County: Jefferson
Grant No: G1000023

PROJECT TITLE: **Northwest Straits Project: Marine Resources Committee Administration & Action Project**

PROGRESS REPORT: [✓] FINAL REPORT []

PERIOD COVERED: January 2010 – December 2010

DATE SUBMITTED: March 2011

Attachments: Task 1 Deliverable – 2010 Annual Report

This report was funded in part through a cooperative agreement with the National Oceanic and Atmospheric Administration.

The views expressed herein are those of the author(s) and do not necessarily reflect the views of NOAA or any of its sub-agencies.

2010 ANNUAL REPORT

JEFFERSON COUNTY MARINE RESOURCES COMMITTEE

SUCCESSES/HIGHLIGHTS OF THE YEAR

- Marine Stewardship Program Logs Over 2,700 Volunteer Hours
- Eelgrass Partnerships with East Jefferson Fire and Rescue Ensure Sustainability
- Completion Mystery Bay Harbor Management – 1st Year Implementation and Video Production
- New Partnership with North Olympic Salmon Coalition Results in Benchmark Funding - Maynard Beach Nearshore Restoration Project is Launched.

INTRODUCTION

Established by the Jefferson County Board of County Commissioners by resolution in 1999, 2010 marked the tenth year of action grant activities for the Jefferson County MRC. Since its inception, the Jefferson MRC has been striving to emphasize on-the-ground projects while providing education and outreach on emerging marine resources issues. The Olympia Oyster Project is in its eighth year, the Voluntary Eelgrass Protection Zone is in its seventh year and Drift Cell Restoration well into its sixth year. 2010 was also the year in which the Jefferson County MRC completed its first Benchmark Project – the Mystery Bay Harbor Management Plan - and received a second Benchmark grant - initiating the Maynard Beach Nearshore Restoration project. The Marine Stewardship program, in its 4th year, partners with Shore Stewards, Beachwatchers and the Puget Sound Partnership - to name just a few - in working to achieve long-term stewardship for Jefferson County marine resources.

In 2010, the Jefferson MRC was supported entirely by WDOE Grant No: G1000023. The MRC works to partner with other county, state and NGOs to expand its sphere of influence and improve its position to receive additional grant funds from other sources. In 2010, with the help of the Northwest Straits Foundation, the Jefferson MRC and project partners (San Juan, Skagit, Whatcom and Snohomish MRCs, Puget Sound Restoration Fund, Washington Department of Fish and Wildlife) received a $78,000 grant from National Fish and Wildlife Foundation for genetic testing of remnant populations of Olympia oyster in north Puget Sound.

Task 1. - ADMINISTRATION

The Jefferson County MRC Coordinator and Secretary scheduled meeting rooms, prepared agendas and meeting notes on a monthly basis.

The Coordinator provided support to monthly MRC meetings, monthly executive committee meetings and special meetings (such as the annual project planning work-sessions) as needed.

Work Plans were prepared and subsequently revised to incorporate benchmark funding.

The Jefferson County MRC's NWSC representative Shannon Davis, alternate Tony Petrillo, or lead staff Pat Pearson have attended all of the Northwest Straits Commission meetings in 2010.

The lead staff and Coordinator attended the NWS-hosted lead staff meetings at Padilla Bay. Seven Jefferson County MRC members attended the annual training conference on Orcas Island in November.

The MRC has arranged for ongoing maintenance of MRC blog http://jcmrc.blogspot.com/ through its contract with LaRoche+Associates. The blog host currents events and announcements. The website, maintained by MRC volunteers, now links to a blog, and is used primarily to share MRC products and documents. Late in 2010 a redesign of the website was uninitiated with help of the Northwest Straits Commission staff and their website consultant. The new site will launch in early 2011. The new website address is www.jeffersonmrc.org

Task 2. – MARINE STEWARDSHIP

The Jefferson MRC's Marine stewardship program logged over 2,700 volunteer hours. Program highlights are described below.

Outreach to Project Partners

The Coordinator or lead staff attended monthly "Chumsortium" meetings (a group of local government, tribal government and NGO's, coordinated by North Olympic Salmon Coalition that meet monthly to track and coordinate on local salmon restoration projects). The Coordinator or lead staff also participated in all Hood Canal and Straits Partnership Meetings and HCWEN and Straits ECONET meetings in 2010.

