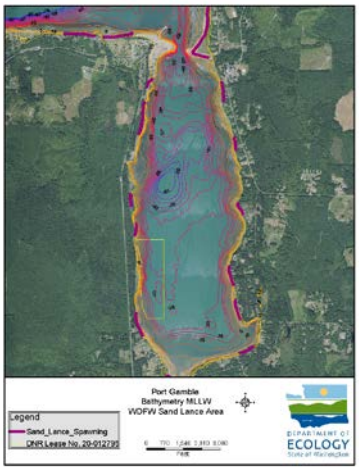
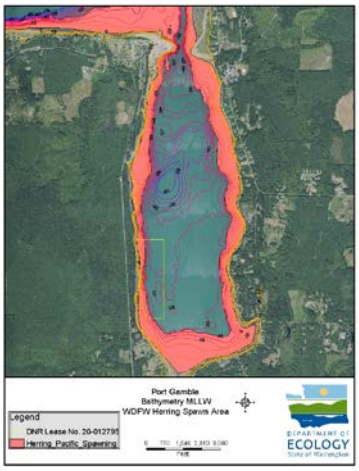
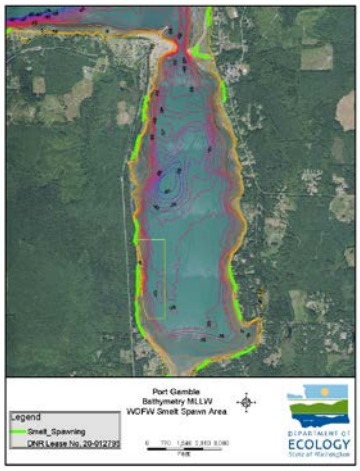
Project #15 – Forage Fish Rebuilding

Project Description: Removing debris or barriers to forage fish spawning in intertidal areas throughout Port Gamble Bay including eelgrass beds for Pacific herring.







Estimated Cost: Unknown (in progress)

Pros: Direct ecological benefit to the Bay. Improves forage fish habitat.

Cons:

Interdependencies and Other Considerations: Work could be conducted with other restoration projects (beach restoration, eelgrass restoration) to maximize funds and optimize restoration efforts.

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Project #16 – Western Shoreline Block Funding Gap

Project Description: Ecology has committed up to $2,000,000 for acquisition of the approximately 500-acre Western Shoreline Block at Port Gamble, to be owned by Kitsap County. The value of the property is $4,600,000. Kitsap County has received several federal and state grants to make up the funding gap, however, grant funding criteria and requirements may reduce available grants. This project would increase Ecology's contribution to that purchase. Ecology has also committed $175,000 to Kitsap County for long-term stewardship of the property.

Estimated Cost: $1,500,000

Pros: Direct ecological benefit to the Bay. Provides source control and habitat preservation of marine riparian and upland resources.

Cons:

Interdependencies and Other Considerations: This project is linked to riparian restoration on the western shoreline.

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