Watershed Day

The 12th Annual WSU Jefferson County Watershed Day on October 9 featured keynote speaker, Dr. John Incardona of NOAA's Northwest Fisheries Science Center who presented current research linking pollutants in stormwater to deformities found in fish. The day, attended by 50 people, was sponsored by the Jefferson MRC.

Dr. Incardona and his colleagues have learned that heart function is disrupted by exposure to chemicals found in our stormwater. These chemicals – 3-ringed PAH's come from the burning of fossil fuels. In other words, PAH's come from car exhaust.

After his keynote, Dr. Incardona was joined by local experts Terry Khile, Environmental Compliance Officer for the Port of Port Townsend; Dan Hatcher, Environmental Protection Specialist of Naval Magazine Indian Island; and Pat Pearson, Water Quality faculty at WSU Jefferson County Extension. Together the group took questions and talked about stormwater issues facing Jefferson County.

Beachwatchers

Bottled Water Display

Beach Watchers unveiled a new 3-panel display this summer - focused on the issue of bottled water. The display is a culmination of the work that has been done by Jefferson County Beach Watchers over the past several years on the issues surrounding bottled water. The display was funded by the Jefferson County

Marine Resources Committee and the North West Straits Commission. It was unveiled at the Jefferson County Fair then loaned to Clallam County Beach Watchers for Streamfest.

Recycling Waste at Canoe Journey

The 2010 Tribal Canoe Journey came ashore in Port Townsend on July 14. WSU Jefferson County Beach Watchers coordinated a recycling station at the beach landing for the second year. Beach Watchers arrived on site early to set up recycling stations. Beach Watchers have been strong advocates for reducing the waste stream from bottled water over the past year. This year the local organizers worked to set up a water station with pitchers and paper cups and did not provide bottled water. We have been strong advocates for reducing the waste stream from bottled water over the past year and we were pleased to see a significant drop in the number of plastic bottles we recycled.

Education and Public Service Award

WSU Extension's Beach Watchers program is the meritorious winner of the 2010 Education and Public Service award from the national Universities Council on Water Resources. The award was presented at the group's national conference in Seattle on July 15.

Task 3. - OLYMPIA OYSTER PROJECT

Discovery Bay

The 2010 field season commenced January 10th with the continued examination of the Discovery Bay native oyster (Ostreola chonchaphila) resource and the Jefferson MRC's eighth year in native oyster restoration. The first completed task involved the re-tagging of the Growth Rate oysters. The oysters required re-tagging due to the degradation of the labels (fading) and glue failure noted at the end of the 2009 field season. Weekly site visits commenced March 3rd and involved tasks to investigate factors affecting native oyster bed sustainability such as growth rate, mortality, spat settlement, and habitat condition. The field work and observations associated with these factors are summarized below.

Growth-rate Monitoring

A total of 344 oysters were processed (172 Pond oysters were relabeled plus 1 dead; 164 Lagoon oysters were relabeled plus7 dead). This equates to a fourth quarter September – December 2009) survival rate of 98% (172/175) for the Pond and 96% (171\164) for the Lagoon.

The Growth Rate oysters were re-examined March 30th (Lagoon) and March 31st (Pond), weights and measurements were recorded as stated above. A total of 331 oysters were processed (Pond = 137 live; 30 dead; 5 missing. Lagoon = 157 live; 7 dead). This equates to a first quarter January – March) survival rate of 80% (137/172) for the Pond and 96% (157\164) for the Lagoon.

During the second calendar quarter April – June, a total of thirty-two oysters had died (5/lagoon = 4% mortality; 27/pond = 20%). Unlike 2009, very few of the dead oysters showed obvious signs of stress (i.e. thin, weak, and eroding shells). The 37% (175/110) mortality rate sustained in the tagged Pond oysters since September 2009 may be attributable to one or more of these factors: the stress incurred during the re-tagging process in January, aging population, or possible exposure to toxic substances released during the removal of wood waste during 2009 site restoration.

The weight and measurement procedures were repeated September 6th and 7th, near the end of the growing season. Mortality of the tagged oysters was also calculated for the third calendar quarter July – September, and found to be 0% for the pond (N=110) and 2.6% (4/151), for the lagoon (N = 147).

Mortality

Mortality observations of selected oysters were conducted on a quarterly basis during the field season. Three shell trays, (pond, NW drainage channel, lagoon tidepool) containing 100 oysters each were placed at the site. The oysters in this study were left to the vagaries of nature and were not "maintained". After each quarterly count, the number of oysters in each tray is restored to 100.

The 2010 winter and spring mortalities were less than the previous year. The reduced mortality is likely attributable to milder winter – early spring weather. Reduced salinity and pH values were recorded throughout the field season with minimal apparent negative effect on the mature oysters and 2009 spat, though it is possible that these sub-optimal conditions could be a factor in the ability of oyster veligers to form shell and set on cultch.

Larval Set Monitoring

In 2009 sampling for the assessment of larval recruitment was changed from using vertical shell strings to the use of cultch trays with great success. The samplers consist of clean labeled Pacific oyster shells contained in plastic trays that are strategically located within the native oyster bed in both the sub tidal pond and the drainage lagoon. These samplers were again used for the 2010 field season.

The cultch shells were left in place during the spawning season and a small sample of oysters was examined on a weekly basis to determine spawn condition. Oysters were observed under magnification (field loupe a/o field microscope) for signs of ripeness, visible eggs, sperm balls, or brooding. Once brooding and spent oysters were observed, the cultch shells were thoroughly examined for the presence of spat. The examined oysters appeared healthy and spawning proceeded as expected. Unfortunately, no spatfall was observed this season. Additionally, there was a significant lack of other young epifauna on the cultch (such as barnacles, mussels, clams). A few young limpets were observed, but those sustained high mortality.

Reduced salinity and pH values were recorded throughout the field season. Comprehensive knowledge of all the physical and environmental conditions required for successful larval recruitment continues to be elusive.

Habitat Condition

The two continuous recording thermographs that were installed in the native oyster bed on 1/13/06 continue to collect tideland temperature data in the drainage lagoon and the sub tidal temperature of the mill pond.

Salinity was measured on a weekly basis March through early September using a refractometer. The measurements were taken directly above the oysters contained in the shell trays located in the NW drainage channel of the lagoon; the seasonal tidepool in the lagoon; the east side of the mill pond and the tide gate area of the mill pond. This data is of interest because reduced salinity can have a negative impact on the health of the native oyster population.

pH was measured on a weekly basis March through early September using a portable field meter. The meter is accurate to 0.05 pH with a resolution of 0.01 pH. Measurements were taken directly above the oysters contained in the shell trays located in the NW drainage channel of the lagoon;

the seasonal tidepool in the lagoon; the east side of the mill pond and the tide gate area of the mill pond. Measurements were taken on both neap and spring tides; ebb and flood tides.
The persistent sub-optimal pH values at this site are a concern and the cause has not been ascertained. The cause may be from buried wood waste, changing marine conditions, biological actions (bio-films, bacteria, etc.) or other unknown factors. It is possible that the sub-optimal pH values could be a factor in the ability of oyster veligers to form shell and set on cultch, thus limiting the sustainability of the population. The situation warrants further investigation.

Physical Changes to the Research Site

A large tide pool has formed at the mouth of the drainage lagoon and extends to the east of the railroad bridge (bayside). The tide pool formed as sediment transported by Snow Creek built a shoal partially across the mouth of the drainage lagoon. This pool is retained even on minus tides and may provide additional oyster habitat if the substrate were enhanced with gravel and / or shell hash.

Surveys

On June 15th at Seal Beach State Park training was provided to several Marine Resource Committee volunteers from around the Salish Sea on the methodology and equipment usage for conducting Olympia oyster Presence/ Absence surveys. The training was lead by Brady Blake of Washington Department of Fish and Wildlife and Betsy Peabody of Puget Sound Restoration Fund and assisted by myself and Sharon Schlentner. The training was comprehensive and included:

- Identification
- GPS
- Tide Height measurements
- Population survey (density, spatial distribution, spat)
- Habitat description
- Haphazard sampling methods

Outreach: Outreach to project partners in Discovery Bay restoration continued though attending Chumsortium/Snow Salmon Technical Advisory Group (SSTAG) meetings.

Task 4. - VOLUNTARY ANCHOR-FREE EELGRASS PROTECTION ZONE PROJECT

Marker Buoys: The Jefferson MRC ensured seasonal placement, maintenance and removal of marker buoys for the seventh year of the Voluntary Anchor-Free Eelgrass Protection Zone. Spring buoy installation occurred in April. A team of professional divers, the East Jefferson Fire and Rescue Department boat and captain, and two members of the MRC, transported the buoys from winter storage and attached them to the ground tackle which over-winters in place. Fall buoy removal and cleaning occurred October 11, 2010 with the help of the East Jefferson Fire and Rescue Department who provided their boat, captain, deckhand and one of the two divers needed to complete the task.

Partners: The highlight of the Eelgrass project for 2010 was the development of a potential long-term partner in the project. East Jefferson Fire and Rescue Department is using the Jefferson MRC's marker buoy deployment and retrieval as a training opportunity. The marker buoys are removed in the fall and reinstalled in the spring at significant cost for coordination, boat rental and professional dive services. A partner with East Jefferson Fire and Rescue Department in this effort would go a long way toward increasing the long-term sustainability of the Voluntary Anchor-free Eelgrass Protection Zone along the Port Townsend waterfront.

Outreach: The MRC distributed brochures, stickers, posters, and cards at the Wild Birds Earth Day Event (April). The booth also featured one of the buoys and a display depicting anchor damage to eelgrass. Press releases were issued resulting in articles in the PT Leader. The MRC hosted an informational booth at the 33rd Annual Wooden Boat Festival, September 10-12, 2010. Visitors to the booth learned about Eelgrass Protection through displays and the video which documents the seasonal removal of the marker buoys and chronicles the success of boater behavior modification. Signers of the Eelgrass Protection Pledge received a free poster or postcard.

Monitoring Project Success: Photograph and boat count monitoring of boater behavior was implemented throughout the reporting period. Photograph and boat count monitoring of boater behavior was implemented from May through September 2010. Voluntary compliance based on boat counts is estimated at 100% for 2010.

Surveys: Eelgrass studies in Discovery Bay, Mats Mats Bay and Port Ludlow were conducted in July, August and September or 2010. Survey data provides inventory information for permitting, is used as baseline data for nearshore restoration projects such as Maynard Beach and may serve as the basis for the establishment of voluntary eelgrass protection zones.

Task 5. - DRIFT CELL RESTORATION PROJECT

Oak Bay County Park is located on the western side of the Port Townsend Ship Canal in northwest Oak Bay at the end of Portage Way. The access road runs along the (filled) top of the spit. The waterward edge of the road has been armored with a rock revetment comprised of 2-3 ft rock. Immediately landward of the inactive and active campsites is a salt marsh complex and open-water tidal lagoon. In the 2010 the Jefferson MRC pursued nearshore restoration of the spit and lagoon complex. Complicating the selection of restoration alternatives was the issue of cultural resources. An archaeological survey conducted in May found an intact shell midden running the length of the spit. For this reason, any disturbance of the spit, including that associated with restoration, (ie. removal of armoring) is not practicable. Remaining funds were re-programmed for activities to be conducted in early 2011.

Task 6. - BENCHMARK PROJECT – MYSTERY BAY HARBOR MANAGEMENT

The goal of the project was to address multiple Northwest Straits Benchmarks (Marine Habitats, Marine Life, Marine Water Quality, and Education and Outreach) by implementing key elements of a Harbor Management Plan that would satisfy Washington Department of Health (WADOH) and allow shellfish harvest and recreational boat use to co-exist.

Through an extensive 10-month stakeholder process the Mystery Bay Harbor Management Plan was completed in April 2010. Concurrent with plan development, project partners identified and removed ten derelict mooring buoys. In the spring of 2010, the Jefferson MRC established a Voluntary No-Anchor Zone with marker buoys and Beachwatchers monitoring the numbers of boats.

On April 30, 2010, Mystery Bay was reclassified from “Conditionally Approved” to “Approved” to allow commercial harvest of shellfish. This reclassification returns the shellfish growing area to the classification it held before August of 2009. The successful implementation of the Mystery Bay Management Plan is controlling the number and location of mooring buoys and boats in Mystery Bay, resulting in compliance with standards for an “Approved” classification.

The Jefferson MRC and Beachwatchers continued to provide monitoring and reporting to WADOH through September 2010. A video, depicting the purpose and location of the Voluntary No-anchor Shellfish Protection Zone, was produced and shown at the Wooden Boat Festival, the Marrowstone community and the Port Townsend Yacht Club through-out the fall or 2010.

The Mystery Bay approach serves as a model that could be used in the following locations where boater/shellfish use conflicts exist or are anticipated to exist in the future according to Washington Department of Natural Resources:

- Jefferson County- Port Hadlock, Matts Matts Bay
- San Juan County- Lopez Island, Shoal Bay, Westcott Bay, San Juan Island.
- Whatcom County- Drayton Harbor (if mooring buoys present/if shellfish harvest is opened)
- Island County- Pen Cove, Whidbey Island (not currently an issue/ maybe an issue in the future)
- Clallam County - Sequim Bay

While the 1st year success of the project is unparalleled, the long-term success of this project hinges on the ability of key stakeholders to remain committed to the project. The Jefferson MRC will continue to provide some support for volunteer coordination and education and outreach through its Marine Stewardship Program. However, all aspects of the project must be shared among project partners (Marrowstone Island Shellfish, WADNR, Mystery Bay State Park, Jefferson County DCD and others).

Task 7. - BENCHMARK PROJECT – MAYNARD BEACH NEARSHORE RESTORATION

A new partnership with North Olympic Salmon Coalition resulted in Benchmark funding for the Jefferson MRC to expand its work in nearshore and drift cell restoration. At the head of Discovery Bay, Maynard Beach is adjacent to the MRC's Olympia oyster study site. The MRC plans to remove armoring along the old railroad grade, restoring the entrance to a small lagoon by removing a creosote trestle bridge and creating a pocket estuary by replacing a culvert with a larger inlet and bridge. In late 2010, a Request for Proposals was developed to solicit firms qualified in nearshore restoration.

The Maynard Beach Nearshore Restoration is a high priority project that addresses many of the objectives in the Jefferson MRC's Strategic Plan, as well as implementing a project that is specifically identified in Jefferson County's Shoreline Master Program Restoration Plan. It addition, it fits within the Jefferson MRC's 2010 Workplan under the Drift Cell Restoration Program which is aimed at nearshore restoration projects that reduce hardened structures in the nearshore. The Maynard Nearshore project offers a unique opportunity to act on multiple initiatives together in one project.

The Maynard Nearshore Restoration project will have measurable results and will leverage additional resources by December 31, 2011. In the near-term (by December 2011) tangible results include complete 30-100% engineering plans and all pre-project studies. Ultimately, measurable results of the Maynard nearshore restoration are: 1800' of restored Discovery Bay shoreline and adjacent features. Benchmark funding is enabling the Jefferson MRC and project partners to leverage significant resources for the construction pahse of the project. The Jefferson MRC's project partner, North Olympic Salmon Coalition, has a proven track records of delivering quality results on time. NOSC's recent projects include Chimacum Beach and estuary restoration and the Snow/Salmon Estuary Restoration at the head of Discovery Bay.

BENCHMARKS FOR PERFORMANCE

The following table summarizes accomplishments by benchmark and task. Refer to the preceding narrative for details within each task.

	Education & Outreach	Sound Science	Marine Water Quality	Marine Habitats	Marine Life
Task 1: Administration	Featured Presentations @ Monthly Meetings; Blog & Website				
Task 2: Marine Stewardship	Shore Stewards; Beachwatchers; Watershed Day; outreach to project partners		Plastics education		
Task 3: Olympia Oyster	Chumsortium/ SSTAG meetings	Surveys, Monitoring & Sampling	Restoration of native oysters has longterm benefit to Marine water Quality	Habitat Characterizations	Better understanding of life cycles, needs and limiting factors for Olympia Oysters
Task 4: Eelgrass Protection	Video; Press releases; paid advertisements; displays; brochures, & postcards & @ events	Surveys of Port Ludlow, Mats Mats and Discovery Bays	Protection of eelgrass beds has longterm benefit to Marine Water Quality	Voluntary protection zone implements a management tool for eelgrass habitat recovery	Identifying and carrying out actions to protect and restore eelgrass; eelgrass protection zone functions as a voluntary MPA
Task 5: Drift Cell Restoration		Oak Bay archeological study		Preliminary planning for designing and implementing projects that restore natural processes; making policy and scientifically-based recommendations about management tools to protect nearshore habitats	
Task 6: Mystery Bay Harbor Management	Public Meetings on Management Plan; Video showing		Promote harbor management actions that restore areas experiencing degraded water quality.	Protect habitats from improper mooring buoy installation and anchoring that cause degradation.	Partner with others to maintain and restore benthic habitats such as sea grasses.
Task 7: Maynard Beach Nearshore Restoration	Chumsortium/ SSTAG meetings			Preliminary planning for designing and implementing actions that restore natural functions	